Ridley Township

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Township of Ridley**	Permit No.:	**PAN/A**
Mailing Address:	**100 East MacDade Boulevard**	Effective Date:	**N/A**
City, State, Zip:	**Folsom, PA 19033**	Expiration Date:	**N/A**
Contact Person:	**Ed Pisani**	Renewal Due Date:	**N/A**
Title:	**Township Manager**	Municipality:	**Ridley Township**
Phone:	**610-534-4806**	County:	**Delaware**
Email:	**episani@ridleytwp.org**	Consultant Name:	**Catania Engineering Associates, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:

   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:

   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Please note that the Chapter 94 Spreadsheet was used to show monthly average flows and projections; it is understood that this report is for a collection system only.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- ☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)
- ☐ List summarizing each extension or project attached (**Attachment**)
- ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

No sewer extensions were constructed or approved within the past calendar year. A copy of the sanitary sewer system map is attached.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

See attachment.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

Based upon a periodic video inspection, the system is in fair to good condition. No SSOs were reported for the 2018 calendar year.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☒ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number – **0**)

☐ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

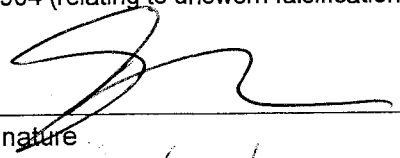
☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Edmond Pisani	
Name of Responsible Official	Signature
610-534-4806	2/19/2019
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Charles Catania Jr.	Signature
Name of Preparer	2/19/19
610-532-2884	Date
Telephone No.	

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spread
Sewage Treatment Pl

Reporting Year: 2018

Facility Name: Ridley Township - CDCA

Permit No.:

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: MGD
Upgrade Planned in Next 5 Years? Year:
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: lbs BOD5/day
Upgrade Planned in Next 5 Years? Year:
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2014	2015	2016	2017	2018
January	2.88152	2.95962	2.60981	2.66328	2.34189
February	3.81816	2.8779	3.27572	2.39357	3.20809
March	3.27011	3.99639	2.5334	3.06201	3.54062
April	3.33828	3.03785	2.29887	3.10314	3.01929
May	4.58293	2.56218	2.97893	3.00923	3.13938
June	3.70487	3.08916	2.53915	2.3158	2.65384
July	3.26464	2.98195	2.40895	2.30136	2.05746
August	3.08063	2.30561	2.2587	2.32495	2.17025
September	2.80186	2.26722	2.19083	2.07157	2.47366
October	2.80763	2.41293	2.27812	2.00728	2.30738
November	3.28761	2.24674	2.16222	2.04998	3.31342
December	3.64524	2.71021	2.45291	2.10746	3.10732
Annual Avg	3.3736227	2.78731469	2.49896726	2.45080256	2.7777156
Max 3-Mo Avg	3.87535684	3.30404862	2.86524619	3.05812275	3.25599744
Max : Avg Ratio	1.15	1.19	1.15	1.25	1.17
Existing EDUs	9,620.0	9,482.0	9,482.0	9,482.0	9,482.0
Flow/EDU (GPD)	350.7	294.0	263.5	258.5	292.9
Flow/Capita (GPD)	100.2	84.0	75.3	73.8	83.7
Exist. Overload?					

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2014	2015	2016	2017	2018
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Annual Avg					
Max Mo Avg					
Max : Avg Ratio					
Existing EDUs	9,620	9,482	9,482	9,482	9,482
Load/EDU					
Load/Capita					
Exist. Overload?					

Projected Flows for Next Five Years (MGD)

	2019	2020	2021	2022	2023
New EDUs	1.0	1.0	1.0	1.0	1.0
New EDU Flow	0.0003	0.0003	0.0003	0.0003	0.0003
Proj. Annual Avg	2.77798	2.77828	2.77858	2.77888	2.77918
Proj. Max 3-Mo Avg	3.2784	3.27875	3.2791	3.27946	3.27981
Proj. Overload?					

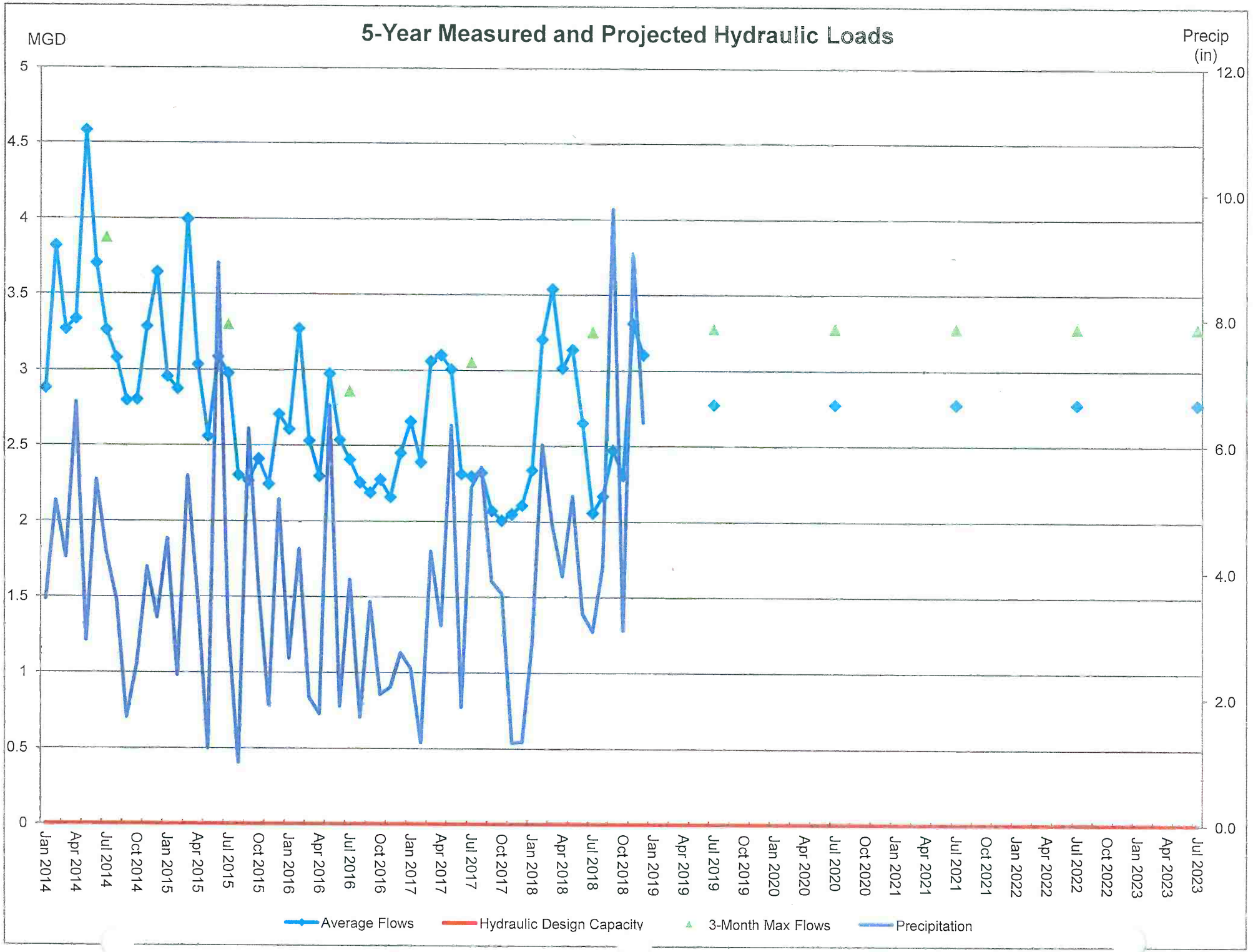
Projected BOD5 Loads for Next Five Years (lbs/day)

	2019	2020	2021	2022	2023
New EDUs	1	1	1	1	1
New EDU Load	0.584	0.584	0.584	0.584	0.584
Proj. Annual Avg	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Proj. Max Avg	#DIV/0!				
Proj. Overload?	#DIV/0!				

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2014	2015	2016	2017	2018
January	3.56	4.52	2.63	2.48	2.85
February	5.12	2.36	4.36	1.3	6.02
March	4.23	5.52	2.01	4.33	4.74
April	6.69	3.58	1.75	3.15	3.94
May	2.91	1.2	6.65	6.33	5.21
June	5.46	8.89	1.87	1.86	3.34
July	4.3	3.16	3.88	5.35	3.06
August	3.55	0.98	1.7	5.66	4.11
September	1.69	6.27	3.52	3.86	9.76
October	2.54	3.76	2.06	3.66	3.08
November	4.07	1.89	2.17	1.3	9.03
December	3.27	5.14	2.72	1.31	6.38


5-Year Measured and Projected Hydraulic Loads
MGD
Precip (in)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan 2014
Apr 2014
Jul 2014
Oct 2014
Jan 2015
Apr 2015
Jul 2015
Oct 2015
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
Precipitation

RIDLEY TOWNSHIP MONTHLY FLOW METER DATA

Meter No.	Meter Location	Total EDUs	Outside EDUs	January			February			March			April			May			June			Comments
				Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	
4	Walter Street (at Randall Avenue)	1,122		5,899,920	170		8,908,500	284		11,108,083	319		7,485,472	222		9,469,269	272		7,336,941	218		
5	Tower, Utility Road (Crum Creek Drive at Harfman)	256		1,577,929	199		1,782,238	249		2,081,588	262		1,915,419	249		1,591,662	201		1,262,755	164		
6	Bullens Lane (at Crum Creek)	349		3,805,315	352		4,952,120	507		4,928,267	456		4,136,846	395		3,946,172	365		2,996,437	286		
7	Behind Ardsley	538		4,117,628	247		4,307,707	286		5,580,274	335		4,730,565	293		4,789,016	287		4,323,674	268		
8	Behind Blackrock Road (at Michigan Avenue)	285		2,694,625	305		3,370,260	422		4,361,303	494		3,510,646	411		3,218,171	364		2,753,931	322		
10	Behind Georgetown Cul-De-Sac	472	171	4,584,853	295	*-1,832,065*	5,686,567	458	*-1,825,303*	6,907,731	532	*-1,942,257*	5,519,935	413	*-1,786,557*	6,018,932	450	*-1,815,967*	4,808,728	382	*-1,360,606*	Outside flow from Swarthmore Borough's Meter No.: 4
11	End of 7th Avenue	676		4,090,420	195		4,697,585	248		6,108,556	291		5,103,496	252		5,135,170	245		4,078,821	201		
13	Behind Haverford Road (near MacDade Blvd.)	129		1,119,978	280		1,235,123	342		1,748,367	437		1,432,058	370		1,506,943	377		1,341,115	347		
14	Hoffman Road (at Darby Road)	329		2,356,436	231		2,594,621	282		2,888,510	283		2,747,872	278		2,771,115	272		2,628,417	266		
15	Darby Road (at Darby Creek)	550	79	5,344,760	329	*-533,970*	5,658,802	376	*-694,851*	6,298,892	377	*-799,740*	5,194,877	326	*-581,981*	5,481,978	333	*-623,813*	4,735,451	296	*-550,362*	Outside EDUs from Prospect Park Borough (using average from all Prospect's meters for estimate)
19	Chester Pike (near Smiley Street)	330		2,520,135	246		3,799,497	411		4,205,501	411		2,956,795	299		2,833,592	277		2,409,209	243		
21	Lakeview Drive (inst into interceptor D/S of SC-280)	409		3,321,690	262		5,735,351	501		6,239,382	492		3,758,968	306		4,105,258	324		3,387,727	276		
22	945 Agnes Avenue																					Outside flow in CDCA Interceptor. Not included in gal/EDU calculation
23	Across from 1916 Franklin Avenue (in driveway)																					Outside flow in CDCA Interceptor. Not included in gal/EDU calculation
24	Intersection of Sutton and Second Avenues	1,634		43,248,311	289	*-28,614,140*	47,992,104	355	*-31,754,864*	60,021,937	424	*-38,546,544*	51,784,523	426	*-30,906,956*	55,831,010	465	*-32,269,455*	46,829,767	382	*-28,089,915*	Outside EDUs from Ridley Township Meter No's: 22 and 23
	Unmetered Areas (average volume from all meters)	2,403		18,896,689	254		23,380,939	347		28,569,221	384		23,576,769	327		25,331,629	340		20,723,048	287		Use average EDU from all Propsect meters for estimate
	TOTAL	**9,482**	**250**	**72,598,514**			**89,826,396**			**109,759,071**			**90,578,747**			**97,320,682**			**79,615,138**			

RIDLEY TOWNSHIP MONTHLY FLOW METER DATA

Meter No.	Meter Location	Total EDUs	Outside EDUs	July			August			September			October			November			December			Comments
				Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	
4	Walter Street (at Randall Avenue)	1,122		6,396,422	184		6,546,650	188		8,647,691	257		7,481,475	215		10,691,541	318		9,947,060	286		
5	Tower, Utility Road (Crum Creek Drive at Harfman)	256		1,419,198	179		1,411,857	178		1,488,624	194		1,396,583	176		2,032,250	265		2,010,646	253		
6	Bullens Lane (at Crum Creek)	349		2,328,690	215		2,466,869	228		2,522,550	241		2,765,560	256		3,500,374	334		3,931,515	363		
7	Behind Ardsley	538		3,474,763	208		3,964,996	238		4,584,667	284		4,681,716	281		5,506,598	341		4,759,640	285		
8	Behind Blackrock Road (at Michigan Avenue)	285		2,399,102	272		2,667,697	302		3,146,182	368		3,000,782	340		4,166,980	487		4,073,719	461		
10	Behind Georgetown Cul-De-Sac	472	171	3,857,554	292	*-1,136,602*	4,064,539	298	*-1,284,372*	4,457,799	351	*-1,287,096*	4,052,794	291	*-1,337,042*	6,081,594	488	*-1,676,313*	6,424,314	507	*-1,689,392*	Outside flow from Swarthmore Borough's Meter No.: 4
11	End of 7th Avenue	676		3,621,869	173		3,874,525	185		4,011,978	198		4,248,141	203		6,681,355	329		6,210,376	296		
13	Behind Haverford Road (near MacDade Blvd.)	129		1,111,375	278		1,356,981	339		1,449,930	375		1,486,367	372		2,152,725	556		2,083,571	521		
14	Hoffman Road (at Darby Road)	329		2,471,742	242		2,604,085	255		2,762,963	280		2,834,651	278		3,444,636	349		3,491,671	342		
15	Darby Road (at Darby Creek)	550	79	4,619,448	285	*-452,187*	4,620,016	283	*-491,711*	4,693,302	292	*-570,273*	4,713,121	284	*-572,095*	5,537,629	334	*-820,425*	5,182,435	300	*-799,320*	Outside EDUs from Prospect Park Borough (using average from all Prospect's meters for estimate)
19	Chester Pike (near Smiley Street)	330		1,912,722	187		1,985,139	194		2,561,016	259		2,455,180	240		3,933,772	397		3,545,110	347		
21	Lakeview Drive (inst into interceptor D/S of SC-280)	409		3,030,203	239		3,397,030	268		5,835,556	476		4,165,392	329		5,134,873	418		5,040,933	398		
22	945 Agnes Avenue																					Outside flow in CDCA Interceptor. Not included in gal/EDU calculation
23	Across from 1916 Franklin Avenue (in driveway)																					Outside flow in CDCA Interceptor. Not included in gal/EDU calculation
24	Intersection of Sutton and Second Avenues	1,634		37,034,583	239	*-24,909,240*	38,539,871	248	*-25,958,067*	38,664,681	216	*-28,075,886*	40,055,852	228	*-28,518,032*	51,870,111	350	*-34,708,528*	52,244,082	336	*-35,202,464*	Outside EDUs from Ridley Township Meter No's: 22 and 23
	Unmetered Areas (average volume from all meters)	2,403		16,601,652	223		17,511,781	235		19,316,082	268		18,618,216	250		25,873,569	359		25,072,941	337		Use average EDU from all Propsect meters for estimate
	TOTAL	**9,482**	**250**	**63,781,294**			**67,277,886**			**74,209,766**			**71,528,661**			**99,402,741**			**96,326,837**			

9 YEAR PROGRAM

Crum Creek
440 MANHOLES
434 (NEXT NO.)

Little Crum Creek
554 MANHOLES
556 (NEXT NO.)

Ridley Creek
8 MANHOLES

Stoney Creek
382 MANHOLES

Shipley Run
206 MANHOLES/
204 (NEXT NO.)

Muckinipates Creek
142 MANHOLES

DARBY CREEK
95 MANHOLES

TOTAL MANHOLES: 1788

SPRINGFIELD TOWNSHIP
NETHER PROVIDENCE TOWNSHIP
SWARTHMORE BOROUGH
SPRINGFIELD TOWNSHIP
MORTON BOROUGH
SPRINGFIELD TOWNSHIP
CHESTER CITY
RUTLEDGE BOROUGH
(UD)
UPPER DARBY TOWNSHIP
RIDLEY PARK BOROUGH
DARBY TOWNSHIP
EDDYSTONE BOROUGH
GLENOLDEN BOROUGH
PROSPECT PARK BOROUGH
NORWOOD BOROUGH
TINICUM TOWNSHIP

NOTE:
DC-MH #'S 57-58-59-60-61 ARE UNUSED

NO.	DATE	REVISION	DWN. BY	CKD. BY
8	11/12/15	FARADAY-KINDER PARK-PENN HILLS	J.M.D.	C.J.C
7	3/12/13	UPDATES	J.M.D.	C.J.C
6	8/22/12	ADD WOODCREST TERR	J.M.D.	C.J.C
5	4/20/12	REV. ADD PIPE SUTTON	J.M.D.	C.J.C
4	6/16/11	UPDATES	J.M.D.	C.J.C
3	01/28/11	UPDATES	JMD	CJC
2	04/04/07	UPDATES	MNC	CJC
1	12/05/06	UPDATES	MNC	CJC

CATANIA ENGINEERING ASSOCIATES, INC.
Consulting Engineers
520 WEST MacDADE BOULEVARD
WILMONT PARK, PA. 19033-3311
TEL. (610) 532-2884
FAX. (610) 532-2923

RIDLEY TOWNSHIP SANITARY SEWER SYSTEM

DWN. BY	TAG	DSG. BY		FIELD BOOK/PAGE	
CKD. BY	PJC				
SCALE	1"=600'	DRAWING NO.	83000-112		
DATE	01/03/03	SHEET	1 OF 1	SHEETS	

Sanitary Sewer Monitoring Summary

Township forces are used for inspection, troubleshooting and routine maintenance of the sanitary sewer system.

Each year, a portion of the system is cleaned and video inspected as part of the Township's Preventative Maintenance Program. The Line Cleaning Program is completed by Township personnel and is set as a 4-year program to address the entire system. The Video Inspection Program is an ongoing 9-year program. Each phase in contracted to a sewer specialty contractor.

To monitor the flow within the system, the Township has strategically placed 15 flow meters in the CDCA system, 3 meters in the Muckinipates system, and 0 meters in DELCORA system (less than 20 EDU's) that records flow data in 15 minute intervals as part of the DELCORA metering system. This data is reviewed to ensure proper flow conditions and to help identify areas that may be experiencing abnormally low or high flows for investigating potential issues.

Pump Station Summary

Small compressed air ejector station at Chester Pike near Crum Creek is maintained under contract.

Rutledge Borough

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Borough of Rutledge**	Permit No.:	**PAN/A**
Mailing Address:	**212 Unity Terrace**	Effective Date:	**N/A**
City, State, Zip:	**Rutledge, PA 19070**	Expiration Date:	**N/A**
Contact Person:	**Barbarann Keffer**	Renewal Due Date:	**N/A**
Title:	**Borough Administrator**	Municipality:	**Rutledge Borough**
Phone:	**610-544-1028**	County:	**Delaware**
Email:	**rutledgemanager@gmail.com**	Consultant Name:	**Catania Engineering Associates, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Please note that the Chapter 94 Spreadsheet was used to show monthly average flows and projections; it is understood that this report is for a collection system only.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☐ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

No sewer extensions were constructed or approved within the past calendar year. A copy of the sanitary sewer system map is attached.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Contract forces are used for troubleshooting and routine maintenance. Video inspection is conducted periodically and as-needed in conjunction with required emergency repairs. Using the video inspections, the Borough has prioritized the sewer system's needs and is employing a multi-year program to treat structural deficiencies.

In 2018 the Borough compelted two (2) separate projects which included the relining of approximately 5,200 linear feet of 8 inch pipe, the rehabiliation of approximtately 16 manholes and assoicated improvements.

The Borough of Rutledge, in coordination with DELCORA has flow metering equipment to monitor flows through the sanitary system. CSL Services, Inc. was contracted by DELCORA to calibrate and maintain the flow monitoring equipment throughout 2018. Calibration reports are maintained by DELCORA. Rutledge Borough utilizes flow data to assist in the identification of areas that require attention.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

Based on video inspections, the system is in fair to good condition.

There are no known areas of capacity exceedance and no areas of capacity exceedance expected in the next five years. No SSOs were reported for the 2018 calendar year.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☒ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☐ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

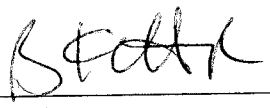
☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Barbarann Keffer	
Name of Responsible Official	Signature
610-544-1028	2.22.19
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Charles Catania Jr.	
Name of Preparer	Signature
610-532-2884	2/24/19
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spread
Sewage Treatment Pl

Reporting Year: 2018

Facility Name: Rutledge Borough - CDCA

Permit No.:

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: MGD
Upgrade Planned in Next 5 Years? Year:
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: lbs BOD5/day
Upgrade Planned in Next 5 Years? Year:
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2014	2015	2016	2017	2018
January	0.29967	0.18637	0.16696	0.11105	0.10788
February	0.37771	0.14091	0.17313	0.10262	0.13275
March	0.28682	0.23449	0.15239	0.13061	0.16349
April	0.30886	0.22205	0.15443	0.13615	0.14082
May	0.20473	0.13269	0.17779	0.11085	0.12129
June	0.12718	0.18123	0.13116	0.09144	0.10921
July	0.12271	0.16052	0.10986	0.10389	0.09768
August	0.11696	0.11841	0.10434	0.09153	0.1085
September	0.11565	0.11156	0.09221	0.09127	0.12108
October	0.11147	0.13995	0.08978	0.09056	0.12678
November	0.13809	0.11762	0.08887	0.0835	0.19181
December	0.17121	0.16215	0.11762	0.09808	0.19118
Annual Avg	0.1984217	0.15899624	0.12987788	0.10346241	0.13437224
Max 3-Mo Avg	0.3244618	0.19914917	0.16741261	0.12587116	0.16992404
Max : Avg Ratio	1.64	1.25	1.29	1.22	1.26
Existing EDUs	527.0	527.0	527.0	527.0	527.0
Flow/EDU (GPD)	376.5	301.7	246.4	196.3	255.0
Flow/Capita (GPD)	107.6	86.2	70.4	56.1	72.9
Exist. Overload?					

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2014	2015	2016	2017	2018
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Annual Avg					
Max Mo Avg					
Max : Avg Ratio					
Existing EDUs	527	527	527	527	527
Load/EDU					
Load/Capita					
Exist. Overload?					

Projected Flows for Next Five Years (MGD)

	2019	2020	2021	2022	2023
New EDUs	1.0	1.0	1.0	1.0	1.0
New EDU Flow	0.0003	0.0003	0.0003	0.0003	0.0003
Proj. Annual Avg	0.14533	0.14563	0.14593	0.14623	0.14653
Proj. Max 3-Mo Avg	0.19351	0.19391	0.19431	0.19471	0.19511
Proj. Overload?					

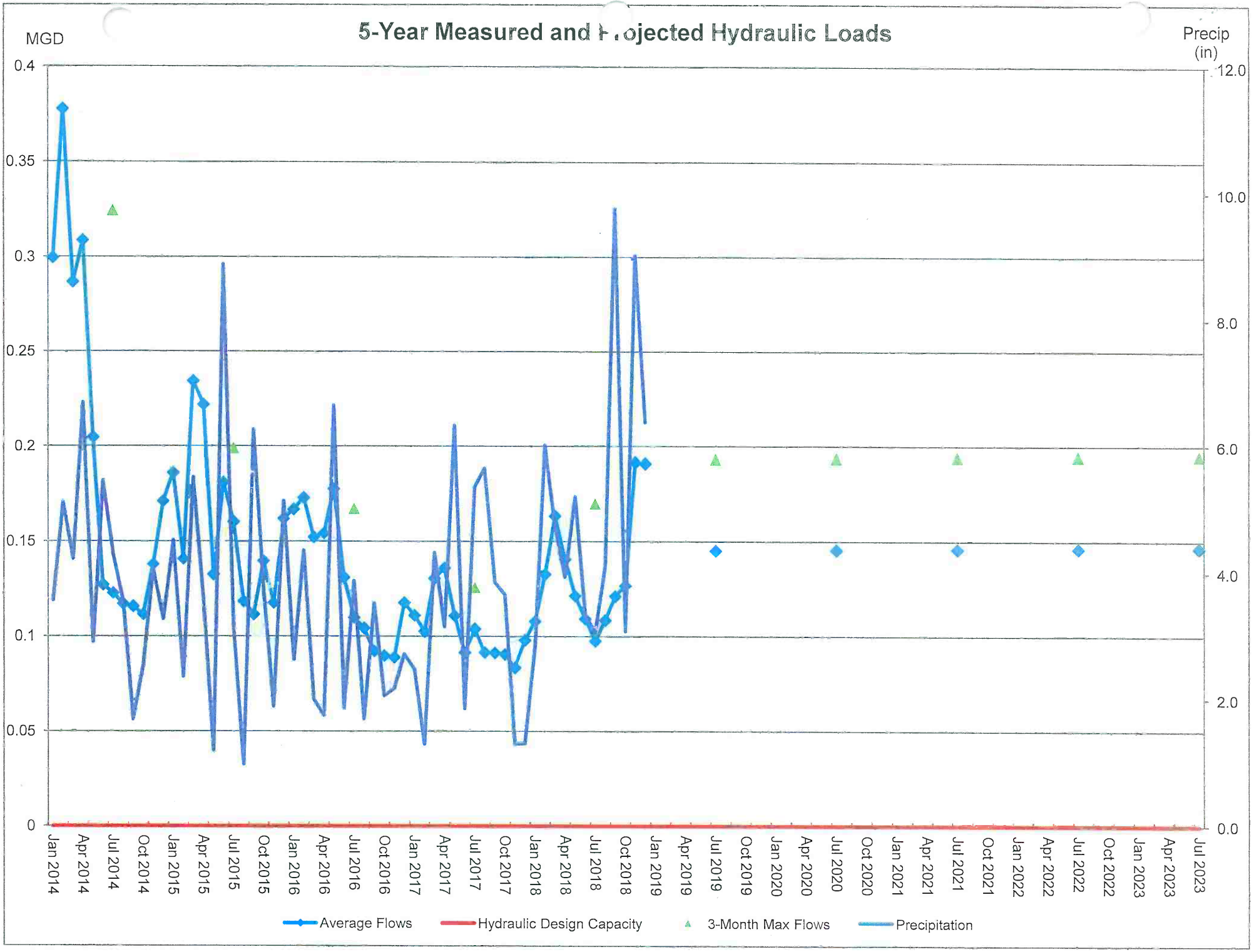
Projected BOD5 Loads for Next Five Years (lbs/day)

	2019	2020	2021	2022	2023
New EDUs	1	1	1	1	1
New EDU Load	0.584	0.584	0.584	0.584	0.584
Proj. Annual Avg	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Proj. Max Avg	#DIV/0!				
Proj. Overload?	#DIV/0!				

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2014	2015	2016	2017	2018
January	3.56	4.52	2.63	2.48	2.85
February	5.12	2.36	4.36	1.3	6.02
March	4.23	5.52	2.01	4.33	4.74
April	6.69	3.58	1.75	3.15	3.94
May	2.91	1.2	6.65	6.33	5.21
June	5.46	8.89	1.87	1.86	3.34
July	4.3	3.16	3.88	5.35	3.06
August	3.55	0.98	1.7	5.66	4.11
September	1.69	6.27	3.52	3.86	9.76
October	2.54	3.76	2.06	3.66	3.08
November	4.07	1.89	2.17	1.3	9.03
December	3.27	5.14	2.72	1.31	6.38


5-Year Measured and Projected Hydraulic Loads
MGD
Precip (in)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan 2014
Apr 2014
Jul 2014
Oct 2014
Jan 2015
Apr 2015
Jul 2015
Oct 2015
Jan 2016
Apr 2016
Jul 2016
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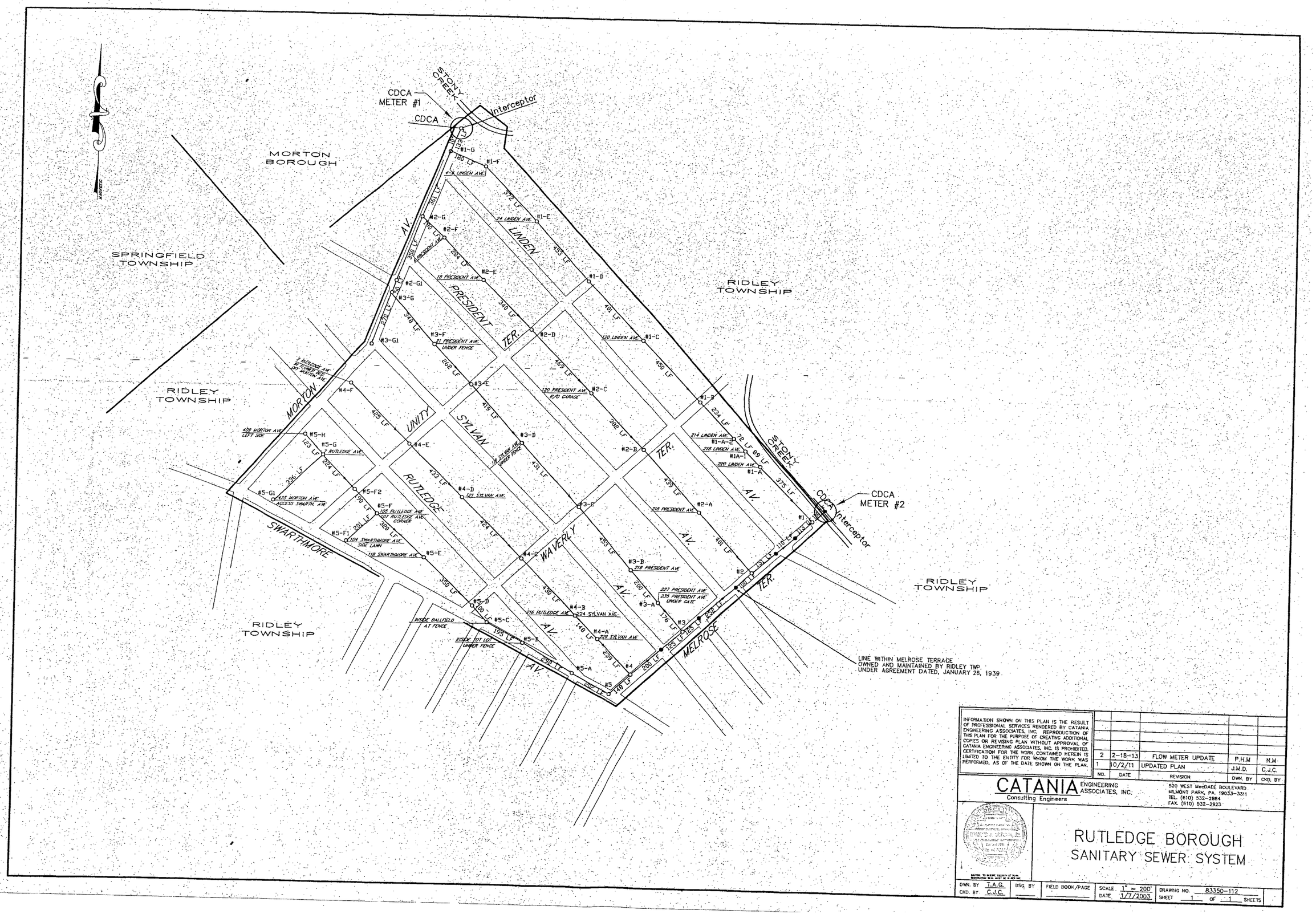
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
Precipitation

RUTLEDGE BOROUGH MONTHLY FLOW METER DATA

Meter No.	Meter Location	Total EDUs	Outside EDUs	January				February				March				April				May			June				Comments
				Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	
1	Melrose Terrace (between Agnes Avenue and Linden Avenue	423	205	4,096,743	368	*-1,612,077*		4,665,580	438	*-1,994,629*		5,820,238	552	*-2,437,241*	*345,268*	2,121,261	466	*-2,011,335*	*2,939,299*	4,739,601	382	-2,161,042	4,064,544	351	*-1,767,884*		Outside EDUs from Ridley Township (using average from all Ridley's meters for estimate)
2	Morton Avenue	77	10	648,783	275	*-78,638*		821,643	386	*-97,299*		1,020,114	434	*-118,890*		907,858	403	*-98,114*		961,568	412	-105,417	742,254	346	*-86,238*	*40,108*	Outside EDUs from Ridley Township (using average from all Ridley's meters for estimate)
	Unmetered Areas (average volume from all meters)	27		289,403	346			321,660	425			438,583	524			365,587	451			325,394	389		283,527	350			Use average EDU from all Propsect meters for estimate
	TOTAL	**527**	**215**	**3,344,214**				**3,716,955**				**5,068,072**				**4,224,556**				**3,760,104**			**3,276,311**				

Meter No.	Meter Location	Total EDUs	Outside EDUs	July				August				September				October				November			December				Comments
				Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	Recorded Volume	Gallons EDU/Day	Outside EDUs	Recorded Volume	Gallons EDU/Day	Outside EDUs	Missing Volume (est)	
1	Melrose Terrace (between Agnes Avenue and Linden Avenue	423	205	3,511,174	295	*-1,416,287*		3,709,614	328	*-1,493,931*		4,087,196	373	*-1,647,856*		4,269,392	397	*-1,588,321*		6,045,039	587	*-2,207,275*	6,416,278	633	*-2,138,973*		Outside EDUs from Ridley Township (using average from all Ridley's meters for estimate)
2	Morton Avenue	77	10	357,262	181	*-69,087*	*382,972*	929,620	412	*-72,875*		959,092	437	*-80,383*		986,533	438	*-77,479*		1,526,339	706	*-107,672*	1,240,638	547	*-104,340*		Outside EDUs from Ridley Township (using average from all Ridley's meters for estimate)
	Unmetered Areas (average volume from all meters)	27		262,045	81			291,072	348			314,342	388			340,117	406			497,978	615		512,868	613			Use average EDU from all Propsect meters for estimate
	TOTAL	**527**	**215**	**3,028,079**				**3,363,500**				**3,632,391**				**3,930,243**				**5,754,409**			**5,926,470**				



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NO.	DATE	REVISION	DWN. BY	CKD. BY
2	2-18-13	FLOW METER UPDATE	P.H.M	N.M.
1	10/2/11	UPDATED PLAN	J.M.D.	C.J.C.

CATANIA ENGINEERING ASSOCIATES, INC.
Consulting Engineers
520 WEST MacDADE BOULEVARD
MILMONT PARK, PA. 19033-3311
TEL. (610) 532-2864
FAX. (610) 532-2923

RUTLEDGE BOROUGH
SANITARY SEWER SYSTEM

DWN. BY	DSG. BY	FIELD BOOK/PAGE	SCALE	DRAWING NO.
T.A.G.			1" = 200'	83350-112
CKD. BY			DATE	SHEET
C.J.C.			1/7/2003	1 OF 1 SHEETS

Industrial Waste Report

DELCORA is currently responsible for issuance of Industrial Waste Permits to companies discharging into Rutledge Borough Sewers. The regulation governing discharge of the industrial wastes as well as any program for surveillance and monitoring of industrial waste discharges is maintained by DELCORA.

There are no known industrial permits for the Rutledge Borough system.

Springfield Township

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Sprinfield Township - CDCA**	Permit No.:	**PAWH0025**
Mailing Address:	**50 Powell Road**	Effective Date:	
City, State, Zip:	**Springfield, PA 19064**	Expiration Date:	
Contact Person:	**Lee Fulton**	Renewal Due Date:	
Title:	**Township Manager**	Municipality:	**Springfield Township**
Phone:	**610-544-1300**	County:	**Delaware County**
Email:	**lfulton@springfielddelco.org**	Consultant Name:	**McCormick Taylor, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   N/A

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☐ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

There were no sewer extensions made in 2018. In addition, there are no planned or approved extensions at this time.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Monitoring, maintenance and rehabilitation programs have been established in accordance with the Water Environment Federation's (WEF) Existing Sewer Evaluation and Rehabilitation (WEF MOP FD-6; ASCE MREP-62) and WEF's MOP 7.

DELCORA installed six flow meters within the Central Delaware County Authority sewer shed within Springfield Township. The recorded data includes four meters that records only Springfield Township; however, the other two meters include flow from both Springfield and Ridley Townships. The maintenance of these meters is the responsibility of DELCORA. These meters record the flow every 15 minutes and the transmission of information happens periodically throughout the day. Since the meters are maintained and owned by DELCORA, the required calibration report would have to be obtained from them.

The Township's sewer lines have been catalogued and prioritized for inspection and evaluation. The Public Works Department conducts inspection and evaluation activities according to the schedule prescribed by the Township Engineer. Inspection and evaluation are facilitated through a jet cleaning truck and a closed circuit television sewer inspection truck operated by a three man crew from the Public Works Department. Public Works inspects between 10 and 20 miles of sewer line annually. The lines are evaluated for defects (breaks, roots, I/I, grease, etc.) by the field crew and also by the Public Works Superintendent and Township Engineer. Any defects discovered during evaluation are assessed, rated and prioritized for repair or further evaluation as necessary. To reduce the amount of Inflow and Infiltration within the sewer shed, Springfield Township will need to evaluate areas within the sewer shed that have been identified as areas of concern.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☒ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

There was one SSO that occurred in 2018. The Sanitary Sewer Overflow (SSO) Report to PADEP - Water Management is attached for your use.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☒ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☐ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☐ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Lee Fulton, Township Manager	J. Lee Fulton
Name of Responsible Official	Signature
610-544-1300	2-14-19
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Susan M. Guisinger-Colon, P.E.	Susan M Guisinger-Colon
Name of Preparer	Signature
610-640-3500	2/15/2019
Telephone No.	Date

Attachment A

Sanitary Sewer Overflow (SSO) Report to PADEP- Water Management **DEP fax: 484-250-5971**

Please check the appropriate box ☑ Dry Weather Overflow ☐ Wet Weather Overflow

1. Date, Name, Phone # of person completing this report	Date: February 26, 2018 Name: Jeffrey W. Bickel Phone: 610-636-8935
2. Your organization name and address ?	Name: Springfield Township County: Delaware Address: 1258 Church Rd / 50 Powell Rd Township/Municipality: Springfield Twp. Springfield, PA 19064
Sewer system owner and permit number	Springfield Township (WH0025)
3. Date found and specific location of SSO. Including Municipality/County (if different from #2) ?	Date: 2/26/2018 Municipality: Springfield Township Location(Street & #): 610 E. Woodland Ave County: Delaware
4. How was SSO discovered? By whom ?	The superintendent for Springwood Apartments reported the overflow to John Devlin, Township Plumbing Inspector.
5. Start and end time of SSO (actual or estimate?)	Start time - 2/26/2018, 10:39 AM End time - 2/26/208, 11:05 AM
6. Date, time and name of person who called PADEP originally to notify of SSO ?	Date : 2/26/2018 Time : 11:15 - 11:20 AM Name : Linda Anders
7. Description and actual or estimated volume of SSO	Approximately 150 gallons of sewage was released to the the environment through the vent/cleanout due to a physical blockage in the 8-inch TCP sewer main.
8. Where, precisely, did SSO go ? (land, roadway, basement, swale, storm sewer, creek, etc) Please include creek name or street location.	The SSO discharged to the PennDOT storm sewer system that outlets to Stoney Creek, tributary to Darby Creek.
9. What caused SSO ? How was it stopped ?	The minor blockage was caused by small amounts of roots and grease, and lodged paper towles; located at a 90-degree bend. The line was flushed clear using the high pressure jet unit. Clog was eliminated and restored the capacity of the sewer main.
10. Describe extent of contamination and how it was cleaned up	Absorbant towels used to contain and remove sewage from paved surfaces; no contamination was evident in Stoney Creek/storm sewer system.
11. What actions will be taken to prevent a re-occurrence ? When ?	Sewer line was video inspected after cleaning with jet unit; passed inspection. Springfield sewer department wil continue to check and periodically flush the main.
12. Other comments ?	Springfield's goal is to keep our streams clear.
13.Downstream notifications made: (All downstream users such as public water supplies must be notified)	There are no public water supplies downstream from Springfield Township.

Swarthmore Borough

Pennoni

MUNICIPAL WASTELOAD MANAGEMENT

2018 Chapter 94 Report

Prepared For:

BOROUGH OF SWARTHMORE

DELAWARE COUNTY, PA

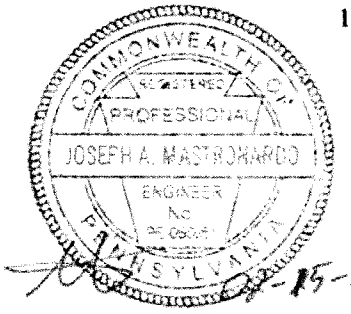
Prepared By:

PENNONI ASSOCIATES INC.

1900 Market Street, Suite 300

Philadelphia, PA 19103

215-222-3000



2-15-19

FEBRUARY 2019

JOSEPH A. MASTRONARDO

BOROUGH ENGINEER

SWATB 00720

Pennoni

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Tables

Figures

Appendices

Pennoni

PERMITTEE:

NAME: Jane Billings, Borough Manager

ORGANIZATION: Borough of Swarthmore

ADDRESS: Borough Administrative Office
121 Park Avenue
Swarthmore, PA 19081- 1536

PHONE: (610) 543-4599

PREPARER:

NAME: Joseph A. Mastronardo, PE

ORGANIZATION: Pennoni Associates Inc.

ADDRESS: 1900 Market Street
Philadelphia, PA 19103

PHONE: (215) 222-3000

This report has been prepared in accordance with Title 25, Part 1, Subpart C, Article 11, Chapter 94, of the Commonwealth of Pennsylvania Regulations.

1. INTRODUCTION

Sewage flows from Swarthmore Borough are conveyed to DELCORA's Western Regional Treatment Plant via the Central Delaware County Authority's Crum Creek Interceptor and Little Crum Creek Interceptor and DELCORA's Central Pump Station. The system serves approximately 1,350 single-family residential dwelling units, 700 multi-family dwelling units, a college, an elementary school, a private school for special-needs students, and various commercial establishments in a three-block business district.

1.1. DESCRIPTION OF SYSTEM

The Borough Sanitary Sewer Collection System consists of 95,670 feet (FT) of sewer pipe broken down by size as follows:

a) 14,800 FT of 6 inch pipe.
b) 71,250 FT of 8 inch pipe.
c) 9,000 FT of 10 inch pipe.
d) 160 FT of 12 inch pipe.
e) 460 FT of 15 inch pipe.

The sewers are comprised mainly of terra-cotta/clay pipe, with some cast iron, the majority of which was installed in the 1950's. Poly-vinyl chloride (PVC) has been used for the newer replacements. There are no combined sewers, pump stations, or force mains.

Based upon a "Sewer System Evaluation" completed by Pennoni Associates in 1994, the system is in fair to good condition. Work identified in the study to correct infiltration and inflow and other structural problems has been completed. In 2002, the Borough approved a new sanitary sewer plan that includes dedicated funding for the maintenance program discussed in section 5 as well as for capital improvements to rectify problems identified in the inspection program.

Between 2011 and 2018, the Borough has performed video inspections of approximately 64,000 feet (FT) of sewer pipe, including 14,000 feet (FT) of sewer pipe in 2018 and identified a list of potential rehabilitation segments. Based on the analysis of the televised lines, the Borough has compiled a comprehensive list of sanitary sewer rehabilitation work. Additional lines will be identified and televised in 2019.

In 2019, a sanitary sewer replacement and lining contact will be undertaken to complete a portion of the sewer rehabilitation work identified during recent video inspections.

2. HYDRAULIC & ORGANIC LOADINGS

The Borough of Swarthmore does not own a sewage treatment plant.

3. BASIS OF HYDRAULIC & ORGANIC PROJECTIONS

The Borough of Swarthmore does not own a sewage treatment plant.

4. SEWER EXTENSIONS

Development within the Borough is projected to occur at a slow place, as the Borough is mostly "built-out". The majority of new sewer connections are "infill" developments adding laterals to existing sewer mains. No sanitary sewer extensions were constructed within the Borough in 2018.

5. SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR AND REHABILITATION

The Borough's Public Works Department provides routine maintenance and emergency line cleaning on a daily basis and has developed a Seven Year Plan which serves as a basis for ongoing Sewer Maintenance and Inspection programs as follows:

a) The Borough contracts with an outside contractor nearly every year to clean, root cut and video inspect a portion of the sewer system as part of an ongoing preventative maintenance program.

b) During the course of the year, the Public Works Department responds to various sewer blockages and in some cases repair work is completed. Attached in Appendix A is a comprehensive list of blockages/repairs for the year 2018.

c) As part of the routine preventive maintenance program, every year the Borough contracts with a private company to apply chemical root control within identified sewer line segments. In 2018 the Borough treated over 3,000 feet of sanitary sewer. The Borough has allocated $20,000 for root control in 2019.

6. CONDITION OF THE SEWER SYSTEM

6.1. POPULATION STATISTICS

The U.S. Census Bureau statistical data was used as a basis for the historical growth trend in the Borough as shown in Table 1 below:

TABLE 1 - Historical Population Growth

Year	Swarthmore Borough
2010 U.S. Census:	6,194
2014	6,198
2015	6,195
2016	6,218
2017	6,243
2018	6,255

Note:
(1) Based on U.S. Census, ACS Demographic and Housing Estimate (2010-2017).
(2) Based on average population growth over past 5 years

Per the 2010 U.S. Census, the Borough had experienced a slight increase in population in the past 5-year period. A population increase of 61 people has been estimated for the population trend between 2010 and 2018. In accordance with the 2010 U.S. Census, the average household size is 2.68.

6.2. HISTORICAL AND PRESENT SEWER FLOWS

Flow data is monitored in 5 manholes located throughout the Borough before flow is conveyed into the Little Crum and Crum Interceptors. Locations of sanitary sewer facilities are shown in Figure 1; the historic flows (past 5 years) for each sewer basin are included in Appendix B.

6.3. PROJECTED SEWER FLOWS

6.3.1. PROJECTED CONNECTIONS

In 2018, zero (0) new EDUs were added to the Borough collection system. Table 3 provides a summary of total projected connections anticipated to occur within the next five years. The projected flows are based on records of properties under construction, or currently awaiting Act 537 planning approval.

Table 2
HISTORICAL AND PRESENT SEWER FLOWS

Hydraulic Loading (MGD)						Rainfall (in)
Month	**2014**	**2015**	**2016**	**2017**	**2018**	**2018**
January	0.738	0.758	0.628	0.585	0.562	2.85
February	0.978	0.733	0.799	0.556	0.834	6.02
March	0.903	0.996	0.666	0.679	0.949	4.74
April	0.932	0.866	0.637	0.695	0.857	3.94
May	0.929	0.693	0.718	0.684	0.828	5.21
June	0.698	0.796	0.571	0.600	0.675	3.34
July	0.605	0.734	0.531	0.561	0.535	3.06
August	0.576	0.559	0.480	0.550	0.535	4.11
September	0.525	0.511	0.480	0.525	0.634	9.76
October	0.527	0.538	0.482	0.535	0.636	3.08
November	0.623	0.501	0.502	0.517	0.923	9.03
December	0.686	0.646	0.563	0.545	0.924	5.71
Annual Average (AA)	0.727	0.694	0.588	0.586	0.741	5.07
3 Month Max Avg	0.938	0.865	0.701	0.686	0.880	
5-year Avg	0.667					

NOTES:

The 2018 average three month maximum are highlighted

Table 3
Recent and Projected Sewer Connections

Approved/ Built Date	Name	Allocated No. of EDUs	Remaining No. of EDUs	Built in 2018	Project Buildout Schedule				
					2019	2020	2021	2022	2023
	Infill Connections	0	10		2	2	2	2	2
2019	Residential Development	4	4		1	3			
2018	BEP Building	0	0						
2016	Whittier Space (built out)	0	0						
2016	NPPR (built out)	46	0						
2015	Pavillion	5	5			5			
2014	Wellness Center (built out)	0	0						
2014	Danawell Dorms (built out)	38	0						
2014	Town Center West (built out)	42	0						
				TOTAL	3	10	2	2	2

Existing EDU's	2664
New in 2018	0
Total Connections	2664

Table 4
5 -Year Hydraulic Loading Projections

Hydraulic Loading Projection					
Projected Years	Previous Year Annual Average Flow [1]	New Connection[2]	Unit Flow[3]	Increased Flow from New Connections	Projected Annual Average Flow
	(MGD)	(EDU)	(GPD/EDU)	(MGD)	(MGD)
2019	0.667	3	268	0.001	0.668
2020	0.668	10	268	0.003	0.671
2021	0.671	2	268	0.001	0.671
2022	0.671	2	268	0.001	0.672
2023	0.672	2	268	0.001	0.672

NOTES:

(1) The 2019 previous year annual average flow starts with the previous 5-Year Hydraulic Annual Average Flow; See Table 2

(2) See Table 4 - Existing and Projected Sewer Connection Summary; a unit flow of 268 gpd/EDU (100 gpd x 2.68 people per household)

(3) Unit Flow of 268 GPD/EDU; Per the 2010 U.S. Census of 2.68 people per household * 100 gpd

6.3.2. BASIS FOR PROJECTED HYDRAULIC LOADING

The projected annual average flow for the Borough at the end of the next five year period is estimated to be 0.672 MGD. The projected hydraulic loadings (2019 thru 2023) presented in Table 4, are developed by adding the annual increased flow from proposed new connections to the previous year annual average flow. Please note the following:

- The increased flows from new connections are calculated from the projected new EDUs connection summary in Table 4. The projected EDUs are multiplied by the unit flow of 268 gpd/EDU. The unit flow is based on the 2010 census data of 2.68 people per residence at 100 gallons per person.

- The previous year annual average flow consists of the past 5 year hydraulic annual average flow of 0.667 MGD.

The overall capacity of the Borough's sanitary sewer collection system is adequate for present and projected flows identified. Currently, there are no problematic sewered areas where conveyance capacity is being or will be exceeded within the next five years.

There are no known or reported sections of sewer which surcharge during dry or normal wet weather flow events.

6.4. DISCUSSION OF REPAIRED, REPLACED, OR REHABILITATED SEWERS

As part of the Boroughs ongoing maintenance program, potential repairs have been identified that will continue to maintain the sewer system in a good state of repair.

6.5. SANITARY SEWER SURCHARGES AND OVERFLOWS

There were no known sanitary surcharges or sanitary sewer overflows (SSO) within the Borough during 2018.

7. PUMPING STATIONS

No public or private sewage pump stations are owned or operated in the Borough.

8. INDUSTRIAL WASTES

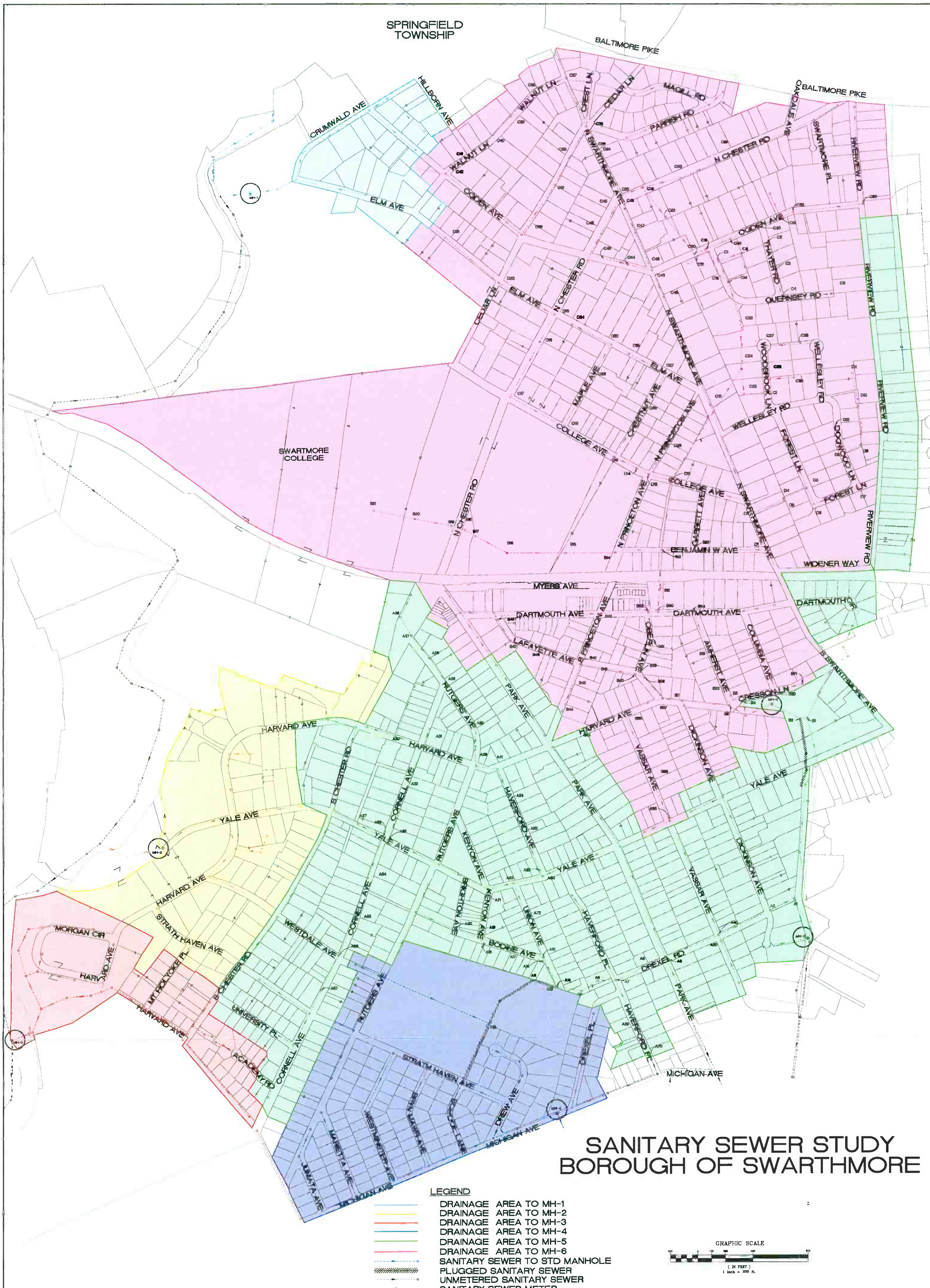
There are a small number of industrial users in the Borough. None of the users discharge an industrial waste to the system. Flows from these users (i.e. auto body shops) are domestic flows only.

9. PREVENTION OF OVERLOAD CONDITIONS

The Borough continues to maintain the sanitary sewer system. No overloads in the basin are anticipated.

FIGURES

FIGURE 1: 2018 Sewer Map



SANITARY SEWER STUDY
BOROUGH OF SWARTHMORE

LEGEND

- DRAINAGE AREA TO MH-1
- DRAINAGE AREA TO MH-2
- DRAINAGE AREA TO MH-3
- DRAINAGE AREA TO MH-4
- DRAINAGE AREA TO MH-5
- DRAINAGE AREA TO MH-6
- SANITARY SEWER TO STD MANHOLE
- PLUGGED SANITARY SEWER
- UNMETERED SANITARY SEWER
- SANITARY SEWER METER

GRAPHIC SCALE
(IN FEET)
1 inch = 200 ft.

APPENDICES

APPENDIX A

2018 Sewer Blockages

Blockages		
DATE	**Location**	**Description**
January 12, 2018	700 Block Yard Ave.	Sewer Debris
January 19, 2018	Dartmouth Cir., Dead End Man Hole	Plumber Working at Home Most of Day
March 7, 2018	6 Benjamin West Ave.	Sewer Debris
April 4, 2018	100 Block Rutgers Ave.	Grease
July 11, 2018	600 Block Havard Ave.	Grease
July 16, 2018	300 Block Dartmouth Ave.	Sewer Debris
September 3, 2018	15 Dogwood Lane	Root Ball
November 16, 2018	500 Block Michigan Ave.	Grease
November 25, 2018	100 Block Rutgers Ave.	Grease
December 5, 2018	100 Block Rutgers Ave.	Grease
December 8, 2018	200 Block Haverford Ave.	Grease, Feminine Products
December 25, 2018	300 Block Lafayette Ave.	Grease

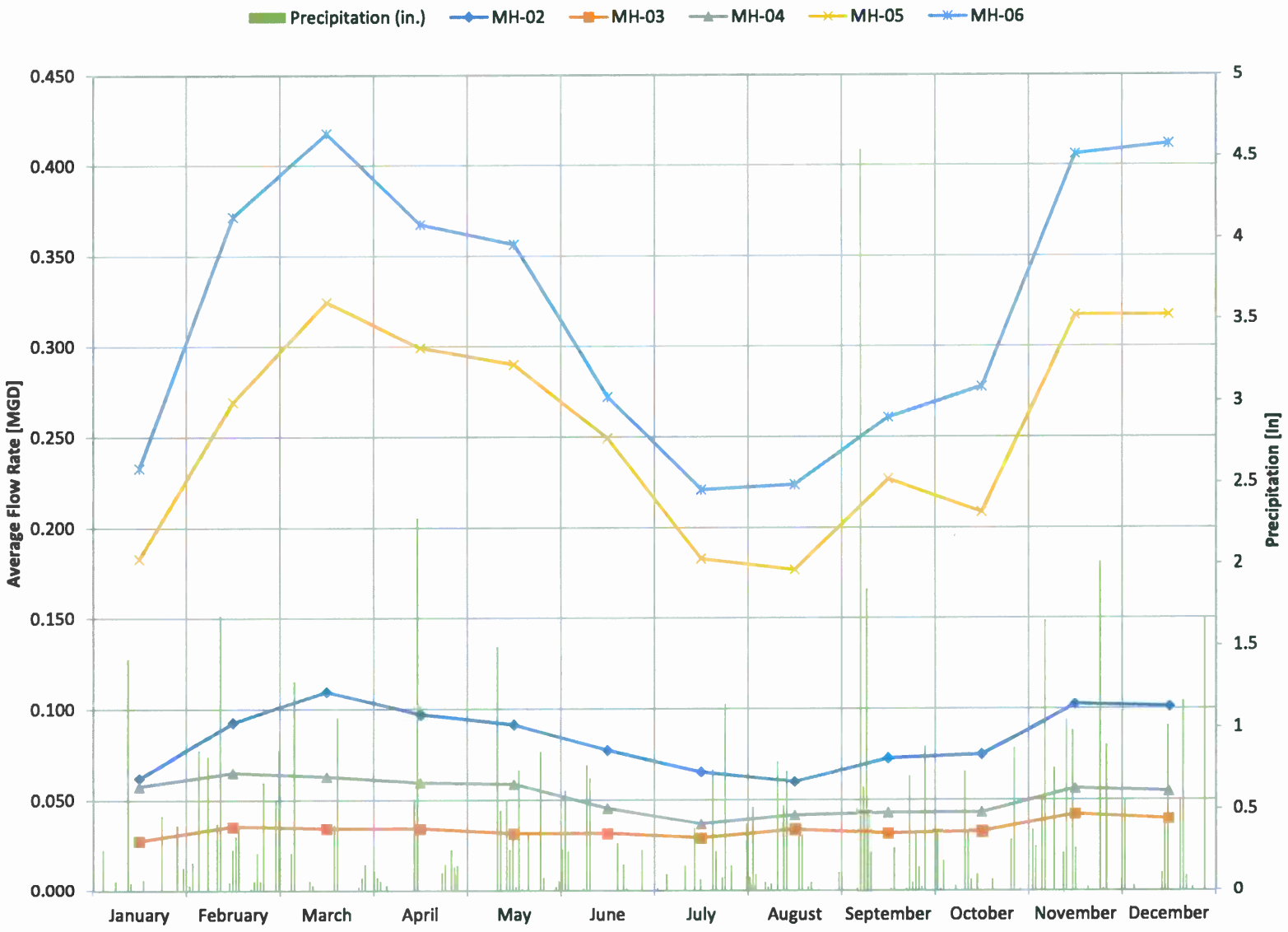
APPENDIX B

2018 Flow Data

BOROUGH OF SWARTHMORE
ANNUAL FLOWS 2018

Month	Meter Flows in MGD					Monthly Total [MGD]	Monthly Rain Total [In]
	MH-02	MH-03	MH-04	MH-05	MH-06		
January	0.062	0.028	0.057	0.183	0.233	0.562	2.85
February	0.093	0.035	0.065	0.269	0.372	0.834	6.02
March	0.110	0.034	0.063	0.324	0.418	0.949	4.74
April	0.097	0.034	0.059	0.299	0.367	0.857	3.94
May	0.091	0.031	0.059	0.290	0.356	0.828	5.21
June	0.077	0.032	0.045	0.249	0.272	0.675	3.34
July	0.065	0.029	0.037	0.183	0.221	0.535	3.06
August	0.060	0.034	0.042	0.177	0.224	0.535	4.11
September	0.073	0.031	0.043	0.227	0.261	0.634	9.76
October	0.075	0.032	0.043	0.208	0.278	0.636	3.08
November	0.102	0.042	0.056	0.317	0.406	0.923	9.03
December	0.101	0.039	0.054	0.317	0.412	0.924	5.71
Annual Average	**0.084**	**0.034**	**0.052**	**0.254**	**0.318**	**0.741**	**60.85**

BOROUGH OF \RTHMORE
ANNUAL FLOWS 2018



Upper Providence Township

Upper Providence Township

KELLY&CLOSE
CONSULTING ENGINEERS & SURVEYORS

Charles J. Catania Jr., P.E.
Central Delaware County Authority
c/o Catania Engineering Associates, Inc.
520 W. MacDade Boulevard
Milmont Park, PA 19033

File: UPTSA 107-19

February 18, 2019

RE: 2018 Chapter 94 Report
UPTSA Farnum Road District

Dear Mr. Catania:

Pursuant to your request, enclosed are eight (8) copies of the Upper Providence Township Chapter 94 Report for the year 2018. The Report is formatted to answer your questions as presented in your letter.

If you have any questions or need additional information, please feel free to contact me.

Sincerely,

James P. Kelly P.E.
Authority Engineer

Enc.

cc: Pat Hall, UPTSA
File

Kelly & Close Engineers

1786 Wilmington Pike

Glen Mills, Pennsylvania 19342

610.358.9363 fax 610.358.9376

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Upper Providence Township Sewer Authority**	Permit No.:	**PA**
Mailing Address:	**935 North Providence Road**	Effective Date:	**n/a**
City, State, Zip:	**Media, Pa 19063**	Expiration Date:	**n/a**
Contact Person:	**James P. Kelly, P.E.**	Renewal Due Date:	**n/a**
Title:	**Borough Engineer**	Municipality:	**Upper Providence Township**
Phone:	**610-358-9363**	County:	**Delaware County**
Email:	**jpkelly@kellyengineers.com**	Consultant Name:	**Kelly & Close Engineers**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:

   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:

   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

n/a

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☐ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

The Farnum Road sewer district is essentially built out with all properties connected to public sewers. No sewer extensions were conducted within the last year. From year 2009 to the current date, the Sewer Authority awarded bids for the construction of the Low Pressure Sanitary Sewer Mains for Sewer Districts 1 through 9. All phases have been constructed. See attached map in Appendix A.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

During the 2010 calendar year, a ProMag 53 Flowmeter was installed at the intersection of Farnum Road and Crum Creek Road. This flowmeter monitors all flows generated entering the Farnum Road CDCA district. During the 2012 calendar year, a ProMag 53 Flowmeter was installed at the intersection of Dog Kennel and Paxon Hollow Road. This flowmeter monitors all flows generated entering from the "Phases 5, 6, 7 and 8" CDCA districts.

During the 2012 calendar year, a ProMag 53 Flowmeter was installed at the intersection of State Road and Crum Creek Road. This flowmeter monitors all flows generated entering from the "Phase 9" CDCA district. In an effort to maintain the system and diagnose sewer conditions, the Sewer Authority has implemented a 4 year program of television inspection and cleaning. In addition, the branches of the sanitary sewers located on Dyanna Lane, Dogwood Road and several private driveways and all future public sewers (Sewer Districts 5 through 9) are low-pressure systems that are free from the effects of Inflow and Infiltration.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

There is no apparent gravity main or low pressure sanitary sewer main which currently exceeds capacity and no known surcharges or SSO's occurred in this district. The Authority has taken measures to maintain the integrity of the system and reduce inflow and infiltration problems. As stated above, the Authority continues to implement the sewer cleaning program in order to maintain the integrity of the system. In addition, the Authority is planning to institute a service lateral inspection/rehabilitation program designed to eliminate potential sources of I&I such as failing laterals and illegal connections.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☒ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☐ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8)) N/A

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

CDCA

9. Existing or Projected Overload. N/A

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☐ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year. N/A

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**) N/A

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b)) N/A

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

R.T. Spielman, Operation Manageter UPTSA	R.T. Spielman Jr.
Name of Responsible Official	Signature
610-566-5376	2/11/19
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

James P. Kelly, P.E., Authority Engineer	J. P Kelly
Name of Preparer	Signature
610-358--9363	2/15/19
Telephone No.	Date

Chapter 94
Municipal Wasteload Management
Annual Report

2018 Chapter 94 Annual Report
Farnum Road District Into C.D.C.A

For
Upper Providence Township Sewer Authority
Delaware County
935 North Providence Road
Media, PA 19063
(610) 566-5376

Prepared by:

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
1786 Wilmington Pike
Glen Mills, PA 19342
(610) 358-9363

February 15, 2019

Prepared for:

Upper Providence Township Sewer Authority
935 North Providence Road
Media, PA 19063

James P. Kelly, P.E.
Kelly & Close Engineers

TABLE OF CONTENTS

ATTACHMENTS LIST

REPORT REQUIREMENTS

1. INTRODUCTION

This section should give a brief description of the sewer service area covered by the report. List all tributary municipalities that send sewage to the Wastewater Treatment Facility (WWTF), and list those portions of the service area that are owned/operated by other permittees.

Discuss the age of the WWTF and a general description of the wastewater treatment process. If available, a process diagram could be included in an appendix to the report.

BACKGROUND

The following Chapter 94-Municipal Wasteload Management 2018 Annual Report has been prepared for the Upper Providence Township Sewer Authority. The purpose of the report is to serve as an addendum to the Chapter 94 Report prepared for the Central Delaware County Authority (C.D.C.A.)/Delcora.

Upper Providence Township is currently serviced by three wastewater treatment plants. This report will focus solely on the C.D.C.A.

C.D.C.A. / Delcora – are located downstream of an interceptor in Crum Creek and the treatment plant is located on Highland Avenue in the City of Chester, on the banks of the Delaware River.

The collection system which conveys from Upper Providence Township into the C.D.C.A. system is comprised of an 8" PVC gravity main which follows Farnum Road and enters the Crum Creek Interceptor. Low pressure lines (2" SDR11 HDPE) from two tributary streets, Dyanna Lane and Dogwood Road, connect to that gravity line. In addition, two separate 8" PVC sanitary sewer mains on Crum Creek Road connect to C.D.C.A. through the Farnum Road line and the Nether Providence Township sanitary system.

There are no combined sewers in Upper Providence Township.

2. HYDRAULIC AND ORGANIC LOADINGS

Provide a line graph depicting the monthly average flows (in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph should include a line depicting the hydraulic design flow of the plant included in the Water Quality Management Part II Permit.

Provide a line graph depicting the monthly average organic loadings in pounds per day (lbs/day) BOD_5, for each month for the past 5 years and projecting the monthly average organic loading for the next 5 years. The graph should also include a line depicting the organic loading design (expressed in lbs/day) of the plant included in the Water Quality Management Part II Permit.

List the permitted capacities of your WWTF:

This section is non-applicable for Upper Providence Township. As stated above, the sewer flows from Upper Providence Township into either the Media WWTP, C.D.C.A WWTP or the Southwest Delco. Municipal Authority WWTP.

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

This section should provide a description of the basis for the hydraulic and organic loading 5-year projections, including the data and calculations that were used to determine them. Your projections should include the following elements:

N/A - No WWTP's are owned or operated by Upper Providence Township.

4. SEWER EXTENSIONS

This section should provide the following information:

a. A map showing all sewer extensions constructed within the past calendar year;
b. A map showing sewer extensions approved or exempted in the past year in accordance with the PA Sewage Facilities Act (35 P.S. §§ 750.1—750.20) and Chapter 71 (relating to administration of the sewage facilities program), but not yet constructed;
c. A map showing all known proposed projects which require public sewers but are in the preliminary planning stages.
d. A list summarizing each extension or project.

e. *If a sewer extension approval or proposed project includes schedules for completing the project over time, the list should describe the projects projected build-out over time.*

This section should clearly indicate whether or not each of the above requirements is applicable for the report's calendar year. For example, if no sewer extensions were constructed in the past calendar year, clearly indicate this in the report.

The Farnum Road sewer district is essentially built out with all properties connected to public sewers. No sewer extensions were conducted within the last year. From year 2009 to the current date, the Sewer Authority awarded bids for the construction of the Low Pressure Sanitary Sewer Mains for Sewer Districts 1 through 9. All phases of the project have been constructed. See attached map in Appendix A.

To date the following permits have been approved and pumps have been installed / inspected:

Phase 1:	**209 permits, 209 pumps**
Phase 2:	**184 permits, 184 pumps**
Phase 3:	**120 permits, 120 pumps**
Phase 4:	**79 permits, 77 pumps**
Phase 5:	**149 permits, 144 pumps**
Phase 6:	**158 permits, 158 pumps**
Phase 7:	**69 permits, 61 pumps**
Phase 8:	**126 permits, 125 pumps**
Phase 9:	**93 permits, 86 pumps**

As of January 10, 2018, approximately 1,187 permits have been approved and 1,164 pumps have been installed / inspected; connecting 98% of the customers to public sewer.

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

This section should include a detailed discussion of the permittee's program for sewer system:

a. *Monitoring;*
b. *Maintenance;*
c. *Repair;*
d. *Rehabilitation;*
e. *Routine and special activities;*
f. *Personnel and equipment used;*
g. *Sampling frequency;*

h. Quality assurance;
i. Data analyses;
j. Infiltration/inflow (I/I) monitoring;
k. Maintenance and control of combined sewer regulators during the past year, where applicable.

Provide a detailed description of actual work conducted during the calendar year for each of the items noted above, including the findings of those efforts and any proposed follow-up work and/or investigations for the subsequent year.

Where flow monitoring has been conducted, provide an analysis of the flow-meter data. Have portions of the system shown evidence of I/I? What work is currently being conducted or proposed, to address excess flows?

During the 2010 calendar year, a ProMag 53 Flowmeter was installed at the intersection of Farnum Road and Crum Creek Road. This flowmeter monitors all flows generated entering the Farnum Road CDCA district.

During the 2012 calendar year, a ProMag 53 Flowmeter was installed at the intersection of Dog Kennel and Paxon Hollow Road. This flowmeter monitors all flows generated entering from the "Phases 5, 6, 7 and 8" CDCA districts.

During the 2012 calendar year, a ProMag 53 Flowmeter was installed at the intersection of State Road and Crum Creek Road. This flowmeter monitors all flows generated entering from the "Phase 9" CDCA district.

In an effort to maintain the system and diagnose sewer conditions, the Sewer Authority has implemented a 4 year program of television inspection and cleaning. In addition, the branches of the sanitary sewers located on Dyanna Lane, Dogwood Road and several private driveways and all future public sewers (Sewer Districts 5 through 9) are low-pressure systems that are free from the effects of Inflow and Infiltration.

6. CONDITION OF THE SEWER SYSTEM

This section requires a discussion of the condition of the sewer system, including portions where conveyance capacity is exceeded or will be exceeded in the next 5 years. It should include a discussion of those portions of the system where rehabilitation or cleaning is needed or underway to maintain the integrity of the system and prevent or eliminate:

a. Bypassing;

b. Combined sewer overflows;
c. Sanitary sewer overflows;
d. Excessive infiltration;
e. Other system problems.

Include a discussion of available existing and future capacity. The discussion should include the following:

f. The age of the sewer system.
g. The type of material of which the system is made (i.e., brick, vitrified clay, PVC, Orangeburg, etc.).
h. An analysis that determines whether the existing sewer lines are sized properly for the connected population.
i. A discussion of any portions of the system that should be repaired, replaced or rehabilitated, including a timeframe by which any proposed actions are expected to be completed.

Discuss any portions of the sewer system in which surcharging occurs:

j. How often does the system surcharge in each location?
k. What size storm events create surcharging sewer lines?
l. What is the cause of the surcharging?
m. Sewer systems that surcharge during wet weather indicate a lack of hydraulic capacity and are considered to be in a projected hydraulic overload. For such conditions, permittees should submit a CAP and CMP with the annual report, as required by 25 Pa Code § 94.22.

Provide a list of all SSOs that occurred during the calendar year, including their cause and location (a copy of the Southeast Regional Office's SSO Report Form submitted by the permittee is acceptable). SSOs related to wet weather should be discussed:

n. Explain if there is a history of SSOs at each reported location. If a trend of SSOs at specific locations during rain events is documented, this indicates a lack of hydraulic capacity and is considered a hydraulic overload condition.
o. Why are SSOs occurring at each location? Has a hydraulic analysis been conducted, and if so, what were the results and recommendations for corrective action?
p. Provide an analysis of flow metering that has been conducted.
q. Sewer systems that experience SSOs are considered to be in an existing hydraulic overload. A CAP and CMP should be submitted with the annual report, as required by 25 Pa Code § 94.21.

The Department strongly recommends that existing capacity be documented with flow meter data. Whether flow meters are already in place, or are proposed to be used throughout the system to gather flow data on sub-basin approach – existing capacity should be documented

with data that describes actual flow conditions during dry-weather and wet weather conditions:

r. *Dry weather flows should be monitored to document baseline flows and for comparison purposes, to determine the extent of I/I within the collection and conveyance system.*

s. *Wet weather capacity should be determined by documenting the peak instantaneous (or peak hourly) flow rate as compared to the hydraulic carrying capacity of the sanitary sewer (i.e., Manning's equation).*

There is no apparent gravity main or low pressure sanitary sewer main which currently exceeds capacity and no known surcharges or SSO's occurred in this district. The Authority has taken measures to maintain the integrity of the system and reduce inflow and infiltration problems. As stated above, the Authority continues to implement the sewer cleaning program in order to maintain the integrity of the system.

In addition, the Authority is planning to institute a service lateral inspection/rehabilitation program designed to eliminate potential sources of I&I such as failing laterals and illegal connections.

7. SEWAGE PUMPING STATIONS

If applicable, this section should provide a discussion of the condition of sewage pump stations, including a comparison of the maximum pump rate with present maximum flows and the projected 2-year maximum flows for each station:

N/A-No regional pumping stations exist within the District.

8. INDUSTRIAL WASTES

If applicable, the report on industrial wastes (IW) should include:

a. *A copy of an ordinance or regulation governing IW.*

Upper Providence Township has no ordinance regarding Industrial flow.

b. *A discussion of the permittee's program for surveillance and monitoring of IW discharges to the sewer system during the past year.*

There are no known industrial wastes discharged into the Upper Providence Township sanitary system tributary to the CDCA WWTP.

c. *A discussion of specific problems in the sewer system or at the WWTF, known or suspected to be caused by IW discharges and a summary of steps being taken to alleviate or eliminate the problems.*

There are no known industrial wastes discharged into the Upper Providence Township sanitary system tributary to the CDCA WWTP.

d. *A list of any such industries known to be discharging wastes that create a problem and actions taken to prevent potential or recurring problems caused by the IW dischargers.*

Currently, there are no known Industrial wastes within the CDCA district system, therefore no measures have been taken to alleviate or eliminate industrial waste.

e. *Provide documentation regarding any actions taken against IW dischargers.*

N/A

9. CORRECTIVE ACTION PLAN

If an existing or projected overload condition has been identified at the WWTF or in a portion of the collection and conveyance system owned by any permittee within the WWTF's sewer service area, the respective permittee should provide a CAP and CMP in the Chapter 94 Report to address the overload condition as required under 25 Pa Code §§ 94.21 and 94.22. The attached CAP and CMP development guidelines should be referenced for preparation of these documents.

N/A

10. CALIBRATION REPORTS

As required by 25 Pa Code § 94.13, flow measuring, indicating, and recording equipment should be calibrated annually, and the calibration report should be included in the annual report submitted under § 94.12 (relating to annual report).

Any such equipment at the WWTF and/or within the collection and conveyance system should be calibrated (at a minimum) at this frequency. Calibration reports for each permittee's system should be included in the respective annual reports.

Calibration reports are available via CDCA, who currently owns and operates the flow meters. Flow data will also available via a web based database, upon completion.

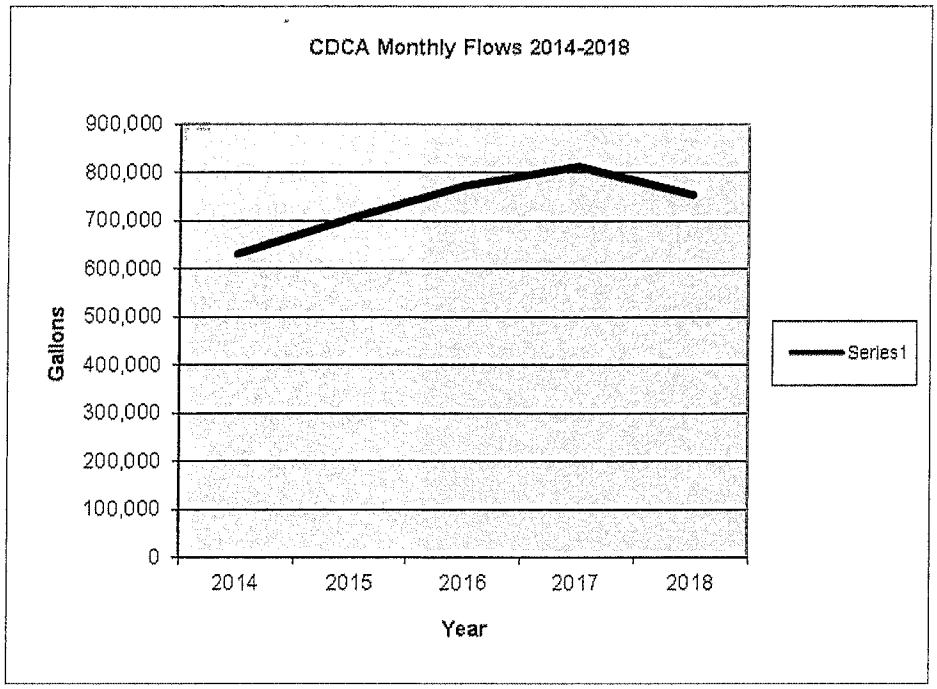
11. TRIBUTARY MUNICIPALITY REPORTS

Each tributary municipality (or authority) that is the permittee of its own collection and conveyance system, but which sends sewage flow to the WWTF submitting this report, must submit their respective information for inclusion in the WWTF's Chapter 94 Report. Each permittee's report should contain all of the information required in 25 Pa Code § 94.12 (Annual Report), excluding that information pertaining to a WWTF or industrial waste dischargers that would be inspected and/or regulated by the permittee of the WWTF. Include copies of any correspondence with tributary municipalities/authorities regarding acquisition of this information.

The reported number of CDCA users is 70 EDU's with an average GPD/EDU of 273.

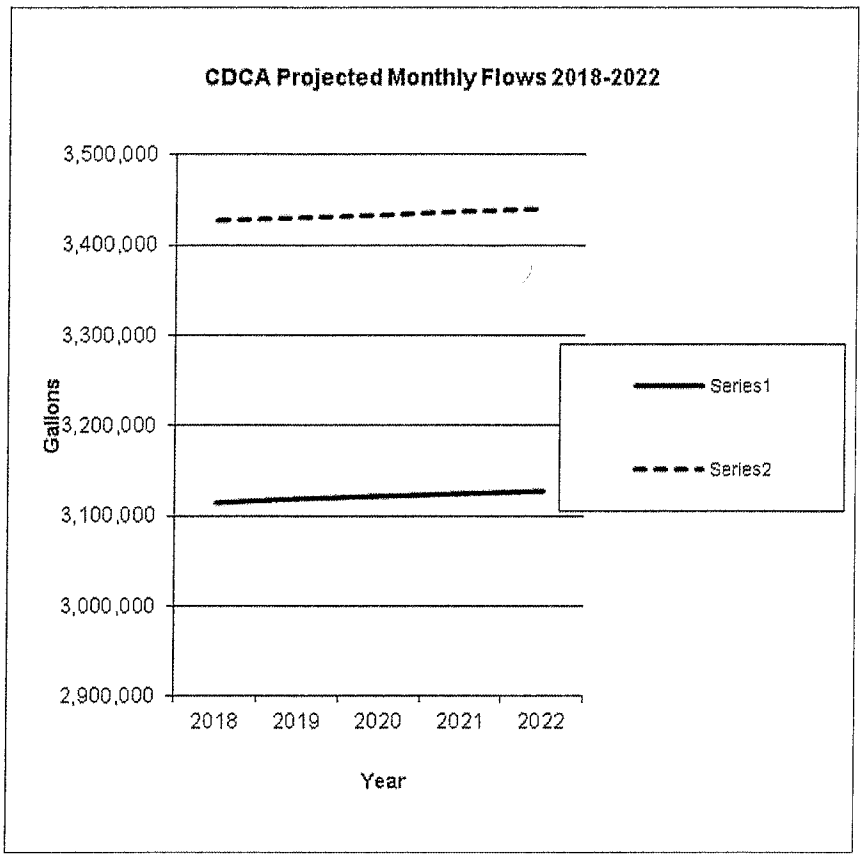
The average monthly flow into the CDCA system for 2018 was approximately 753,522 gallons with an estimated maximum monthly flow of 879,578 gallons. The average monthly flow data from 2014-2018 is as follows:

Year	Average Monthly Flow (GAL)
2014	630,465
2015	707,095
2016	771,786
2017	812,917
2018	753,522



Subsequent to the acceptance of Upper Providence Township as a member municipality of the CDCA, construction of several sewer extensions will significantly increase the number of connections to the system. Based on the current schedule, average monthly flows into the CDCA over the next five years are projected to increase as follows:

Year	Estimated Average Monthly Flow (GAL)	Estimated Max Monthly Flow (GAL)
2018	3,115,000	3,426,500
2019	3,118,000	3,429,800
2020	3,121,000	3,433,100
2021	3,124,000	3,436,400
2022	3,127,000	3,439,700


CDCA Projected Monthly Flows 2018-2022
3,500,000
3,400,000
3,300,000
3,200,000
3,100,000
3,000,000
2,900,000
Gallons
2018
2019
2020
2021
2022
Year
Series1
Series2

APPENDIX "A"

2018 CHAPTER 94 SEWER MAP

The current connections which flow into the CDCA sewers are listed below:

Farnum Road - 40
Dogwood Road - 8
Dyanna Lane - 6
Crum Creek Rd - 4 (Through CDCA MH at 297 Crum Creek Rd)
Crum Creek Rd - 6 (Through Nether Providence Twp. MH in Crum Creek Rd)
Dog Kennel Road - 4

Total current CDCA Users – 68

SANITARY SEWER MAP

FARNUM ROAD SANITARY SYSTEM
C.D.C.A. 2018

UPPER PROVIDENCE TOWNSHIP
DELAWARE COUNTY, PENNSYLVANIA

K&C KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1786 Wilmington Pike/Suite 300
Glen Mills, Pennsylvania 19342
610.358.9363 fax 610.358.9376

date: 2-15-19
scale: 1" = 120'
drawn by: HMO
checked by: JPK
dwg. name: CH 94 FARNUM.dwg
project no.: UPTNA 107

SHEET 1 of 1

* ALSO A FLOWMETER PRO-MAG 53 AT THE INTERSECTION OF FARNUM RD AND CRUM CREEK RD

Phase 1: 209 permits, 209 pumps
Phase 2: 184 permits, 184 pumps
Phase 3: 120 permits, 120 pumps
Phase 4: 79 permits, 77 pumps
Phase 5: 149 permits, 144 pumps
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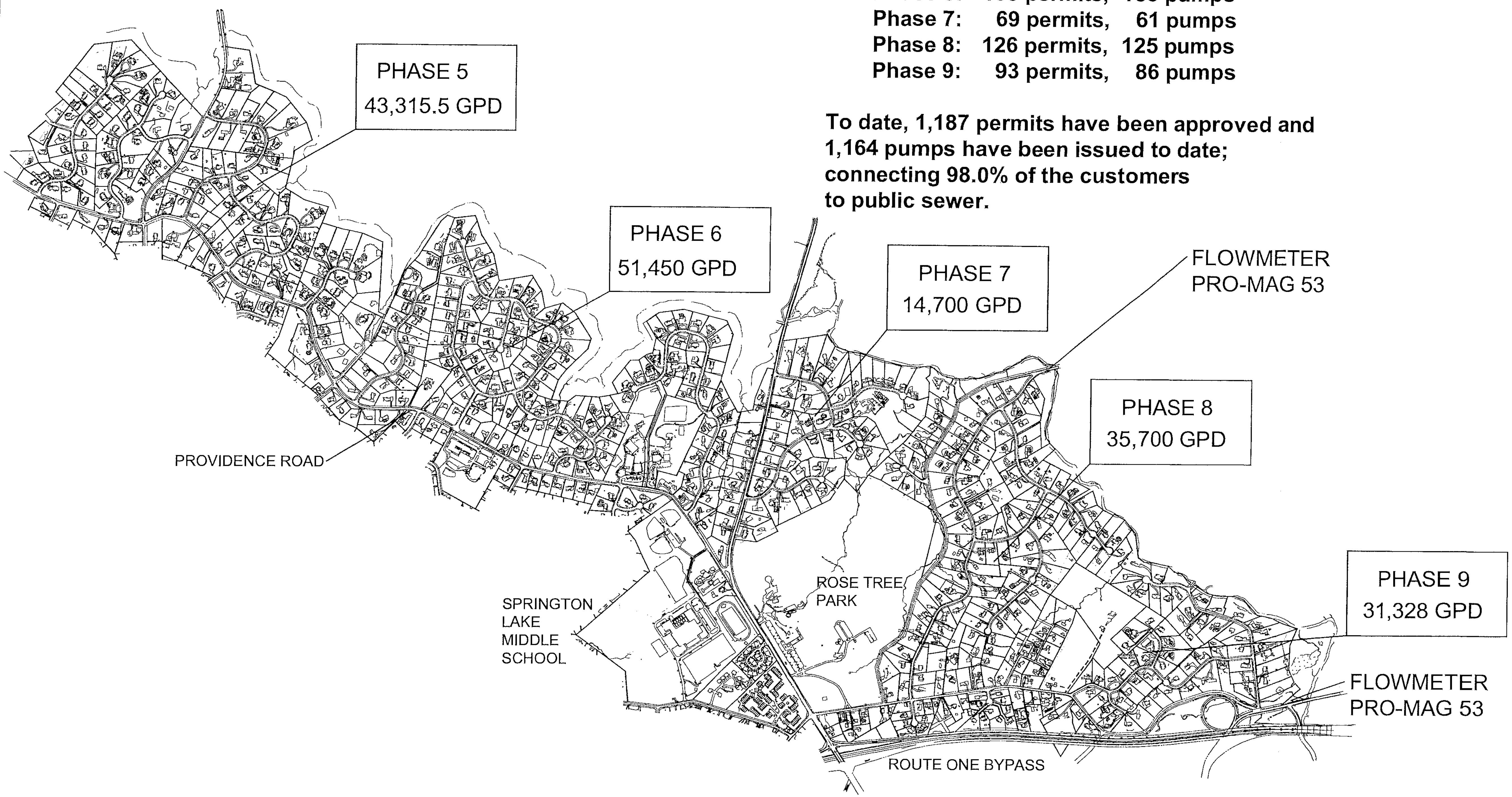
To date, 1,187 permits have been approved and 1,164 pumps have been issued to date; connecting 98.0% of the customers to public sewer.



UPPER PROVIDENCE TOWNSHIP
CHAPTER 94 REPORT CDCA

UPPER PROVIDENCE TOWNSHIP
DELAWARE COUNTY, PENNSYLVANIA

2017 UPPER CRUM CDCA CHAPTER 94

SHEET
1
of 1

Eddystone Borough

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Eddystone Borough**	Permit No.:	**PA N/A**
Mailing Address:	**1300 E. 12th Street**	Effective Date:	**N/A**
City, State, Zip:	**Eddystone, PA 19022**	Expiration Date:	**N/A**
Contact Person:	**Karen Reeves**	Renewal Due Date:	**N/A**
Title:	**Council President**	Municipality:	**Eddystone Borough**
Phone:	**610-874-1100**	County:	**Delaware**
Email:	**kmreeves12@gmail.com**	Consultant Name:	**Catania Engineering Associates, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

N/A

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☐ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

No sewer extensions were constructed or approved within the past calendar year. A copy of the sanitary sewer system map is attached.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Borough forces are used for inspection and troubleshooting of the sanitary sewer system. Contract forces are used for routine maintenance.

Outside Contractor personnel and equipment are utilized for sewer system operation and maintenance on an "as-needed" basis.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☒ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☐ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Karen Reeves
Name of Responsible Official

Signature

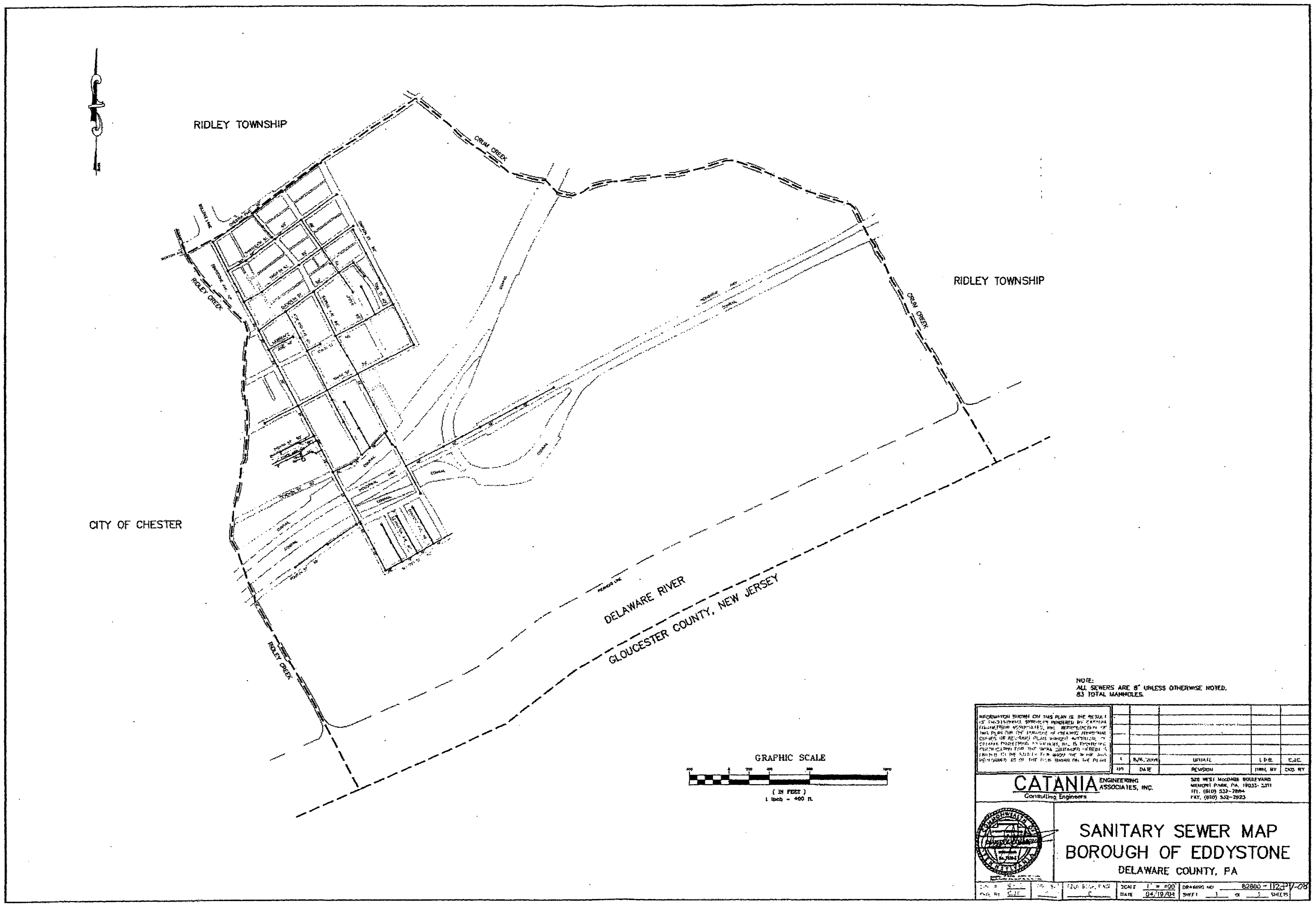
610-874-1100
Telephone No.

2/26/19
Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Elizabeth A. Catania	Elizabeth A Catania
Name of Preparer	Signature
610-532-2884	2/22/19
Telephone No.	Date


RIDLEY TOWNSHIP
CRUM CREEK
RIDLEY TOWNSHIP
CRUM CREEK
RIDLEY CREEK
CITY OF CHESTER
DELAWARE RIVER
GLOUCESTER COUNTY, NEW JERSEY
RIDLEY CREEK
GRAPHIC SCALE
(IN FEET)
1 inch = 400 ft.
NOTE:
ALL SEWERS ARE 8" UNLESS OTHERWISE NOTED.
83 TOTAL MANHOLES.
DATE
REVISION
CATANIA ENGINEERING ASSOCIATES, INC.
Consulting Engineers
SANITARY SEWER MAP
BOROUGH OF EDDYSTONE
DELAWARE COUNTY, PA
SCALE 1" = 400'
DATE 04/19/04
DRAWING NO
SHEET 1 OF

Eddystone Borough Pump Station Flow

January 1, 2018 to December 31, 2018

Hourly Average and Hourly Peak Flows:

- 9-9-2018 18:59:00 – Average Flow: 1.888 MGD Max: 1.916 MGD
- 9-10-2018 2:41:00 – Average Flow: 1.888 MGD Max: 1.897 MGD
- It rained all day on 9-9-2018 with Hourly peak precipitation of .21 inches at 16:00 hours and daily precipitation of 1.84 inches
- 9-9-2018 also had the highest Daily flow from 1-1-2018 to date at 1.888 MGD

Lower Chichester Township

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Lower Chichester Township**	Permit No.:	**PA N/A**
Mailing Address:	**1410 Market Street**	Effective Date:	**N/A**
City, State, Zip:	**Linwood, PA 19061**	Expiration Date:	**N/A**
Contact Person:	**Joseph P. Possenti, Jr.**	Renewal Due Date:	**N/A**
Title:	**Borough Secretary**	Municipality:	**Lower Chichester Township**
Phone:	**610-485-2760**	County:	**Delaware**
Email:	**jppjr@comcast.net**	Consultant Name:	**Catania Engineering Associates, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   N/A

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

   Check the appropriate boxes:

   ☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

   ☐ List summarizing each extension or project attached (**Attachment**)

   ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

   Comments:

   No sewer extensions were constructed or approved within the past calendar year. A copy of the sanitary sewer system map is attached.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

   Township forces are used for inspection and troubleshooting of the sanitary sewer system.

   Maintenance is completed by outside contractors as needed. The Township is currently completing a system evaluation to determine system conditions.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☒ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

The Township has experienced SSO's throughout 2018 and are exploring options to remediate the issues.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **1**)

☐ Discussion of condition of each pump station attached (**Attachment**)

3. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

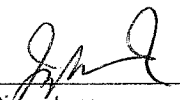
☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

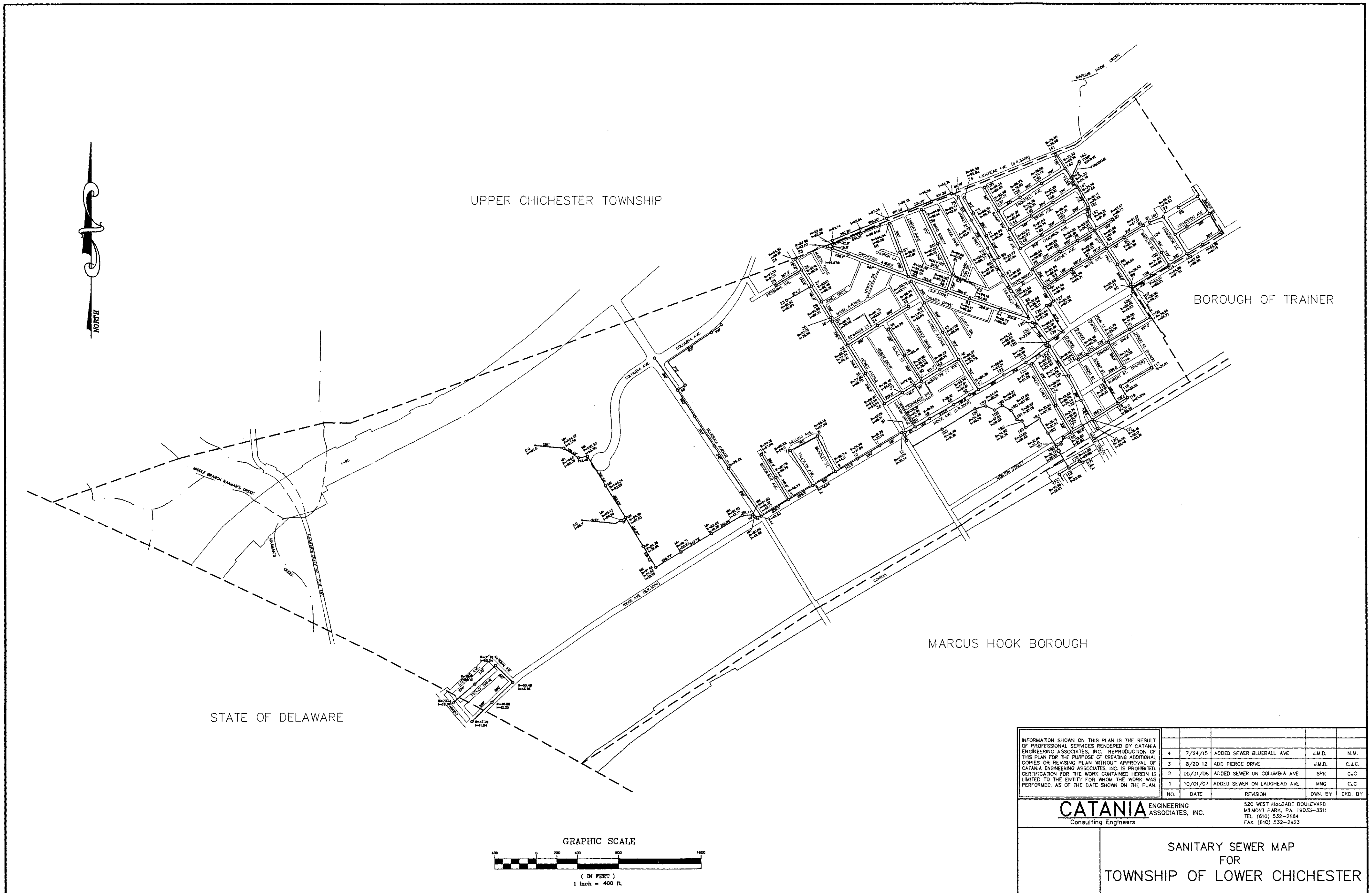
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Joseph Possenti, Jr.	
Name of Responsible Official	Signature
610-485-2760	2-22-19
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Elizabeth A. Catania	Elizabeth A Catania
Name of Preparer	Signature
610-532-2884	2/22/19
Telephone No.	Date



INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF PROFESSIONAL SERVICES RENDERED BY CATANIA ENGINEERING ASSOCIATES, INC. REPRODUCTION OF THIS PLAN FOR THE PURPOSE OF CREATING ADDITIONAL COPIES OR REVISING PLAN WITHOUT APPROVAL OF CATANIA ENGINEERING ASSOCIATES, INC. IS PROHIBITED. CERTIFICATION FOR THE WORK CONTAINED HEREIN IS LIMITED TO THE ENTITY FOR WHOM THE WORK WAS PERFORMED, AS OF THE DATE SHOWN ON THE PLAN.

NO.	DATE	REVISION	DWN. BY	CKD. BY
4	7/24/15	ADDED SEWER BLUEBALL AVE	J.M.D.	N.M.
3	8/20 12	ADD PIERCE DRIVE	J.M.D.	C.J.C.
2	05/31/08	ADDED SEWER ON COLUMBIA AVE.	SRK	CJC
1	10/01/07	ADDED SEWER ON LAUGHEAD AVE.	MNG	CJC

CATANIA Consulting Engineers ENGINEERING ASSOCIATES, INC.

520 WEST MacDADE BOULEVARD
MILMONT PARK, PA. 19033-3311
TEL. (610) 532-2884
FAX. (610) 532-2923

SANITARY SEWER MAP FOR TOWNSHIP OF LOWER CHICHESTER

TOWNSHIP OF LOWER CHICHESTER — DELAWARE COUNTY, PA.

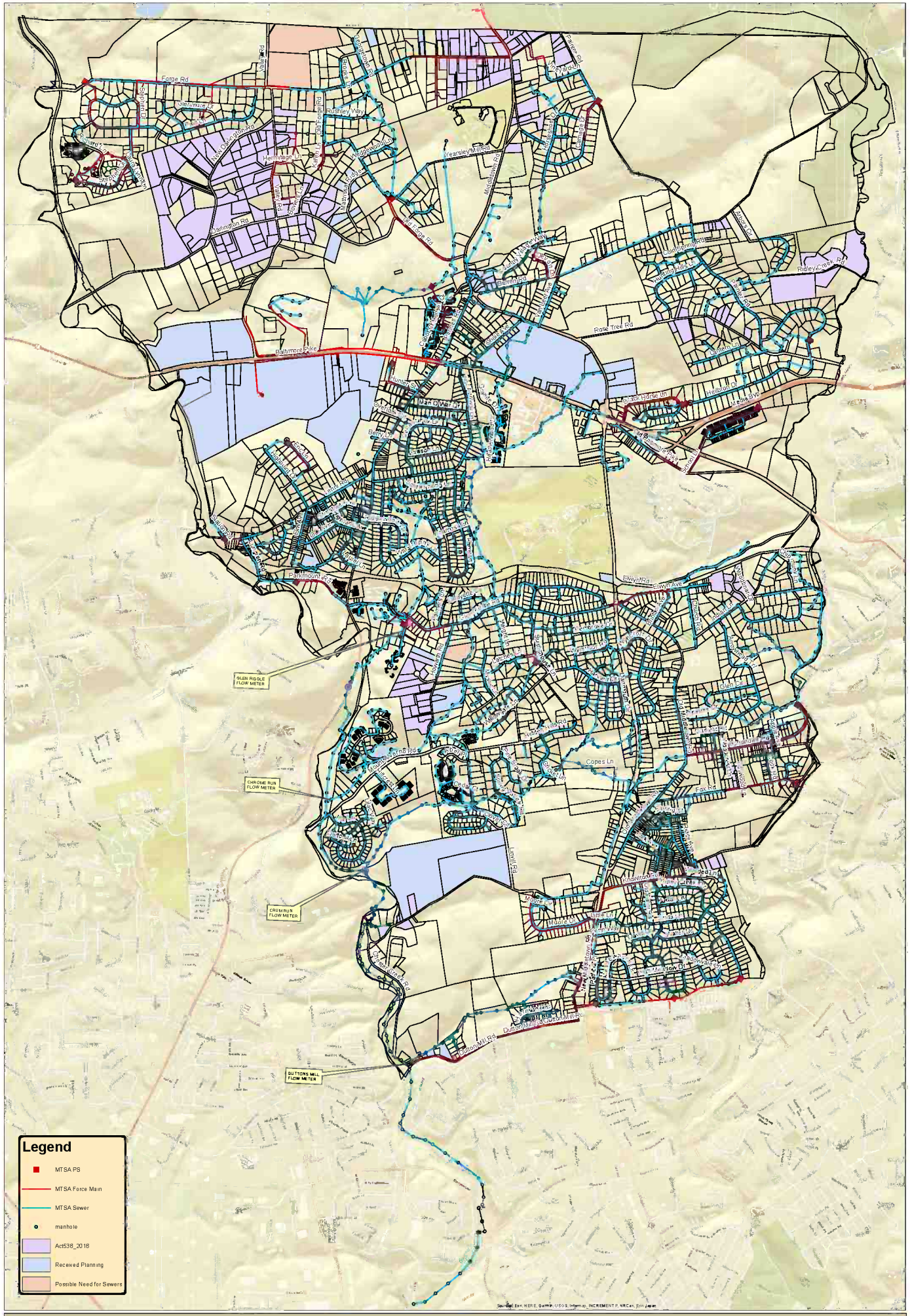
DWN. BY M.N.G. / CKD. BY C.J.C.	DSG. BY	FIELD BOOK/PAGE	SCALE 1" = 400' / DATE 2/19/04	DRAWING NO. 82425 / SHEET 1 OF 1 SHEETS

Industrial Waste Report

DELCORA is currently responsible for issuance of Industrial Waste Permits to companies discharging into Lower Chichester Township Sewers. The regulation governing discharge of the industrial wastes as well as any program for surveillance and monitoring of industrial waste discharges is maintained by DELCORA.

Below are the industrial users within the Lower Chichester Township system.

- Foamex, 1000 Columbia Avenue
- Esschem Company, 4000 Columbia Avenue
- FEDEX, 1500 Blueball Avenue
- Sun Company, Inc., Delaware & Green Streets



Middletown Township Sewer Authority
27 N. Pennell Road
Lima, PA 19063

2018 Chapter 94 Report
Sewer Location Map
February 2019

Bradford Engineering Associates, Inc.
2710 Concord Road, Suite 3
Aston, Pa 19014
(610) 497-6200

Middletown Township, Delaware County,

Sewer Authority

27 N. Pennell Road
Lima, PA 19037

TRIBUTARY MUNICIPALITY

"2018 Chapter 94 Report"

February 2019

Prepared By:

Bradford Engineering Associates, Inc.
Walter A. Fazler, P.E.
2710 Concord Road, Suite 3
Aston, Pa 19014
(610) 497-6200
(610) 500-5677 fax
wfazler@bea-inc.com

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION

Permittee Name:	**Middletown Township Sewer Authority**	Permit No.:	**PA**
Mailing Address:	**27 N. Pennell Road**	Effective Date:	
City, State, Zip:	**Media, PA 19063**	Expiration Date:	
Contact Person:	**John Ibach**	Renewal Due Date:	
Title:	**Manager**	Municipality:	**Middletown Township**
Phone:	**610.566.3087**	County:	**Delaware County**
Email:	**jibach@middletowntownship.org**	Consultant Name:	**Bradford Engineering**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:

   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:

   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

See report

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment A**)

☐ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

See attached report.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☒ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

See attached report

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **22**)

☒ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☐ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

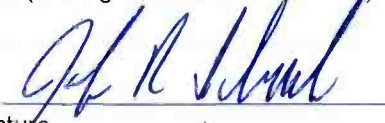
☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

John Ibach	
Name of Responsible Official	Signature
610.566.3087	2/21/19
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Walter Fazler, PE	Walter Fazler
Name of Preparer	Signature
610.497.6200	**2-18-19**
Telephone No.	Date

2. Introduction

The service area covered by this report includes all sections of Middletown Township that are currently served by public sewers connected to the DELCORA Chester Ridley Pump Station. Maps identifying the limits of the service area and other features are included in the Appendix. The initial phase of sewer installation in the Township was completed in 1968. Major expansions of the system have been completed in five phases since 1978. The Authority and subdivision developers completed many other minor extensions.

In the recent past, wastewater generated in Middletown Township was conveyed to the Southwest Delaware County Municipal Authority (SWDCMA) for treatment. As of November 11, 2014, the DELCORA Chester Ridley Pump Station was placed on-line and is now conveying flow from Middletown Township Sewer Authority (MTSA)and the SWDCMA service area to its Western Regional Treatment Plant.

On December 15, 2015 the Middletown Township's Chester Creek Interceptor (CCI) was put into service. The activation of this section of sewer essentially removed all MTSA sewage flows from the original CCI. The original MTSA CCI is now under a lease purchase agreement with SWDCMA. The only flow in the original CCI is from SWDCMA. SWDCMA is now solely responsible for monitoring flow in the original CCI and for determining its available capacity in accordance with Chapter 94 requirements. On March 27, 2018 the MTSA Chester Creek Interceptor Phase 2 (CCIP2) sewer was placed into service. The activation of this line completely removes all flows from the SWDCMA system.

MTSA flows are being monitored by DELCORA at the Chester Ridley pump station. These flows include all flows from Rose Valley and Upper Providence Township Sewer Authority. In late 2018, MTSA installed 5 open channel flow meters in the major Interceptor serving the Township; they are Chester Creek Interceptor, Glen Riddle Interceptor, Dutton Mill Interceptor, Crum Run Interceptor and Chrome Run Interceptor. Calibration of the meters was completed in early 2019.

MTSA has transferred ownership of the Bortondale Road Pump Station to the Upper

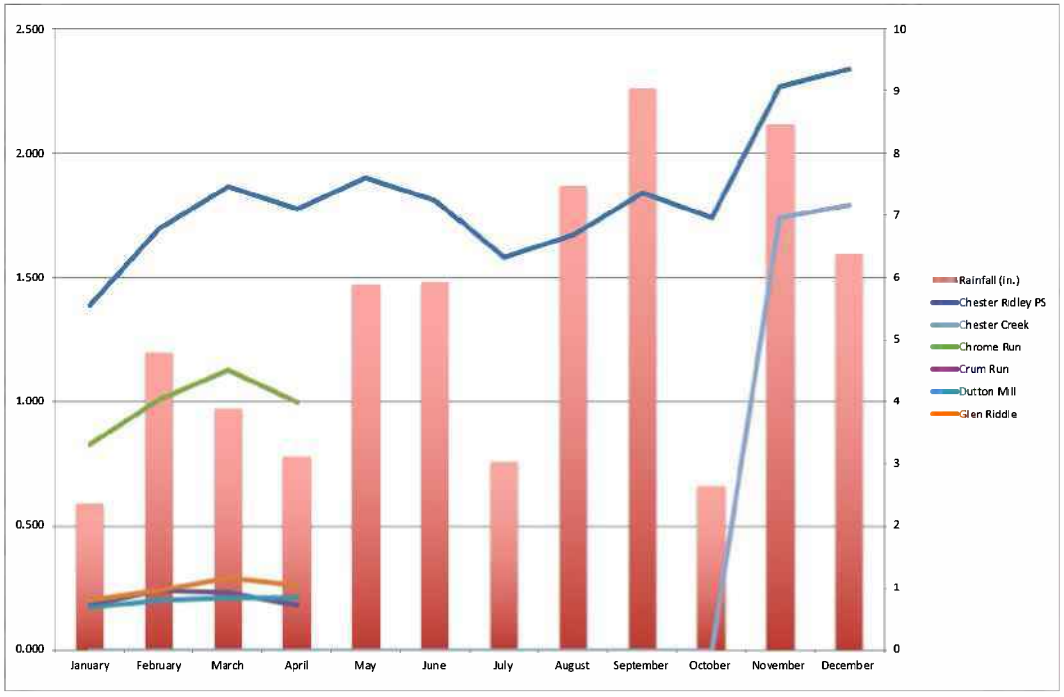
Providence Township Sewer Authority (UPTSA) for use in their SASSE project. Current flow for this connection was estimated using the number of UPTSA EDUs connected to the Bortondale Station and assuming 262.5 GPD/EDU.

3. Current Hydraulic Loading

The sum of the average daily flows from all connection points for the year 2018 is summarized in the following table. The flow data is taken from all available metering data.

TABLE 1

Interceptor Hydraulic Loading (MGD)								Rainfall
Interceptor	Glen Riddle	Chrome Run	Crum Run	Chester Creek	Dutton Mill	Total Flow	Chester Ridley PS	(in.)
January	0.2	0.83	0.18	ND	0.17	1.380	1.386	2.36
February	0.24	1.01	0.24	ND	0.2	1.690	1.697	4.78
March	0.29	1.13	0.23	ND	0.21	1.860	1.865	3.89
April	0.26	1.00	0.18	ND	0.21	1.650	1.773	3.11
May	ND	ND	ND	ND	ND	ND	1.899	5.89
June	ND	ND	ND	ND	ND	ND	1.810	5.92
July	ND	ND	ND	ND	ND	ND	1.579	3.03
August	ND	ND	ND	ND	ND	ND	1.671	7.47
September	ND	ND	ND	ND	ND	ND	1.839	9.05
October	ND	ND	ND	ND	ND	ND	1.738	2.63
November	ND	ND	ND	1.74	ND	ND	2.268	8.45
December	ND	ND	ND	1.79	ND	ND	2.335	6.39
Average	0.248	0.993	0.208	1.765	0.198	1.645	1.822	5.248



4. 5–Year Hydraulic Loading Projections

The following tables will outline the MTSA 5-year hydraulic loading projections. Table 2 shows the committed and approved EDUs that can or will be connected to the MTSA system in the near future.

TABLE 2

Projects that have received Planning Approval

Subdivision Name	Connection Point	Number of EDUs	Number of EDUs Connected	Estimated ADF Remaining (gpd) *
Franklin Mint	Chester Creek Interceptor	472		123,900.00
Ponds Edge	Chester Creek Interceptor	197	-	51,712.50
SEPTA	Chester Creek Interceptor	3.00	-	787.50
167 W Forge Rd	Chrome Run	3.00		787.50
176 S. New Middletown Road	Chrome Run	3.40	-	892.50
Alan Mancil	Chrome Run	4.00	4.00	-
Barren Crossing	Chrome Run	6.00	-	1,575.00
Cavaliere Orchards	Chrome Run	2.00	1.00	262.50
Chuckran; 238 Howarth	Chrome Run	1.00	-	262.50
Convery	Chrome Run	4.00	-	1,050.00
Darlington Pt. II	Chrome Run	8.00	-	2,100.00
Granite Run Mall	Chrome Run	384.00	35.00	91,612.50
Guss Subdivision	Chrome Run	3.00	-	787.50
Halcyon (Edgemont Township)	Chrome Run	21.00	21.00	-
Mar-J Builders	Chrome Run	20.00	15.00	1,312.50
Skycrest	Chrome Run	112.00	107.00	1,312.50
Wall Subdivision	Chrome Run	2.00	-	525.00
Wawa Dairy	Chrome Run	115.00	69.74	11,880.25
440 Mt Alverno Rd	Crum Run	2.00		525.00
Linville Orchards	Crum Run	6.00	4.00	525.00
386 Dutton Mill Road	Dutton Mill Road	4.00		1,050.00
272 Oak Ave	Glen Riddle	3.00	-	787.50
Misc	Various	20.00	15.00	1,312.50
MTSA Extensions	Various	121.00	21.00	26,250.00
				-
Total		1516.40	292.74	321,210.75

*Based on 262.5 gpd/EDU

Tables 3 and 4 were developed using the PaDEP example for calculating the five-year adjusted annual average flow. Flow projections are a best guess number and largely depend on regional economic conditions.

TABLE 3

Calculation of Adjusted Annual Average Flow

Year	AA Flow in MGD		All EDUs connected				Adjusted AA Flow
		2014	2015	2016	2017	2018	
2014	1.733		0.001	0.007	0.029	0.012	1.782
2015	1.394			0.007	0.029	0.012	1.442
2016	1.360				0.029	0.012	1.401
2017	1.496					0.012	1.508
2018	1.822						1.822
Total	7.805					Total	7.955
5 Year Average	1.561					5 Year Average	1.591

TABLE 4				
Adjusted Projections				
Year	Previous Year's Annual Average Flow$_1$	New EDUs	Increased Flow$_2$ (MGD)	Projected Annual Average Flow$_3$ (MGD)
2019	1.591	211	0.055	1.646
2020	1.646	298	0.078	1.725
2021	1.725	298	0.078	1.803
2022	1.803	298	0.078	1.881
2023	1.881	512	0.134	2.015
Notes				
1. The 2018 projection starts with the 5-year adjusted annual average as calculated in Table 3				
2. Increase Flow = New EDUs x MTSA gpd/EDU or 262.5 / 1,000,000.				
3. Projected Annual Average Flow = Previous Years Annual Average Flow + Increased Flow				
4. Final Year Projections include all contemplated projects from Table 2A				

5. Sewer Extensions

A Map showing all sewer extensions constructed in the past calendar year, approved extensions not yet constructed, and projects in preliminary planning but not yet with Permits are included in the Appendix. The Authority is planning to bid the Final Phase of the Chester Creek Interceptor project (Phase 3). Work on the Interceptor is expected to begin mid 2019.

Tables 2 and 2A summarizes all projects that require public sewers. Individuals or corporate entities sponsor the majority of these projects. Economic conditions in the region will dictate the build out rate of these projects. Based upon the hydraulic loading projection, the projects listed will not have a negative effect on the population served by the MTSA. Table 2A is used strictly for strategic long term planning. Table 2A does not constitute any approval by the Authority permitting discharge to any portion of the Authority's sewer system.

TABLE 2A				
Projects that may require public sewer				
Subdivision Name	Connection Point	Number of EDUs	Number of EDU's Connected	Estimated ADF Remaining (gpd) *
Sleighton School	Chester Creek Interceptor	386		101,325.00
252 W. Forge Rd	Chrome Run	2		525.00
Mancil 224 Howarth	Chrome Run	5		1,312.50
Total		393	-	103,163
*Based on 262.5 gpd/EDU				

6. Program for Sanitary Sewer Monitoring, Maintenance and Repair

The following is a discussion of the Authority's program for sanitary sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities.

a. Lateral Inspections

Over the past several years, the Authority has been working on a program to thoroughly inspect the Authority owned laterals and privately owned building sewers in the Township. On September 1, 2018 the Authority adopted an Ordinance which requires inspection of privately owned sewer laterals through the use of a closed circuit camera for all homes sold in the Township. This Ordinance requires "Certification" and televising of the building sewer at the time of sale of the property, it also grants the Authority the right to inspect all laterals in any area that has been identified as having excessive amounts of Infiltration & Inflow I&I. The new Ordinance also requires that a MTSA certified plumber conducts the closed circuit camera inspection. Additionally the MTSA I&I Coordinator conducts a smoke test of the lateral and visually inspects the inside of each home to ensure no sump pumps are connected into the lateral. It is the goal of the Authority to have all of the laterals within the Township inspected over a period of 10 years.

b. Collection System Operation

The Middletown Township Sewage Collection System is monitored continuously by a

team of dedicated and conscientious individuals with approximately 150 collective years of environmental protection experience. DEP records will demonstrate the proactive track record of this organization.

The Team includes:

KBX Golden, LLC's mechanics visit all sewage pump stations a minimum of 3 times per week and smaller pump stations at least weekly. All stations have telephone or radio dialers keeping mechanics apprised of any abnormal operating conditions. It should be noted that all KBX employees are licensed by DEP as Collection System Operators. KBX's Chief Mechanic, George Golden is a licensed STP Operator and has worked with MTSA since 1981.

Authority Engineers and Inspectors at Bradford Engineering Associates, Inc. monitor flow meters; system maintenance and repair procedures, I&I Programs, etc. Bradford Engineering specializes in sanitary sewer design and provides construction, operation and maintenance inspections.

Authority Manager is a full time employee and is on call 24 hours per day to respond to system problems.

I&I Program Coordinator is a full time employee responsible for coordination of projects such as lateral inspections, flow metering of the gravity sewers and pump stations, working with the engineer on closed circuit TV projects and repairs, as well as many other projects in Middletown Township.

Additionally, Pa. State, Aston, Media, Brookhaven and Upper Providence Police Departments; SWDCMA; PennDOT; Middletown Public Works Dept. and Building & Plumbing Dept.; Fire Marshal and Fire Companies; Pa. Fish & Boat Commission; Delaware Co. Conservation District; Chester-Ridley-Crum Creeks Assoc.; AQUA America; PECO; Verizon; Sunoco and Mobile Pipeline companies; corporate facilities supervisors; PaOne Call System; various civic associations, commercial and industrial facilities managers, hikers, equestrians and individual property owners are each considered valuable members of our surveillance team. Years of mutual cooperation with these various public and private entities has created a network of emergency responders with a proven record of quick reaction to potential or actual emergency

situations involving this Authority's system as well as neighboring sewer systems.

All but one of the 20 residential grinder pump installations owned by the Sewer Authority are duplex pumps and are maintained as needed. KBX and Site Specific Design, Inc. provide service on a 24-hour basis as needed. All property owners are provided written instructions for emergency service needs. The Authority has spare E-One pump cores for emergency backup to the 20 installations owned by the Authority as well as any other privately owned E-One installations within the Township. In 2015 the Authority upgraded all of the grinder pump's electrical components and installed updated control panels on all of the grinder pump stations.

c. Township and State Road Paving Programs

MTSA believes that a major source of inflow is under manhole frames.

Under the annual Township road paving programs and also under State paving programs, the Sewer Authority participates in raising and/or replacing existing manhole frames. This Authority does not permit the use of steel riser rings for adjusting the height of frames. We believe the rings allow too much inflow and defeat the purpose of the built-in lid gaskets that we have specified for several years.

The Authority pays Penn DOT and the Township's contractors to raise the frames with precast concrete rings or recycled rubber rings with sealant. On all state highway-paving projects, new frames and gasketed covers are installed. Current cost per manhole is approximately $500 for adjustment. Replacement frames and covers average about $300 each.

d. House Sewer Inspection Reports

When Land Title Companies request sewer account certifications from the Sewer Authority, the newly passed Ordinance requires televising of the lateral. Additionally, an inspection of the inside of the home is completed by the MTSA I&I Coordinator. The inspection insures that no sump pumps or condensate lines are connected to the sanitary sewer drains; downspouts are not connected; and that all clean-out caps and vent pipes located in the lawn areas are accessible and in watertight condition. In 2018, 175 Sewer Drain inspections and 42 CCTV of laterals were completed. Approximately 42 illegal condensate lines and 10 sump pumps were found connected

to the sanitary sewer system. All connections were removed from the sewer system. Nine repairs to the house connections were completed as a result of the inspections.

Additionally, during the 2018 Calendar Year, while completing routine work/inspections throughout the Township and during home inspections, we observed 102 lateral traps and/or cleanouts that were missing caps or in a state of disrepair. The owners of the laterals were notified, and caps were installed on all cleanouts to help keep groundwater and unwanted debris from entering into the sanitary sewer system.

e. Pennsylvania One Call System

The State of Pennsylvania requires that public utilities mark the location of service lines to properties prior to any excavation on a property. Approximately 6,337 PaOne Call System notifications were received in 2018. Each time we visit a property to mark out the sanitary sewers, we locate and inspect the vent and any clean-out caps in the lawns. If caps are found broken, missing, or not water tight, we notify the property owners of the condition and require a repair under the Township's Plumbing Codes.

We also advise property owners of "do-it-yourself" repair methods or provide a list of plumbers. The Authority makes new cast iron vent caps, Fernco Connectors, and pieces of PVC pipe, available to homeowners who wish to make minor repairs to cleanouts. We also conduct annual inspections of various townhouse developments, which have privately owned 6" diameter common sewer lines.

f. Public Awareness Efforts

The Township has established an Internet Web Page (www.middletowntownship.org) and the Sewer Authority is included. Past and current projects are described. Articles about the Authority's I&I Programs are typically included in the Township's quarterly newsletters as well as community association newsletters. Project Notices are also published on the Township Cable Channel supplied by Comcast.

g. Closed Circuit Television Work

KBX was directed by the Authority to televise various small sections of the Authority's system in calendar year 2018. Minor root intrusions and repairs were made to the system as part of the inspection work.

h. GIS System and Mapping

In order to accurately record problem areas, MTSA implemented a Geographical Information System (GIS) program specifically oriented towards mapping the entire sewer system throughout the Township. As it relates to I&I, the mapping program gives MTSA the ability to graphically show all areas that have been inspected and aid in planning future inspection efforts. Currently, the Authority and Middletown Township are working on a GIS system that can be implemented to cover all infrastructure and properties in the Township. This system is centrally located at the Township and includes MTSA I&I abatement activity.

The Authority's 5 year Capital Budget is being updated on a yearly basis. In this plan, the Authority is pledging significant funds to I&I abatement activity. The Authority plans on continuing to monitor the sanitary sewer system and evaluate the need to perform CCTV inspection.

7. Condition of the Sewer System

The following is a discussion of the condition of the sanitary sewer system starting with metered flows of the major interceptors.

The Authority is analyzing its options to remediate various stream bank erosion problems along Chrome Run. At this time, no interceptor manholes are known to become submerged during normal heavy rains. Some manhole sides have become exposed due to loss of soil over the years. It appears the best alternative will be to relocate the sewer lines based on lower construction and engineering costs along with minimal impact on the environment.

8. Sewage Pumping Stations

The following is a discussion of the Authority's 22 pump stations. (It should be noted that due to construction of the Chester Creek Interceptor Phase I project, the Authority owned Martins Lane pump station was removed during the 2016 calendar year.) The tables below are based on hour meter readings for each pump and the nameplate output

capacity listed for each pump. This method does not permit the determination of actual peak flows received by the stations. The tables indicate an estimated peak flow based on a 2.5 peaking factor. The tables also list the available peaking factor showing the ratio of pump capacity to average daily flow with one pump.

In most cases the available peak flow factor exceeds 5.0, a level considered conservatively safe when reviewing station capacity. This level of reserve is felt to be adequate for even the most severe wet weather conditions. It would be rare for a station to be designed for a peak rate over 4.0 using normally accepted engineering standards.

Six of the Authority's twenty-two stations have an available peak factor of less than 5.0. Five of these six stations are being considered for either a discharge flow meter or a wet well monitor to record actual inflow to the station. The wet well monitor is the preferred option and the equipment is already available. The operational status and data recording need to be set up and tested. The Darlington Valley Pump Station is not being considered for additional metering since little or no future growth is projected for this station and no problems have been encountered with wet weather conditions.

The tables also list the two year estimated growth for each station based on the subdivision lists from Table 2. The current state of the economy is likely to delay work on these projects for an indeterminate amount of time.

The Skycrest Pump Station has been included on the list below. This Station is currently owned by the Developer of the Subdivision although it is operated by the Authority. Upon final build-out of the Subdivision, the Pump Station will be dedicated to the Authority.

Pump Station	Total No. of Pumps at Station	Single Pump Capacity	Ave. Daily Flow	Peak Daily Flow	2 yr. Peak Flow	AVAIL. PEAK
HUNTER STREET	2	144,000	8,768	21,921	21920.6	16.4
SOUTH HEILBRON	2	432,000	106,586	266,464	266464.3	4.1
NORTH HEILBRON	2	144,000	64,012	160,030	160030.2	2.2
COUNTRY VILLAGE WAY	2	403,200	136,694	341,735	343047.1	2.9
ELWYN	2	144,000	24,103	60,258	60257.6	6.0
ERIC LANE	2	144,000	3,722	9,305	9305.1	38.7
FORGE ROAD	2	144,000	7,366	18,415	18415.1	19.5
FOX ROAD	2	144,000	3,633	9,082	9081.7	39.6
KNOWLTON CHARTER	2	144,000	8,677	21,692	21692.3	16.6
KNOWLTON ROAD	2	576,000	92,116	230,291	230291.2	6.3
LENNI ROAD	2	144,000	4,226	10,565	10565.4	34.1
MEADOWBROOK	2	252,000	28,640	71,599	71599.4	8.8
MEADOWHURST	2	180,000	11,660	29,150	29149.6	15.4
RIDLEY CREEK	2	115,200	7,940	19,849	19849.5	14.5
PAINTER ROAD	2	172,800	9,918	24,795	24794.5	17.4
PARKMOUNT	2	360,000	61,784	154,461	154460.9	5.8
PAUL LANE	2	144,000	29,663	74,158	74157.5	4.9
SPRINGHOUSE	2	115,200	6,719	16,797	16796.7	17.1
YEARSLEY MILL	2	432,000	75,423	188,557	192494.9	5.7
DARLINGTON VALLEY	2	180,000	20,543	51,356	51356.5	8.8
FAIR ACRES	2	972,000	269,403	673,507	673507.2	3.6
Rose Tree	2	144,000	5,923	14,809	16121.1	24.3

NOTES:

1. All flows expressed as gallons per day (gpd)
2. Pump capacity listed are for 1 pump running
3. Average daily flow based on hour readings at the pumps.
4. Peak daily flow based on average daily flow multiplied by 2.5
5. The 2 yr. peak flow is based on the table in section 4
6. The available peak = Pump Capacity / Average daily flow

With the advent of the Penn State Brandywine campus expansion project, the Authority was required to upgrade its Yearsley Mill Pump Station. The permit to upgrade the pump station was issued in 2017 and a contract was awarded for the installation of the station. Construction of the upgraded station was completed in August 2017 and the new station became operational. Additionally, as stated in the report, the Fair Acres Pump Station is required to be evaluated on a yearly basis to review the need for upgrades. MTSA will continue monitoring and evaluating the flows at the Fair Acres pump station.

9. Industrial Waste

Industrial Discharge - Middletown Township adopted the model Pre-treatment

Ordinance as recommended by the U.S. Environmental Protection Agency which is the same ordinance adopted by all of the municipalities serviced by DELCORA. Wawa, Inc. is the only industrial facility in Middletown and it pre-treats all of its wastewater before discharging into the Middletown system. Monitoring of the wastewater characteristics was done by SWDCMA in the past. Since MTSA is now discharging to DELCORA, the DELCORA standards have been adopted and all permitting and monitoring of industrial dischargers in Middletown is be done by DELCORA.

10. Sanitary Sewer Overflows (SSO)

The Authority reported 1 SSO event during 2018. The SSO occurred at a sewage pump station that was without power and phone lines. A copy of the SSO report is included as an appendix to this report.

11. Upgrades and Replacement

- The following repair work was performed by the Authority's Maintenance Contractor
    - Easements were cleared between Linville and Mt. Alverno Road and all of the manholes in this section of interceptor were inspected. Any sources of I & I were removed.
    - Miscellaneous manhole and sewer cleaning, grouting and root removal.
    - MTSA purchased 5 open channel flow meters and installed them in the major interceptors as described in the Introduction. These meters will aid in monitoring of I&I abatement activity and capacity analysis.

12. Connection Management Plan (CMP)

MTSA notified PADEP that construction Phase 2 of the Chester Creek Interceptor was completed on March 27, 2018. Upon completion of Phase 2, all sewage generated in Middletown Township is conveyed completely through MTSA's Chester Creek Interceptor.

On April 11, 2018, we received a letter from PADEP notifying MTSA that we are no longer required to comply with the regulations included in Chapter 94 concerning existing or projected overloads as they relate to the SWDCMA Chester Creek Interceptor. The letter further stated that MTSA is no longer required to provide quarterly status reports or updates to it's Connection Management Plan. A copy of the letter is included in the Appendix.

APPENDIX A

APPENDIX B

Sanitary Sewer Overflow (SSO) Report to PADEP- Water Management **DEP fax: 484-250-5971**

Please check the appropriate box ☑ Dry Weather Overflow ☐ Wet Weather Overflow

1. Date, Name, Phone # of person completing this report	Date: 3/5/18 Name: John Ibach-MTSA Manager Phone: 610-566-3087
2. Your organization name and address ?	Name: Middletown Township Sewer Authority County: Delaware Address: 27 N. Pennell Road Township/Municipality: Middletown Township
Sewer system owner and permit number	Middletown Township Sewer Authority
3. Date found and specific location of SSO. Including Municipality/County (if different from #2) ?	Date: 3/4/18 Municipality: Middletown Township Location(Street & #): Painter Road Pump Station: 499 Painter Road)
4. How was SSO discovered? By whom ?	While assessing damage due to snow and ice storm, the MTSA manger found the Painter Road ps overflowing. There was no power to the station. The power grid was knocked out from the recent storm. No high level alarm was sent to the pump station operator due to the fact that the telephone line was broken during the ice storm.
5. Start and end time of SSO (actual or estimate?)	Start Time: Unknown start time. The SSO was discovered at approximately 8:30 a.m. A pump truck that was already in the township was telephoned and arrived within 10 minutes. Pump and Haul of the station was initiated and will continue until power to the station is restored. The MTSA manager returned to the MTSA office and telephoned the PADEP hotline. An unknown quantity of clear water overflowed out to the pump station and across the ground surface. Some clear effluent did make its way into an adjacent stream that is a tributary to Ridley Creek. All solids were maintained within the confines of the pump station.
6. Date, time and name of person who called PADEP originally to notify of SSO ?	Date : 3/4/18 Time : approx. 9:10 a.m. Name : John Ibach telephoned PADEP hotline.
7. Description and actual or estimated volume of SSO	Unknown volume of sanitary sewage discharged to the ground surface. Some sewage ran across ground surface and drained into the ground and adjacent stream. Educated guess of 500 gallons of sewage overflowed from the pump station.
8. Where, precisely, did SSO go ? (land, roadway, basement, swale, storm sewer, creek, etc.) Please include creek name or street location.	Sewage discharged to surface of ground and adjacent stream.
9. What caused SSO ? How was it stopped ?	The SSO's were caused by a power outage from a recent storm. Pump and haul will be continued until power is restored.
10. Describe extent of contamination and how it was cleaned up	Any standing effluent was pumped into a vac truck. No solids were observed.
11. What actions will be taken to prevent a re-occurrence ? When ?	The electric supply and telephone lines will be repaired.
12. Other comments ?	
13.Downstream notifications made: (All downstream users such as public water supplies must be notified)	AQUA public water was notified.

APPENDIX C

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

April 11, 2018

Mr. Leonard Balestrieri, Chairman
Southwest Delaware County Municipal Authority
1 Gamble Lane
P.O. Box 2466
Aston, PA 19014

Mr. John Ibach, Manager
Middletown Township Sewer Authority
27 N. Pennell Road
P.O. Box 9
Lima, PA 19037

Re: Sewage
Southwest Delaware County Municipal Authority
Middletown Township Sewer Authority
Delaware County

Dear Messrs. Balestrieri and Ibach:

The Department of Environmental Protection ("DEP") received correspondence from the Southwest Delaware County Municipal Authority ("SWDCMA") and the Middletown Township Sewer Authority ("MTSA"), dated March 28, 2018, and March 27, 2018, respectively. The letters indicate that Phase 2 of the MTSA Chester Creek Interceptor ("CCI") became fully operational on March 27, 2018.

At this time, sewage generated within Middletown Township is conveyed completely through MTSA's CCI (Phases 1 and 2). Sewage generated within SWDCMA's service area is conveyed through SWDCMA's CCI, a portion of which is still owned by MTSA and which will be sold to SWDCMA. Additional information about this portion of the interceptor is included below.

SWDCMA and MTSA are no longer required to comply with the regulations included in Chapter 94 concerning existing or projected overloads as they relate to the CCI project only. Neither SWDCMA nor MTSA is required to provide quarterly status reports or updates to their respective Connection Management Plans for the CCI project.

We offer the following to assist you with future sewage facilities planning submissions, Chapter 94 Reports, and connection/allocation tracking:

- Requests for exemptions from sewage facilities planning may be submitted for new land development projects that are tributary to the SWDCMA CCI or the MTSA CCI provided the project meets all of the requirements included in Chapter 71,] Section 71.51.

Please note that SWDCMA and/or MTSA will be required to provide *written certification to the municipality* in which the project is located. The written certification must confirm that there is capacity to receive and treat the sewage flows from the proposed new land development project and that the additional wasteload from the proposed project will not create a hydraulic or organic overload or 5-year projected overload.

In lieu of providing this confirmation in letter format, you may elect to use the attached Public Sewer System Available Capacity Determination form.

- Section 8d of the Sewage Facilities Planning Module Application Mailer must be completed *by the manager or secretary of the municipality* in which the project is located. Section 8d may not be completed by SWDCMA or MTSA.

- Please be advised that only projects that meet the requirements of Section 71.51 are eligible for exemptions from planning. Sewage facilities planning modules will be required for any project that does not meet the requirements of Section 71.51. Alternately, the project applicant or the municipality may request that DEP determine that sewage facilities planning is not required. Note that only DEP may determine that sewage facilities planning is not required.

- We note that projects within portions of the SWDCMA service area may be tributary to a portion of the SWDCMA CCI which is still owned by MTSA. It is our understanding that this section of the interceptor will be sold to SWDCMA in the future. Until the sale is complete, MTSA must certify capacity as explained above for any projects tributary to this section of the interceptor.

  For all projects within the SWDCMA service area, we ask that SWDCMA document whether the project will convey flows through MTSA's section of the interceptor. We also request that you inform our office when the sale is complete.

- We recommend that SWDCMA and MTSA track all allocations of capacity and connections to their systems. By implementing a tracking system to accurately record the allocations and connections, SWDCMA and MTSA will be better able to monitor remaining capacity in the treatment facility.

If you have any questions, please contact me at 484.250.5182.

Sincerely,

Kelly A. Sweeney
Sewage Planning Specialist 2
Clean Water

Enclosures: Public Sewer System Available Capacity Determination form

cc: Mr. Burke (via e-mail)
Ms. Rittenhouse (via e-mail)
Mr. Gade (via e-mail)
Mr. Fazler (via e-mail)
Re 30 (GJE18CLW)100-5

Nether Providence Township

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Nether Providence Township**	Permit No.:	**PAN/A**
Mailing Address:	**214 Sykes Lane**	Effective Date:	**N/A**
City, State, Zip:	**Wallingford, PA 19086**	Expiration Date:	**N/A**
Contact Person:	**Gary Cummings**	Renewal Due Date:	**N/A**
Title:	**Township Manager**	Municipality:	**Nether Providence**
Phone:	**610-566-4516**	County:	**Delaware**
Email:	**gcummings@netherprovidence.org**	Consultant Name:	**Catania Engineering Associates, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

N/A

There are approximately 77 EDU's that are unmetered, therefore no flow information is available.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- ☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)
- ☐ List summarizing each extension or project attached (**Attachment**)
- ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

No sewer extensions were constructed or approved within the past calendar year. A copy of the sanitary sewer system map is attached.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Nether Providence Township public works department has a sewer maintenance schedule for cleaning and inspecting lines. During these cleanings the crew is looking for blockages, broken pipes, roots in lines and I&I issues.

Nether Providence, in coordination with DELCORA has flow metering equipment to monitor flows through the sanitary system. CSL Services, Inc. was contracted by DELCORA to calibrate and maintain the flow monitoring equipment throughout 2018. Calibration reports are maintained by DELCORA. Flow data is utilized to assist in the identification of areas that require attention.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

The general condition of the sewer system is good. No SSOs were reported for the 2018 calendar year.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☐ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

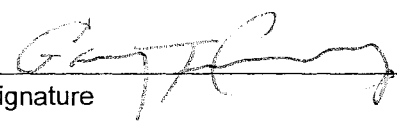
☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

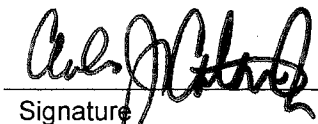
RESPONSIBLE OFFICIAL CERTIFICATION

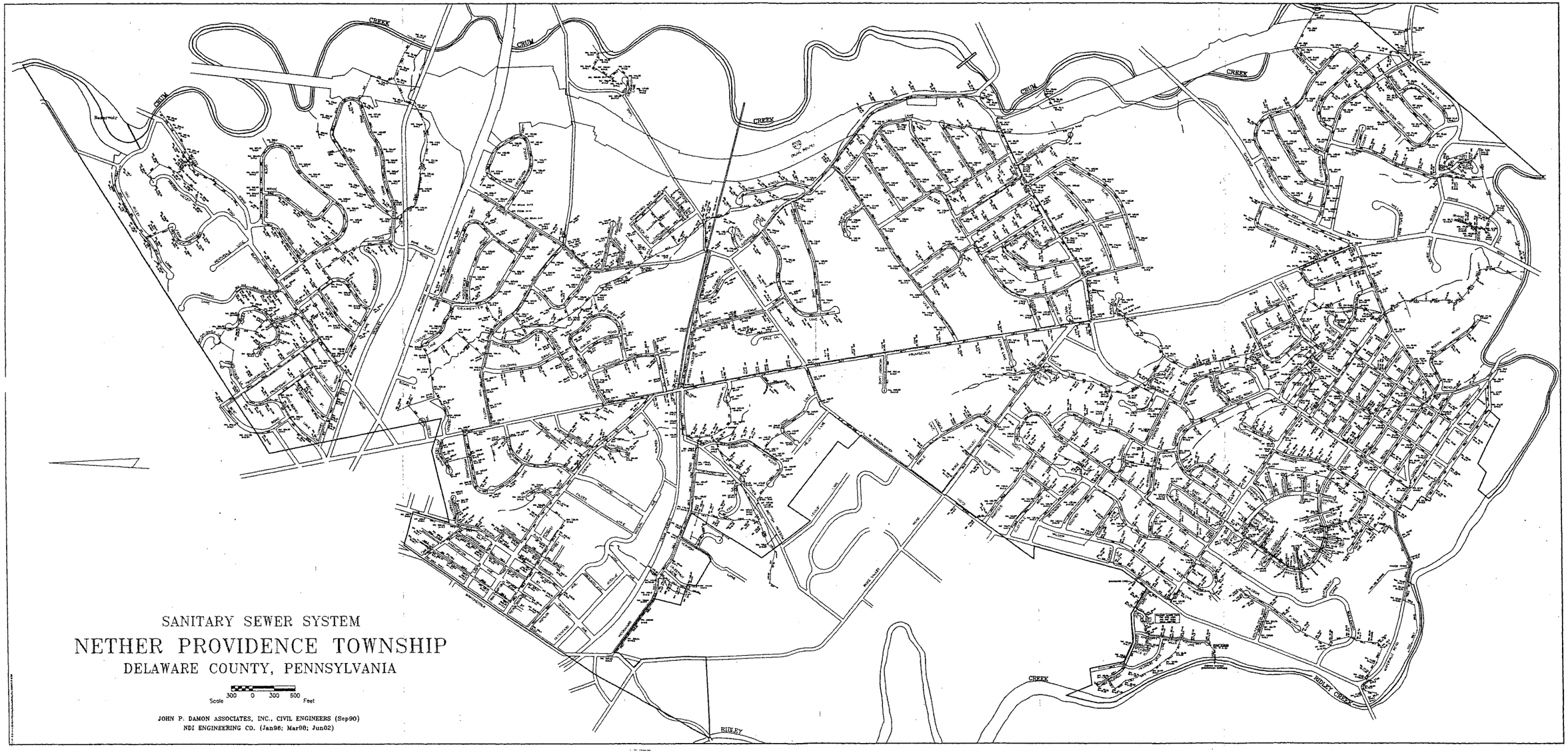
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unswom falsification).

Gary Cummings	
Name of Responsible Official	Signature
610-566-4516	FEBRUARY 22, 2019
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Charles Catania Jr.	
Name of Preparer	Signature
610-532-2884	2/21/19
Telephone No.	Date



SANITARY SEWER SYSTEM

NETHER PROVIDENCE TOWNSHIP

DELAWARE COUNTY, PENNSYLVANIA

Scale 300 0 300 500 Feet

JOHN P. DAMON ASSOCIATES, INC., CIVIL ENGINEERS (Sep90)
NDI ENGINEERING CO. (Jan96; Mar98; Jun02)

Southern Delaware County Authority

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Southern Delaware County Authority**	Permit No.:	**PA N/A**
Mailing Address:	**101 Beech Street**	Effective Date:	**N/A**
City, State, Zip:	**Boothwyn, PA 19061**	Expiration Date:	**N/A**
Contact Person:	**Michael J. Chermak, Jr.**	Renewal Due Date:	**N/A**
Title:	**President**	Municipality:	**N/A**
Phone:	**610-485-6789**	County:	**Delaware**
Email:		Consultant Name:	**Catania Engineering Associates, Inc.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Please note that the Chapter 94 Spreadsheet was used to show monthly average flows and projections; it is understood that this report is for a collection system only.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- ☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)
- ☐ List summarizing each extension or project attached (**Attachment**)
- ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

A copy of the sanitary sewer system map is attached.

Proposed sewer extensions receive prior approval of DELCORA. A list of the proposed projects is attached and included in the projections.

SDCA currently has an agreement with Bethel Township that defines their responsibility in upgrading interceptor facilities at which time Bethel Township flows exceed SDCA capacity.

Much of the 30 year old and greater sanitary sewer collections systems owned and operated by SDCA exhibit mild inflow and infiltration related flow increases during prolonged wet periods. Such conditions have been continually evaluated and addressed in the last decade. A study to monitor flows from the six BTSA connection points is presently being evaluated.

SDCA is currently investigating the feasibility of funding further corrective action through the realized savings of the DELCORA treatment costs.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

System monitoring and maintenance is performed as outlined in the attachment. Both pump stations are monitored and maintained by DELCORA personnel. No regulators in system. I&I monitoring is a continuing concern of the Authority.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

Analysis of the system capacities has been performed to define limits and timing of connections to system from Bethel Township. Data is shown on attachments.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **2**)

☒ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☐ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

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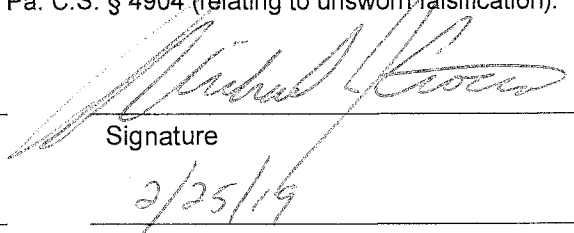
Michael J. Chermak, Jr.	Michael J. Chermak Jr.
Name of Responsible Official	Signature
610-485-6789	2/27/19
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Michael J. Ciocco, P.E., S.E.O.	
Name of Preparer	Signature
610-532-2884	2/25/15
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreads
Sewage Treatment Pl

Reporting Year: 2018

Facility Name: Southern Delaware County Authority

Permit No.:

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: MGD
Upgrade Planned in Next 5 Years? Year:
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: lbs BOD5/day
Upgrade Planned in Next 5 Years? Year:
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2014	2015	2016	2017	2018
January	2.342	2.285	2.043	1.89561	1.818
February	2.948	2.071	2.559	1.723	2.41
March	2.572	2.818	2.135	2.00352	2.678
April	2.655	2.317	1.995	2.16507	2.27
May	2.76	1.947	2.265	2.12652	2.368
June	2.122	2.166	1.938	1.8459	2.156
July	1.813	2.029	1.784	1.9241	1.858
August	1.746	1.7	1.655	1.88139	1.907
September	1.662	1.708	1.656	1.72907	2.161
October	1.709	1.808	1.632	1.6651	1.982
November	1.709	1.768	1.617	1.6413	2.803
December	2.03	2.146	1.805	1.65539	2.889
Annual Avg	2.172	2.064	1.924	1.85466219	2.275
Max 3-Mo Avg	2.725	2.402	2.249	2.09836631	2.558
Max : Avg Ratio	1.25	1.16	1.17	1.13	1.12
Existing EDUs	10,046.0	10,086.0	10,132.0	10,240.3	10,230.7
Flow/EDU (GPD)	216.2	204.6	189.9	181.1	222.4
Flow/Capita (GPD)	61.8	58.5	54.3	51.7	63.5
Exist. Overload?					

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2014	2015	2016	2017	2018
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Annual Avg					
Max Mo Avg					
Max : Avg Ratio					
Existing EDUs	10,046	10,086	10,132	10,240	10,231
Load/EDU					
Load/Capita					
Exist. Overload?					

Projected Flows for Next Five Years (MGD)

	2019	2020	2021	2022	2023
New EDUs	20.0	20.0	20.0	20.0	20.0
New EDU Flow	0.0041	0.0041	0.0041	0.0041	0.0041
Proj. Annual Avg	2.06203	2.06613	2.07023	2.07433	2.07843
Proj. Max 3-Mo Avg	2.40972	2.41452	2.41931	2.4241	2.42889
Proj. Overload?					

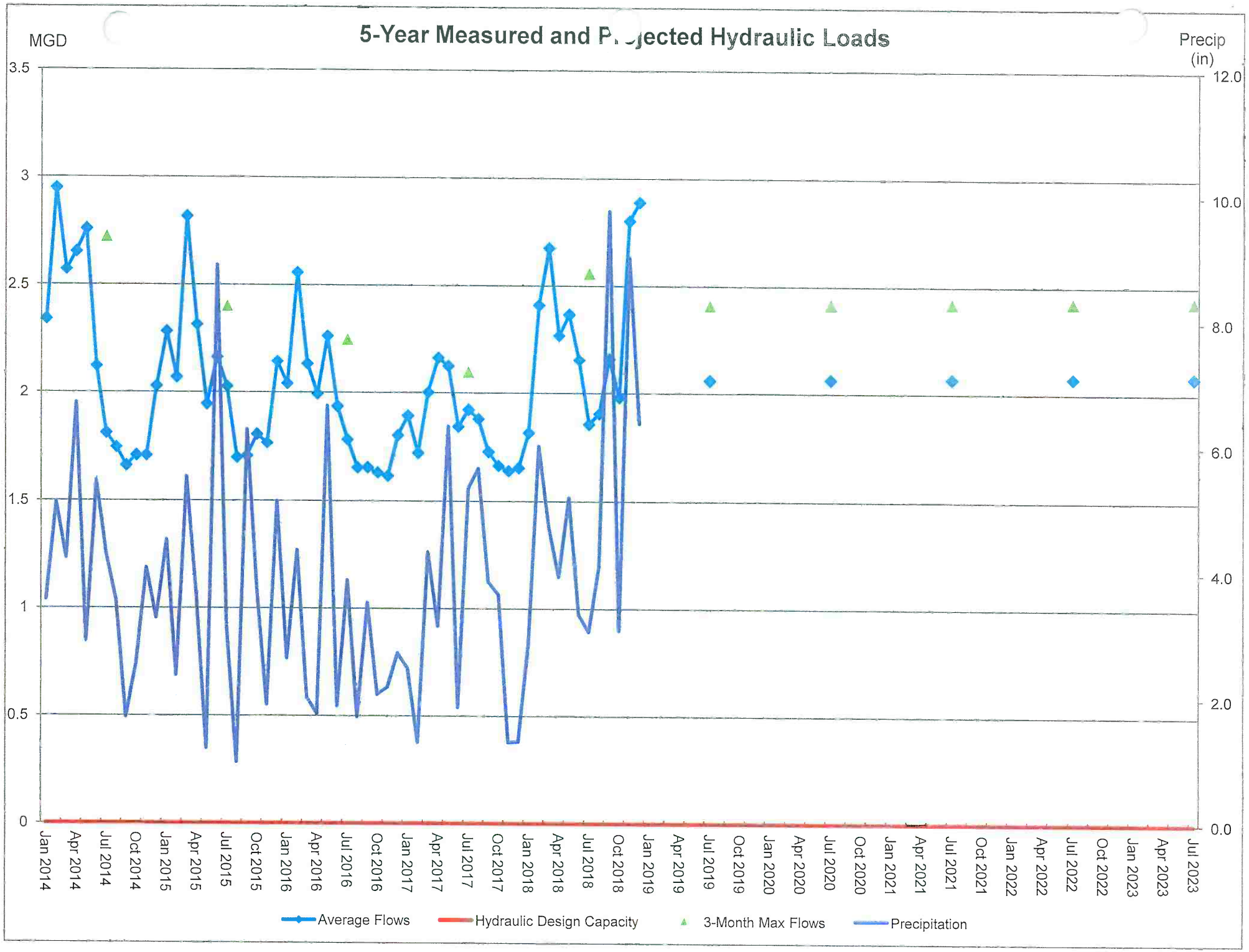
Projected BOD5 Loads for Next Five Years (lbs/day)

	2019	2020	2021	2022	2023
New EDUs	20	20	20	20	20
New EDU Load	11.680	11.680	11.680	11.680	11.680
Proj. Annual Avg	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Proj. Max Avg	#DIV/0!				
Proj. Overload?	#DIV/0!				

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2014	2015	2016	2017	2018
January	3.56	4.52	2.63	2.48	2.85
February	5.12	2.36	4.36	1.3	6.02
March	4.23	5.52	2.01	4.33	4.74
April	6.69	3.58	1.75	3.15	3.94
May	2.91	1.2	6.65	6.33	5.21
June	5.46	8.89	1.87	1.86	3.34
July	4.3	3.16	3.88	5.35	3.06
August	3.55	0.98	1.7	5.66	4.11
September	1.69	6.27	3.52	3.86	9.76
October	2.54	3.76	2.06	3.66	3.08
November	4.07	1.89	2.17	1.3	9.03
December	3.27	5.14	2.72	1.31	6.38


5-Year Measured and Projected Hydraulic Loads
MGD
Precip (in)
3.5
3
2.5
2
1.5
1
0.5
0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan 2014
Apr 2014
Jul 2014
Oct 2014
Jan 2015
Apr 2015
Jul 2015
Oct 2015
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
Oct 2017
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Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
Precipitation

UPPER CHICHESTER TOWNSHIP
SDCA SYSTEM MAP

2008
SCALE: 1" = 500'

Aston Township

Chester Township

City of Chester

Borough of Trainer

Marcus Hook Borough

Lower Chichester Township

Bethel Township

State Of Delaware

BALDWIN RUN

SUN COMPANY TANK FARM

BUCKEYE TANK FARM

HILLTOP ELEMENTARY SCHOOL

FIRST PILGRIM CHURCH

LARKINS CORNER SHOPPING CENTER

SAINT JOHN FISHERS CHURCH

CHICHESTER HIGH SCHOOL

CHICHESTER JUNIOR HIGH SCHOOL

IMMACULATA HIGH SCHOOL

BOOTHS RUN

GRAPHIC SCALE

REV. 4/20/2012
REV. 11/16/2011
REV. 06/01/2010
REV. 10/9/2009

CATANIA ENGINEERING ASSOCIATES, INC.
Consulting Engineers
520 WEST MacDADE BOULEVARD
WILMONT PARK, PA. 19033-2311
TEL. (610) 532-2864
FAX. (610) 532-2923

LEGEND

- ARTERIAL or LIMITED ACCESS ROADS
- COLLECTOR and/or LOCAL ROADS
- NON-DEDICATED ROADS
- ALLEYS, PRIVATE LANES or DIRT ROADS
- WATER COURSES and STREAMS
- 100 YEAR FLOOD PLAIN
- RAILROAD TRACKS
- FORCE MAIN
- ABANDONED SEWER LINE
- MUNICIPAL BUILDING
- SCHOOL
- CHURCH
- FIRE STATION
- DATA UNAVAILABLE

SYSTEM MAP DATA

SIZE	LENGTH (FT)
8"	765,243
10"	23,008
12"	13,753
15"	19,228
18"	3,792
21"	4,388
24"	16,417
30"	1,863
36"	-
	736

MANHOLE CODE CHART

NO.	MANHOLE
1	MH, Manhole
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SOUTHERN DELAWARE COUNTY AUTHORITY
ANTICIPATED FUTURE CONNECTIONS

			UNITS
Spiro	36.961 Ac.	Naamans Creek Road	60
Pitney Realty	31.862 Ac.	Naamans Creek Road	60
CCRC Fizzano	25.93 Ac.	Township Line Road	418
TNT Fireworks		Columbia Avenue	3
Clover Developers			4
Eagle Road			3
Approved Subdivisions		Various	6
Projected Per Year		15/Yr for 20 Years	300
SDCA		Total	854
BTSA		2800-2215 Total	585
		TOTAL PROJECTIONS	**1,439**

EXISTING CONNECTIONS

BTSA	2,215	
SDCA	8,017	
	EXISTING TOTAL	**10,232**

Updated: February 2019

ANNUAL MAINTENANCE PROGRAM
I & I PROGRAM

The Southern Delaware County Authority has over the years been pro-active in an annual system maintenance program and infiltration/inflow activities. The Authority (SDCA) engages contractors to perform maintenance on an annual basis. Two contracts, one for sewer system maintenance (SSM) and the other for sewer system repairs and reconstruction (SRM) are and have been included in the SDCA budget since the 1960's. The SSM contract includes one hour response service for blockages in the system, televising the system as needed and most importantly the quarterly cleaning and inspection of the "trouble areas" of the system. It also includes root removal and chemical treatment of any areas of the system identified by the Authority. Any and all system inspections resulting in possible infiltration/inflow problems are promptly addressed and corrected.

The SRM contract includes any and all repairs which are required in the system. Manhole repairs and reconstruction, gravity and force main repairs are addressed when identified on inspection or by notification from a resident customer of the system. Manhole casting adjustments for both PA DOT and Township resurfacing projects affords the Authority to inspect over 50 manholes a year. If inspection shows any signs of infiltration through the manhole, immediate repairs are ordered and completed by the SRM contractor. Emergency response for all SRM calls is prompt and efficient.

The question of the illegal connection of storm water collectors, such as roof drains, area drains, sump pumps and foundation underdrains has been addressed by SDCA but a solution to the problem has not been reached. The major stumbling block is costly full time inspections and enforcement.

SDCA is prepared to and will implement the metering of any subareas of any watershed where excess flows cause or may cause problems with overflows of manholes. Expectations are that such metering could very well be accomplished concurrently with the discussions held with DCPD for metering flows in several watershed basins. With the recent change in over 60% of flows

to Delcora from the New Castle, Delaware system, SDCA may realize savings to not only pay the debt service on the required pump station construction but provide additional resources to refocus SDCA on the I&I program. The additional flows from Bethel Township, along with associated connection fees, will also provide additional resources for SDCA.

System maintenance commitments have been made to SDCA customers over the years. A pro-active program is in place and the Board members are totally united in their commitment to continue the process for the future.

Pump Station Summary

DELCORA has plans of both the Beech Street and Naamans Creek Pump Stations (which DELCORA maintains). The BSPS was upgraded in 2010.

Industrial Waste Report

INDUSTRIAL WASTE DISCHARGES

a. DELCORA is in possession of the 2016 list of industrial discharges and is issuing permits for pre-treatment.
b. No pre-treatments are performed beyond the DELCORA requirements.
c. No other problem areas are known within the system.

Stantec

Chapter 94 Municipal Waste Load Management

Annual Report for Year 2018

February 21, 2019

Prepared for:

Southwest Delaware County Municipal Authority
One Gamble Lane
PO Box 2466
Aston, PA 19014-0466
(610) 494-1335 x 14

Prepared by:
Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 105
West Chester, PA 19380
(610) 840-2500

Preparer:

_____
Signature
James M. Gade, PE
Stantec Consulting Services Inc.

Permittee:

_____
Vice Chairman, Board of Directors,
SWDCMA

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2018

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION

Permittee Name:	**SWDCMA**	Permit No.:	**PA**
Mailing Address:	**One Gamble Lane**	Effective Date:	
City, State, Zip:	**Aston, PA 19014**	Expiration Date:	
Contact Person:	**Leonard Balestrieri**	Renewal Due Date:	
Title:	**Chairman, Board of Directors**	Municipality:	**Aston**
Phone:	**610-299-2485**	County:	**Delaware**
Email:	**lenb580@gmail.com**	Consultant Name:	**Stantec**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:

   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:

   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   N/A

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

   Check the appropriate boxes:

   ☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment C**)

   ☐ List summarizing each extension or project attached (**Attachment**)

   ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

   Comments:

   See Section 4.0 of the Attached Report.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

   See Section 5.0 of the Attached Report.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

   Check the appropriate boxes:

   ☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

   ☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

   Comments:

   See Section 6.0 of the Attached Report. The Reported SSO's in the System were due to equipment failures and blockages and were not related to capacities of the conveyance system.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations
☒ The collection system does contain pump stations (Number – **5**)
☒ Discussion of condition of each pump station attached (**Attachment H**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)
☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Thomas Agnew

Name of Responsible Official | Signature

(610) 494-1335

Telephone No. | Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

James M Gade, P.E.

Name of Preparer | Signature

(610) 840-2508

Telephone No. | Date

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LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Southwest Delaware County Municipal Authority's (SWDCMA) sewage collection, conveyance, and treatment facility (the "system") was constructed in 1950's-60's to service residents, commercial, and industrial businesses located in Aston Township. Over the years, the sewer system was extended, and pump stations were installed to serve newer developments in Aston Township, most parts of Middletown Township (MTSA), and portions of Chester, Upper Providence (UPTSA), Edgmont and Upper Chichester Townships (SDCA), Boroughs of Brookhaven and Chester Heights, all located in Delaware County.

In 2014, the Authority's 6.0 million gallons per day ("MGD") capacity wastewater treatment facility was demolished after an agreement with Delaware County Regional Water Quality Control Authority (DELCORA), and all flows received at this plant were diverted to DELCORA's treatment facility in City of Chester. DELCORA constructed the Chester-Ridley Creek (CRC) Pump Station at the Authority's treatment plant site to convey these flows.

In 2018, MTSA completed the second phase of the of their Chester Creek Interceptor (CCI) to the DELCORA CRC Pump Station. Completion of this project removed MTSA sewage from the SWDCMA collection system.

1.1 SEWAGE FACILITIES – COLLECTION SYSTEM

SWCDMA's existing sewage collection and conveyance system consists of the following components:

- Eagle Pumping Station
- Team Road Pumping Station
- Woodbrook Pumping Station
- Toby Farms Pumping Station
- Chester Creek Interceptor (CCI)
- Baldwin Run Interceptor (BRI)
- Four Siphons and Seven Stream Crossings
- 24 Grinder Pumps
- Approximately 63 miles of sewers

Due to frequent Sanitary Sewer Overflows (SSOs) during wet weather conditions along Chester Creek Interceptor (CCI) in the past and the resulting PADEP Consent Order, the Authority submitted a Corrective Action Plan (CAP) and Sanitary Connection Management Plan (SCMP) in 2012. Although the entire collection system and the treatment plant were regulated under the 2012 SCMP, PADEP exempted all connections into the sewer system that contribute flows to the BRI after the treatment plant was demolished in 2015.

With the completion of the second phase of the MTSA CCI, the CAP and SCMP was removed for the SWDCMA CCI for the second half of 2018 and going forward.

1.2 OPERATIONS

The CRC Pump Station received and conveyed an annual average flow of 4.569 MGD of sewage in 2018. These flows include discharges from Middletown Township Sewer Authority's (MTSA) customers, as their discharge to CRC Pump station was still conveyed through SWDCMA owned portion of CCI, located downstream of the Knowlton Road Siphon before April 8th, 2018. After April 9th, 2018, MTSA completed their CCI to the CRC Pump Station and removed their flows from the SWDCMA CCI. The flows from MTSA and SWDCMA are each now measured directly by DELCORA. Please refer to the Table 2 in Section 2 for the Summary of the Annual flows that were obtained from the flow meters at the CRC Pump Station.

As of December 31st, 2018, there were a total of 7,851 SWDCMA customers contributing to flows received at the CRC Pump Station. The following is a list of customers in the service areas:

Table 1: SWDCMA CUSTOMERS LIST SUMMARY

Service Area	Customers		
	Residential	Commercial & Industrial	Total
Aston and Chester Townships, Chester Heights and Brookhaven Boroughs	7,097	389	7,486
SDCA: Upper Chichester and Edgmont Twps.	356	9	365
		Total =	**7,851**

The full-service customers of the Authority (in sewer districts where the Authority owns and maintains the collection system) are billed based on their water usage as recorded by water meters at their location. The Authority directly billed 7,486 customers in 2018 in Aston and Chester Townships and the Boroughs of Brookhaven and Chester Heights.

Flows from Southern Delaware County Authority (SDCA) are still conveyed through the Authority's interceptors through separate agreements. SDCA is billed by SWDCMA for their reported contributing Equivalent Dwelling Units (EDUs) or Customers.

Middletown Township Sewer Authority (MTSA), and Upper Providence Township Sewer Authority (UPTSA) customers/EDU's have not been reported here as DELCORA bills MTSA directly and no longer is a tributary municipality.

The Authority contracts KBX Golden, LLC (previously Aqua Resources, Inc.) to maintain and operate the collection system and has been executing the PADEP approved CAP and SCMP. CAP details on the Rainfall Derived Inflow and Infiltration (RDII) reduction program involves investigation, repair and or replacement of damaged sewer mains. See Section 9 for the report of the RDII abatement activities that have been conducted by the Authority during 2018.

2.0 HYDRAULIC LOADINGS

Flow Data or Hydraulic loads received at the CRC Pump station have been recorded and reported for the year 2018. Please note that the flows reported here include the SWDCMA and MTSA Customers combined discharges for January through March 2018. Flows from April through December 2018 are reported for SWDCMA only. See Appendix A for Current Loadings.

2.1 HISTORIC HYDRAULIC LOADINGS

Table 2 illustrates the historic flows (hydraulic loadings) from the previous 5 years. The annual average flow for the year 2018 was 3.222 MGD and the Maximum Three Consecutive Months Average (MTCMA) was 4.268 MGD. The highest average flow of 4.941 MGD occurred in March and the lowest average flow of 2.317 MGD occurred in July. As previously stated in Section 1.2 and 2.0, the January through March flows included both SWDCMA and MTSA flows as the MTSA CCI was not yet completed. The highest monthly average flow with only SWDCMA flows occurred in December 2018.

Table 2: REPORTED HYDRAULIC LOADINGS (MGD) 2018

MONTH	2018	2017	2016	2015	2014	* 2018 Precipitation Inches
JAN	**3.495**	3.595	**3.822**	4.372	4.722	2.85
FEB	**4.367**	3.435	**4.301**	**4.058**	5.396	6.02
MAR	**4.941**	**3.735**	**4.158**	**5.076**	**5.050**	4.74
APR	2.974	**4.103**	3.805	**4.425**	**5.265**	3.94
MAY	2.938	**3.999**	4.216	3.875	**5.758**	5.21
JUN	2.729	3.631	3.688	4.044	4.644	3.34
JUL	2.317	3.548	3.419	4.167	4.054	3.06
AUG	2.368	3.515	3.301	3.382	3.809	4.11
SEP	2.729	3.390	3.124	3.318	3.818	**9.76**
OCT	2.655	3.380	3.200	3.506	3.691	3.08
NOV	3.485	3.314	2.995	3.449	3.717	9.03
DEC	3.664	3.258	3.411	3.854	3.981	6.38
Annual Average (AA)	**3.222**	**3.575**	3.620	3.961	4.492	**3.774**	5 Year Average
3 Month Max. Average (MTCMA)	**4.268**	**3.946**	4.094	4.520	5.358	**4.437**	
Ratio (MTCMA/AA)	**1.32**	**1.10**	1.13	1.14	1.19	**1.179**	

* Precipitation data was obtained from the National Weather Service's station at the Philadelphia International Airport.

Please note that since 2015, AA flows have continued to reduce, and the 2018 records have been lowest of the five-year data. The five-year AA average flow is 3.774 MGD. The calculated 5-year AA flow is anticipated to continue to decrease as the inclusion of MTSA's flows from SWDCMA's collection system flow calculation phases out. The MTCMA and the ratio of MTCMA to AA is artificially high this year. This is due to the three greatest months of flow including MTSA's flows in the collection system and the Average Annual flow rate including nine months with only SWDCMA flows. This is an anomaly only for the 2018 Chapter 94 report with the ratio expected to return to between 1.05 and 1.20 in 2019. If the ratio for 2018 was calculated with the 3 greatest months with only SWDCMA flows, the period of October through December, the ratio for 2018 would have been 1.13. The Charts are included in Appendix A.

3.0 HYDRAULIC LOADING PROJECTIONS

Numbers and projections for future flow were derived from the historic 5-year average monthly flow in proportion to the Maximum Three Consecutive Months Average (MTCMA). This ratio is multiplied by the anticipated flow. The projected flow is the 2018 annual average flow plus the known additional flows from proposed connections at new developments. This projected data will be used as data towards repairs, upgrades and improvements of various components of the Authority's Collection System.

The Projection Table and Chart are attached in Appendix B.

Table 3: PROJECTED HYDRAULIC LOADINGS (MGD) for 2019

YEAR	ADDITIONAL EDU's		ADDITIONAL	PROJECTED	PROJECTION	PROJECTED
	SWDCMA	MTSA *	Flow	AVG FLOW	FACTOR	MTCMA
			GPD	MGD		MGD
2019	85	N/A	22,313	3.244		3.824
2020	45	N/A	11,813	3.256		3.838
2021	30	N/A	7,875	3.264	1.18	3.847
2022	25	N/A	6,563	3.270		3.855
2023	20	N/A	5,250	3.276		3.861

* Tables from previous Chapter 94 reports included the Estimated MTSA EDU connections based on PA-DEP's Approved Connection Management Plan, dated December 27, 2017. Due to the completion of MTSA's CCI, no additional EDUs from MTSA are planned in SWDCMA's collection system and will be removed from the Table in the future Chapter 94 reports.

4.0 SEWER EXTENSIONS

Due to the Authority's 2012 Corrective Action Plan (CAP) to reduce the RDII and Sanitary Connection Management Plan (SCMP) all requests for new sanitary connections into the collection system must be approved by PADEP through the SCMP process. Allocations for new connections were submitted to and approved by PADEP in the following years on an annual basis. There were exceptions for emergencies such as residents with failing septic system, to which connections were allotted from the Miscellaneous quota or PADEP approved those connections without waiting for the annual allocation quota. In 2018, the CAP and SCMP was removed with the removal of MTSA flows from the SWDCMA CCI.

Following PADEP connection allocation letters, SWDCMA approved to connect new developments such as Brookefield (140 EDUs), Rose Hill (36 EDUs), and Lenape Valley (15 EDUs). These developments are in various stages of design and construction. Brookefield constructed a pump station to collect and convey flows generated at their development. The Station connected to the SWDCMA collection system and will increase flows as homes are ready to be occupied. The 20 seasonal cabins at the Historical Camp Meeting Development who were approved to connect their 8 EDU's via the Brookefield Collection system/pump station are in the process of commencing the construction of their sewers. They anticipate completing this construction and connect into Brookefield Collection system by the end of 2019.

In addition, the Authority has approved 4 EDU for commercial connections in 2018. These connections include additional flow for the Aston Township Fire Department for 3 additional EDUs, and Lot 61 of Rolling Hills Industrial Park for 1 EDU.

5.0 MONITORING, MAINTENANCE AND REPAIR PROGRAM

5.1 COLLECTION SYSTEM

The Authority has defined 6 major drainage areas in the collection system and sub areas within the major areas (See Appendix C). The Authority follows a 10-year plan where portions of the systems are video inspected and evaluated every year. After 10 years, the entire collection system will have been inspected, cleaned, repaired, and rehabilitated to reduce the RDII in the system. The Authority has continued to acquire services of KBX Golden LLC (Aqua Resources, Inc.) as an external Contracting Agency to operate and maintain their Collection System. KBX's equipment includes 2 trailer mounted sewer jets, and 2 truck mounted CCTV system with grouting and air testing equipment.

KBX cleaned 41,900 linear feet and CCTV inspected 35,000 linear feet of sewer mains in 2018. They also responded to 69 customer initiated trouble calls and 12 PA-One Calls. Maintenance and repair activities included removing roots from the mains/manholes, clearing sewer blockages, and testing/cleaning interceptor siphons. Summary of all activities is included in Appendix D along with a trouble calls log.

The contracted maintenance personnel are trained in the operation of investigative and repair equipment to ensure adequate personnel are available to respond to customer calls and maintain aggressive repair and inspection schedules. The Authority reviewed safety protocols and developed additional standard operating procedures using a safety consultant. Personnel have been trained for "Confined Space Entries" as per OSHA requirements.

5.1.1 Macro Metering

The Authority monitoring/recording flow data from 8 meters locations at various contributing tributary sewer mains to CCI and BRI, to identify sources of RDII in the collection system. The Authority purchased 2 additional flow meters in 2018. Data from the meters have been used to establish base line (or dry weather) flows, compare these flows to their wet weather peaks and thereby help in identifying the sub-drainage areas that contribute the most RDII.

SWDCMA continued to obtain flow data from the 6 flow meters that were installed by CSL, who were contracted by DELCORA. These 6 flow meters were installed on MTSA old interceptor and SWDCMA sewer mains that contribute flows to SWDCMA's CCI. These meters were separately monitored by CSL to obtain flow discharge data to determine volume of flow contributions by Aston and Middletown Townships into the CCI and helped DELCORA in setting up billing ratios for both Townships. The recorded flow data also provided a logical and quantifiable volume of RDII entering into the system by comparing dry weather and wet weather flows from both Townships. The meters were removed at the beginning of May 2018 after the completion of MTSA's CCI and the use of DELCORA's flow meter at the CRCPS.

5.1.2 Micro Metering

During 2015, the Authority began investigating sources of RDII in the Sewer District SA06-02, with micrometers installed in MH420 and MH427. A regional meter was installed in MH412. As sufficient data was collected and analyzed, Neumann University, which owns the collection system within their property, was determined to be a potential source for significant RDII. The Authority worked with the University and the Sisters of St. Francis to identify the sources of RDII within their system including additional micrometering by the Authority, the Sisters of St. Francis hired a contractor to inspect all of their sanitary sewer lines and laterals. Multiple illicit storm sewer connections were found into the

sanitary sewers within the privately-owned system. The Sisters of St. Francis developed plans and completed the work to remove the illicit discharges in October 2017. The Authority continued to monitor their discharge for the first quarter of 2018 to document the impact of these repairs. A final report was prepared in April 2018 and is included in Appendix E.

6.0 CONDITION OF THE EXISTING SEWER SYSTEM

The Authority believes that its collection system is in an overall good condition and improving after repairs and replacements with each passing year. Approximately 50% of the collection system in Aston was built in early 1960's using mainly terracotta (vitrified clay) for sewer mains and reinforced concrete pipes for interceptors. Subsequently, sewer mains (approximately 28%) in Aston were built between 1970's to early 1980's using the truss pipes. Aston's Northwest extensions (approximately 20%) were built in early 1990's using PVC pipes. The Indian Rock development built in mid-2000's also used PVC pipe sewers. The latest ongoing extensions are the Brookefield and Lenape Developments were also designed to install PVC sewers. Portions of the old reinforced concrete pipes have been replaced by PVC pipes during repairs. Portions of Chester Creek (CCI) and Baldwin Run Interceptors (BRI) were replaced with PVC pipes during upgrades in 1990's.

The existing collection system includes four (4) pump stations, four (4) siphons, seven (7) stream crossings, approximately sixty-three miles of collecting piping, and two (2) main delivery interceptors (CCI and BRI). The Authority maintains 24 individual grinder pumps serving single family homes within the service area. The Authority upgraded its bell siphons, and one of its pump stations (Team Road PS) and intends to upgrade the other Pump Stations and stream crossings in the near future.

The Authority is addressing the RDII Impact on the collection system during periods of precipitation and high ground water. The Authority is committed to repair or redesign the existing infrastructure. As detailed in the CAP/SCMP, the RDII abatement program efforts have increased. The contracted personnel (KBX Golden) has cleaned 220,000 linear feet of sewers and televised/inspected 150,600 linear feet of sewers in the last three years (2015-18) of their maintenance contract. A consolidated list of all the damages to the collection system is being made every year. This list identifies location, assessment and type of damage according to NASSCO's defect coding, type and nature of repairs and recommendations. Repairs are prioritized based on the intensity of damage and amount of RDII getting into the sewers. These repairs were conducted every year. KBX Golden has continued to clean, televise, and inspect sewers to identify more defects, and repair them based on priority levels.

A list of the repairs of sewers and manholes that were conducted in 2018 per the Priority List is included in Appendix F.

SWDCMA experienced a total of 6 bypassing or Sanitary Sewer Overflow (SSO) events in 2018 in the collection system. Copies of the SSOs are attached in Appendix G. A summary of these SSO events is listed in the Table below:

Table 4: SSO REPORTS SUMMARY

Date	SSO Location	Weather	Cause of SSO	Result of SSO
1/10/2018	Brookhaven Road	Dry	Grease Blockage	Sewage flowed into tributary of Chester Creek
1/22/2018	644 Lamp Post Lane	Dry	Solids Blockage	Sewage flowed from homeowner vent to storm sewer
2/27/2018	Woodbrook PS	Wet	Equipment Failure	Gray Water flowed into Marcus Hook Creek
6/19/2018	Marianville Road	Dry	Solids Blockage	Sewage flowed into storm sewer
7/30/2018	Archer Lane Easement	Dry	Solids Blockage	Sewage flowed into tributary of Chester Creek
11/26/2018	Woodbrook PS	Wet	Excessive Flow	Gray Water flowed into Marcus Hook Creek

Two SSO's were reported at the Woodbrook Pump during wet weather. The February 27th SSO was due to an equipment failure and fixed promptly. The November 26th SSO was due to excessive flows during wet weather. SWDCMA is currently investigating electrical revisions to allow an additional standby pump to be able to operate to eliminate this issue. The 4 SSO's during Dry Weather conditions were due to Solids blockages and Grease problems in the sewer mains.

The Authority continues to regulate/enforce Aston Township's Fats, Oil & Grease Pretreatment Ordinance (FOG program) and monitors FOG discharge from food establishments within the Township. It is a self-monitoring program which includes more stringent requirements and firm action against those who don't comply with its requirements.

7.0 SEWAGE PUMPING STATIONS

SWDCMA currently owns and maintains 4 Pump Stations. The Authority has capabilities to meter and record flows from two of its four pump stations. Team Road Pump Station upgrades that were completed in January 2017, provide flow metering capabilities. For the other two stations, a 24-hour flow is estimated using run time meters and pump capacity. Maximum flow is not anticipated to exceed pumping station capacity in the next three-year period. Once the Authority procures additional funds in the form of either tapping fees or Federal/State Grants, improvements to the pump stations in the collection system will be facilitated. See Appendix H for Pump Station Data.

Table 5: PUMP STATION SUMMARY

Pump Station	Capacity	
	Design Pump Rate	Design Capacity
Woodbrook	2,778 GPM	**4.000 MGD**
Eagle	616 GPM	**0.887 MGD**
Team Road	500 GPM	**0.720 MGD**
Toby Farms	1900 GPM	**2.736 MGD**

Woodbrook Pump Station had 2 SSO's in 2018. One was due to an equipment failure, a bubbler tube had separated, and the other was believed to be excessive flows during a wet weather event. The maximum pumping rates of the other pump stations were greater than the peak flows they received and with Woodbrook PS having an isolated incident of excessive flow.

7.1 EAGLE PUMP STATION

The West Branch Chester Creek Interceptor conveys most flows to Eagle Pump Station. This interceptor crosses under the Chester Creek just prior to entering the Pump Station wet well. Depth of this Station's wet well was limited during construction due to rock. With the elevation of the interceptor creek crossing and the restricted wet well depth, the upstream collection system is used as short-term storage, resulting in occasional wastewater surcharge in the upstream interceptor. This station was permitted by PADEP in the 1990's and there have been no wet weather overflows. Due to concerns raised by PADEP in the past, the Authority has adjusted the level controls to reduce surcharging the upstream sewer. Lack of adequate wet well depth does remain a problem. The Authority has evaluated various options to alleviate these issues at the station and increase its capacity.

In addition, this station has power limitations and a force main that has broken more than a dozen times in the past. It was suspected that water hammer was the contributing factor, along with age, and defective pipe material situation were the likely causes for these breaks. It was found that there were pressure surges in the force main at a 90 degree turn and subsequent steep uphill slope. The Authority has installed a Surge Valve, upgraded the existing Air Release valve to a new Air/Vacuum Release combination valve, and installed new pipes were installed at all the break points.

With the above issues, the Authority restricts any additional flows into Eagle Pump Station until major renovations are complete. The complete renovation costs are estimated to be between $1.0 to $2.0 million and a projected completion schedule to be 12 to 24 months. SWDCMA is currently exploring multiple upgrade options and exploring various avenues to procure funding to facilitate the reconstruction of this pump station.

7.2 TEAM ROAD PUMP STATION

Similar to Eagle Pump Station, Team Road Pump Station is fed by the East Branch Chester Creek Interceptor that crosses under Chester Creek just prior to entering the wet well and has rock constraints which limited the wet well depth during construction. These restrictions result in the upstream collection system being surcharged as short-term sewage holding capacity.

Three (3) new residential developments, Brookefield (104 EDUs), Rosehill (36 EDUs) and Lenape Valley (15 EDUs) located in Chester Heights Borough requested to connect into the SWDCMA's collection system. Brookefield and Rosehill are located near SWDCMA's sewers that discharge to Eagle Pump Station and Lenape Valley is closer to the sewers that discharge into Team Road Pump Station. Due to the Eagle Pump Station limitations previously detailed, the developers agreed to divert all their new flows to the Team Road Pump Station.

The Authority and the Developers entered an agreement to convey their flows to Team Road Pump Station and upgrade it to increase its capacity to cater wet weather conditions. After PADEP's approval, this station was upgraded by installing larger impellors, increasing motor size, upgrading electrical components, installing a flow meter, provide bypass piping, upgraded transformer, new generator, VFD controls, PLC/SCADA controls among other improvements, and were completed at a cost of approximately $400,000. The tapping fees collected from these new developments will be used in the long-term plans to upgrade Eagle Pump Station.

7.3 TOBY FARM PUMP STATION

Toby Farms is the oldest Pump Station owned and operated by SWDCMA. Influent volume and pumping capacity for this Station is not available. Due to its design and age, there is no practical method of estimating flow volume from this Station. A stand-by highway trailer mounted diesel-powered pump is provided in case of power failure. This Station is located within the floodway of Chester Creek and is subject to occasional flooding. Most of the equipment is close to the end of its design life and one of the 2 Pumps was completely refurbished in 2017 with replacements parts. The Authority has been unsuccessfully working with various agencies (Chester Township, PADEP, FEMA, and PEMA) to obtain permits to relocate the station out of the flood way for the last 4 to 5 years. SWDCMA's strategy is now to replace /repair and waterproof as much of the critical equipment within the station in the next 2-3 years.

7.4 WOODBROOK PUMP STATION

This Station was built in 1991 and its pumps, motors, controls, etc., has been modified several times in the subsequent years to increase its volume and provide adequate pumping capacity. An additional force main was added in 1994 and the two force mains were equipped with a mag meter each, which are tied into a flow totalizer and a chart recorder.

The Authority is continuously seeking to procure funds from Grants or other means to upgrade the Authority's Pump Stations. This includes new pump and electrical equipment, install PLC/SCADA systems, upgrade transformers, provide new generator, and install flow meters to obtain accurate data.

8.0 INDUSTRIAL WASTES

Due to the decommissioning of the Authority's wastewater treatment plant, SWDCMA no longer regulates and monitors industrial wastes from its customers. Some of their Industrial Users (Significant and Intermediate) were transferred to DELCORA's pretreatment program. The Authority continues to enforce/monitor Aston Township's 2014 Pretreatment Ordinance called "Fats, Oil & Grease (FOG) Program, to strengthen regulations and encompass all commercial and non-residential establishments that are responsible in discharging FOG into their sewer system. New restaurants/food establishments are inspected and evaluated to be a part of this FOG program.

9.0 CORRECTIVE ACTION PLAN & SEWER CONNECTION MANAGEMENT PLAN

Per the 2012 Corrective Action Plan (CAP) and Sewer Connection Management Plan (SCMP), the Authority has employed a series of corrective methods to reduce RDII as well as Infiltration and Inflow into the system. The Authority submits Semiannual Reports to list activities such as flow monitoring at various locations along the Interceptors to obtain preliminary data for micro monitoring, pre/post-abatement flow records, Micro monitoring, TV inspections of sewers, identifying sources, agreements with private owners to abate and monitor discharges, and repairs and upgrades to sewer systems. Micro monitoring work was conducted in Sewer Districts SA06-02 to record the effects of rains on the collection system. Data and reports of these works are also included in the semi-annual reports.

As reported before, new sanitary connections into sewers that contribute flows to the BRI are exempt from the 2012 CCI CAP/SCMP regulations. Two properties as reported in Section 4.0 of this report were approved to connect into the collection system after their PM approval processes.

With the completion of MTSA's Phase II Chester Creek Interceptor, flow through the SWDCMA portions of the CCI significantly decreased. With the removal of MTSA sewage, the SWDCMA owned CCI is no longer subject to the CAP and SCMP.

10.0 TRIBUTARY MUNICIPALITY REPORTS

10.1 ASTON, BROOKHAVEN BOROUGH, CHESTER TOWNSHIP

Aston Township, and portions of Chester Township and the Brookhaven Borough are considered as direct customers of SWDCMA and this report covers all the activities conducted by SWDCMA within these municipalities.

10.2 MIDDLETOWN TOWNSHIP

MTSA is reporting to PADEP/DELCORA directly, hence their report is not attached. MTSA completed construction of Phase II of their Chester Creek Interceptor between Knowlton Road connection and CRC Pump Station in March 2018. MTSA's flows are now entirely separated from SWDCMA's collection system and is no longer a Tributary Municipality.

10.3 SOUTHERN DELAWARE COUNTY AUTHORITY

Flows from 365 residential units from Upper Chichester are conveyed to SWDCMA via the Woodbrook Pump Station. SDCA's previously submitted report indicates that this area has been 100% built out, with no development anticipated in the future. Their report also indicates the service area is routinely televised and maintained by root cutting, joint grouting, manhole inspections, etc.

10.4 BOROUGH OF CHESTER HEIGHTS

The Borough does not own or maintain any public sewers within their limits. However, there are 34 homes within the Rolling Heights Estates and 4 isolated homes connected by private laterals. The public sewers connecting these homes are owned and maintained by SWDCMA and hence this Chapter 94 Report covers the system that services these 38 homes. As described in section 7.2, three new residential developments in the Borough are in various stages of the process of commencing construction and connecting into SWDCMA collection system. A total of 191 EDU's has been approved by PADEP. These developments would discharge into Team Road Pump Station.

10.5 UPPER PROVIDENCE TOWNSHIP SEWER AUTHORITY

Residential flows from portions of District 6 of UPTSA's public sewer service were conveyed to SWDCMA's CCI via MTSA's conveyance system. UPTSA discharges 231 residential EDU's at 262.5 GPD/EDU or approximately 60,637.50GPD. UPTSA recognizes that PADEP is enforcing a restriction on approval of the Planning Modules and Sewer Extensions to any flows that contribute to CCI.

After the completion of MTSA's Phase II construction of the Chester Creek Interceptor, UPTSA's discharge ceased to flow through SWDCMA's CCI and their conveyance agreement with SWDCMA has ended. UPTSA is no longer a Tributary Municipality.

APPENDIX A
HISTORIC HYDRAULIC DATA

SOUTHWEST DELAWARE COUNTY MUNICIPAL AUTHORITY

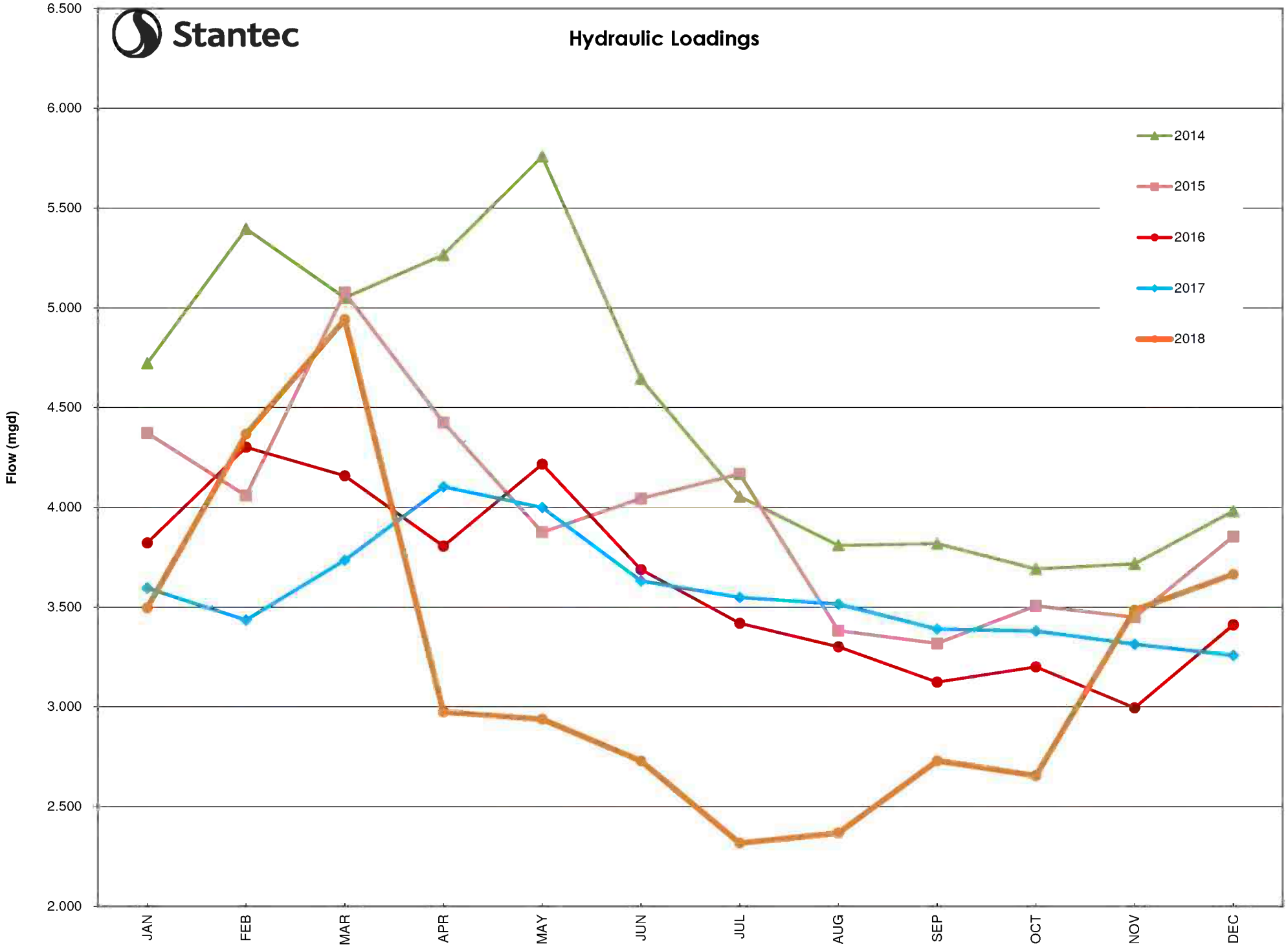
Project #: 174840200
Subject : **Chapter 94 Report for Year 2018**

Stantec

Prepared By: GKK
Checked By: JMG
Date: 2/26/2019

Table 2: REPORTED HYDRAULIC LOADINGS (MGD) 2018

MONTH	2018	2017	2016	2015	2014		2018 Precipitation Inches
JAN	**3.495**	3.595	**3.822**	4.372	4.722		2.85
FEB	**4.367**	3.435	**4.301**	**4.058**	5.396		6.02
MAR	**4.941**	**3.735**	**4.158**	**5.076**	**5.050**		4.74
APR	2.974	**4.103**	3.805	**4.425**	**5.265**		3.94
MAY	2.938	**3.999**	4.216	3.875	**5.758**		5.21
JUN	2.729	3.631	3.688	4.044	4.644		3.34
JUL	2.317	3.548	3.419	4.167	4.054		3.06
AUG	2.368	3.515	3.301	3.382	3.809		4.11
SEP	2.729	3.390	3.124	3.318	3.818		**9.76**
OCT	2.655	3.380	3.200	3.506	3.691		3.08
NOV	3.485	3.314	2.995	3.449	3.717		9.03
DEC	3.664	3.258	3.411	3.854	3.981		6.38
Annual Average (AA)	**3.222**	**3.575**	3.620	3.961	4.492	**3.774**	
3 Month Max. Average (MTCMA)	**4.268**	**3.946**	4.094	4.520	5.358	**4.437**	5 Year Average
Ratio (MTCMA/AA)	**1.32**	**1.10**	1.13	1.14	1.19	**1.179**	


Stantec
Hydraulic Loadings
Flow (mgd)
6.500
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
2014
2015
2016
2017
2018

APPENDIX B
PROJECTED HYDRAULIC DATA

SOUTHWEST DELAWARE COUNTY MUNICIPAL AUTHORITY

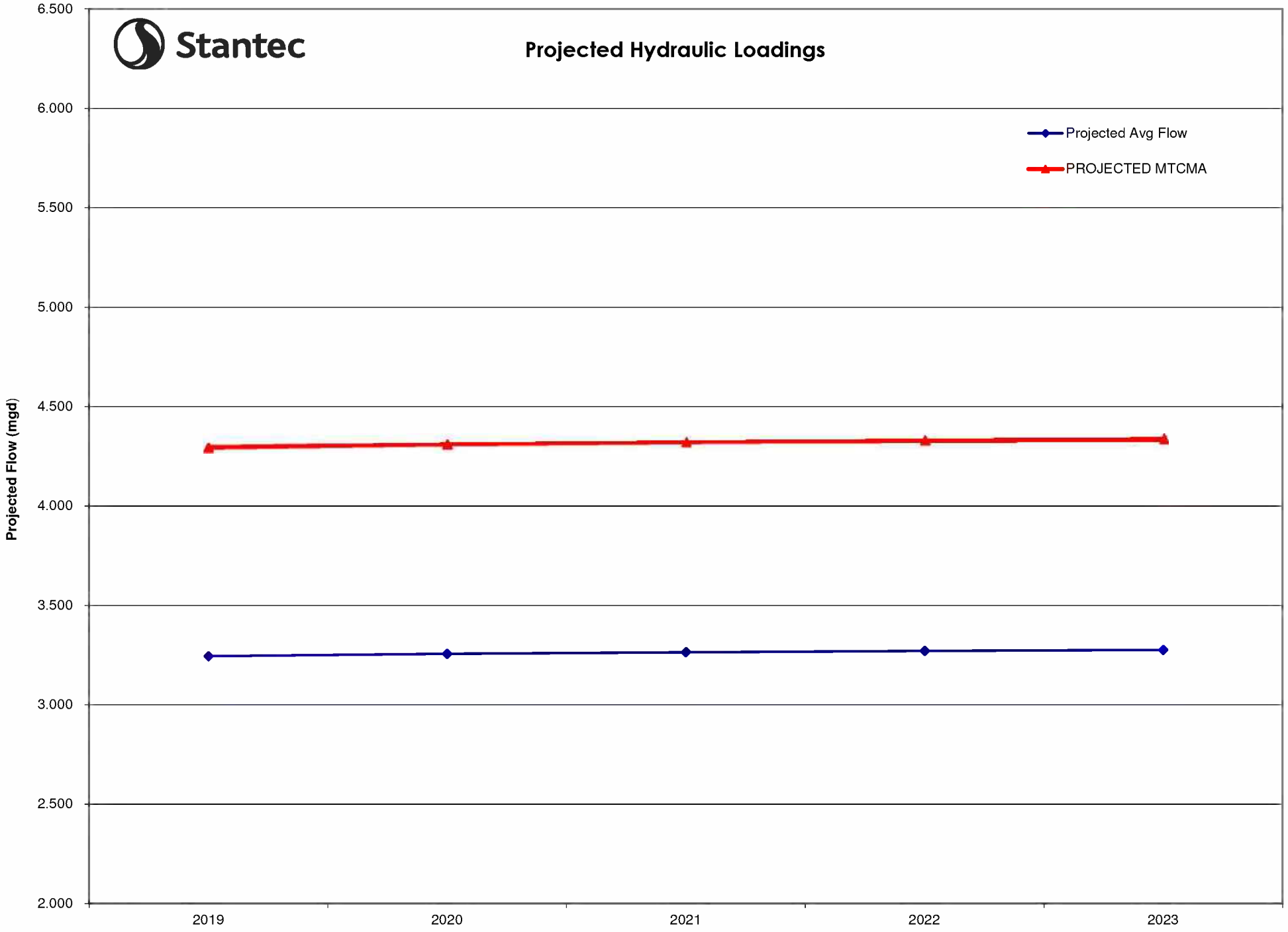
Project #: 174840200
Subject : **Chapter 94 Report for Year 2018**

Stantec

Prepared By: GKK
Checked By: JMG
Date: 2/26/2019

Table 3: PROJECTED HYDRAULIC LOADINGS FOR 2018

YEAR	Additional EDUs		Additional Flow GPD	Projected Avg Flow MGD	Projection Factor	Project MTCMA MGD
	SWDCMA	MTSA				
2019	85	N/A	22,313	3.244	1.32	4.298
2020	45	N/A	11,813	3.256	1.32	4.313
2021	30	N/A	7,875	3.264	1.32	4.324
2022	25	N/A	6,563	3.270	1.32	4.332
2023	20	N/A	5,250	3.276	1.32	4.339


Stantec
Projected Hydraulic Loadings
Projected Avg Flow
PROJECTED MTCMA
Projected Flow (mgd)
6.500
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
2019
2020
2021
2022
2023

APPENDIX C
SWDCMA COLLECTION AREAS MAP