

**Application of Pennsylvania-American Water Company for Acquisition of
the Wastewater Assets of Butler Area Sewer Authority (“BASA”)**

66 Pa. C.S. § 1329

Application Filing Checklist – Water/Wastewater

Docket No. A-2022-3037047

20. Proof of Compliance. Provide proof of compliance with applicable design, construction and operation standards of DEP or of the county health department, or both, including:
- c. For **wastewater** system acquisitions, provide a copy of the Chapter 94 Municipal Wasteload Management Report that was most recently submitted to DEP.

AMENDED RESPONSE:

- c. Attached as **Amended Appendix A-20-c** is Butler Area Sewer Authority’s 2022 Chapter 94 Report.

Amended Appendix A-20-c



Butler Area Sewer Authority Annual Wasteload Management Report

NPDES Permit No. PA0026697

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2022

Butler Area Sewer Authority
Municipal Wasteload Management Report
Operating Year 2022

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Municipal Wasteload Management Report
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Butler Area Sewer Authority

Municipal Wasteload Management Report Operating Year 2022

Summary

This Municipal Wasteload Management Report has been prepared by the Butler Area Sewer Authority (“BASA” or Authority”) to fulfill the requirements of Chapter 94, Municipal Wasteload Management of the Commonwealth of Pennsylvania Department of Environmental Protection's Rules and Regulations. The report describes the hydraulic and organic loadings placed on the BASA Wastewater Treatment Plant (WWTP) during the 2022 year and projects the future loadings on the treatment facilities to ensure that there is sufficient time to anticipate and plan for necessary sewage treatment facility expansions. In addition to evaluating plant loadings and forecasting necessary expansions, the annual Wasteload Management Report is also intended to indicate the need for sewer connection and extension limitations for systems that are currently overloaded or are projected to be overloaded in the near future.

Based on the Authority's billing records, the BASA WWTP served a total of 23,535 Equivalent Dwelling Units (EDUs) in 2022. The “New EDU” projected value of 48 EDUs/ year was based upon the historic five-year average EDU decrease per year value (-36) and the projected annual EDU value from approved development (84). The projected EDU value from approved development stemmed from 418 proposed EDUs from incoming development plans. BASA doesn't know if or when the additional EDUs will join the WWTP. For this reason, the future EDUs were evenly factored into the 5-year projected loading calculations.

The annual average daily flow during 2022 was 6.292 million gallons per day (MGD). During the past 5-year period, the monthly average daily flow exceeded BASA's WWTP's permitted hydraulic capacity of 10.0 MGD seven (7) times due to wet weather conditions. Three (3) of the occurrences occurred in 2018, two (2) in 2019, one (1) in 2020, and one (1) in 2022. All hydraulic capacity exceedances were caused fully or in part by heavy rainfall, snowmelt and ground saturation conditions. Despite these high monthly flows, the permit capacity was not exceeded for three consecutive months at any time over the last five years. Based on the treatment plant flow data and EDU growth trend, the projected 2027 annual average daily flow is 6.8092 MGD and maximum three-month average daily flow is 9.153 MGD.

The 2022 annual average daily organic loading value of 5,567 lbs BOD₅/day is the lowest historical value over the past five years. Slightly higher than the annual average organic loading value, the 2027 projected annual average daily organic loading value is 6,154 lbs BOD₅/day with a projected maximum average of 7,083 lbs BOD₅/day. During the past 5-year period, the monthly average organic loading value hasn't exceeded the organic design capacity of 12,750 lbs BOD₅/day.

All of the projected hydraulic flows and organic loading values are below the NPDES permit limits of 10 MGD and 12,750 lbs BOD₅/day. Given that the actual EDU trends from 2018 to 2022 were used to project future hydraulic and organic loadings, no treatment plant overloads, as defined by the Chapter 94 Regulations, are expected during the next five-year period.

Butler Area Sewer Authority

**Municipal Wasteload Management Report
Operating Year 2022**

Description of System and EDUs Serviced

The Butler Area Sewer Authority (“BASA” or “Authority”) serves the City of Butler, East Butler Borough, Butler, Center, and Summit Townships; as well as a limited number of customers in Connoquenessing, Oakland, and Penn Townships. The 32.5-mile sewer service area contains 23 continuous-duty sewage pumping stations and approximately 230 miles of mainline sewer pipe to serve roughly 15,000 customers. The two-stage biological wastewater treatment plant (WWTP) currently has a permitted hydraulic capacity of 10.0 million gallons per day (MGD) and a permitted organic loading of 12,750 lbs BOD₅/day.

Table 1 presents historic and projected service area populations tributary to the Butler Area WWTP. The population estimates are presented as EDUs to represent contributions from both residential and non-residential sources. The 2018 through 2022 figures are average EDU values based on quarterly and monthly customer billing records. Estimates for the years 2023 through 2027 were projected using the “New EDU” projected value of 48 EDUs/year.

Table 1 Butler Area Sewer Authority Historic and Projected EDU's Serviced	
<u>Year</u>	<u>Average EDUs Served</u>
2018	23,678
2019	23,473
2020	23,108
2021	23,541
2022	23,535
2023	23,583
2024	23,631
2025	23,679
2026	23,727
2027	23,775

Section 1: Hydraulic & Organic Loading Graphs

Figures 1 and 2 illustrate the historic and projected hydraulic and organic loadings at the BASA WWTP from 2018 to 2027. The historic flow and organic loading were obtained through plant operating records and monthly discharge monitoring reports, while the projected data for 2023-2027 was calculated using the PA DEP Chapter 94 Spreadsheet. Please find all supporting data and calculations in Appendix B.

The plant flows are continuously measured by a Parshall flume flow meter located in the effluent channel after the primary settling tanks. Under normal conditions, the metered recirculation flow from the sludge thickener and rotary presses that enter the primary tanks is subtracted from the Parshall flume flow to determine the reported NPDES Permit discharge flow. During 2022, Parts of BASA's sludge thickener and sludge thickener building were being rebuilt making it inoperative. During the sludge thickener shutdown, sludge was diverted to several isolated primary tanks where it was collected for dewatering. Calibration of the recirculation flow meters was unnecessary during that time. BASA did however calibrate the primary effluent Parshall flume flow meter that can be seen attached in Appendix A. With the completion of the sludge thickener project, BASA has returned to annual internal calibrations of all flow meters.

The organic loading values, also known as biological oxygen demand (BOD₅), is collected daily at BASA's WWTP influent auto sampling station. Our operators prepare the composite samples for our subcontracted laboratory, CWM Environmental, to pick up and analyze.

The hydraulic loading graph seen in Figure 1 shows that during 2022, the February Monthly average flow (11.557) exceeded the design capacity for the WWTP. Having the highest total monthly rainfall value of 5.42 inches, February's groundwater saturation and runoff conditions were directly related to the high flow average. Other than the February design flow exceedance, all monthly flows were below the 10 MGD design capacity. As seen in Figure 2, the historical organic loadings have been relatively consistent. Specifically, the monthly average organic loadings seen in 2022 are more balanced than they have been over the previous years. Since neither the hydraulic or organic loading values have been or are projected to be above BASA's WWTP design capacities, the WWTP isn't expected to be hydraulically or organically overloaded as defined under Chapter 94 of the DEP's Rules and Regulations through the year 2027.

Figure 1

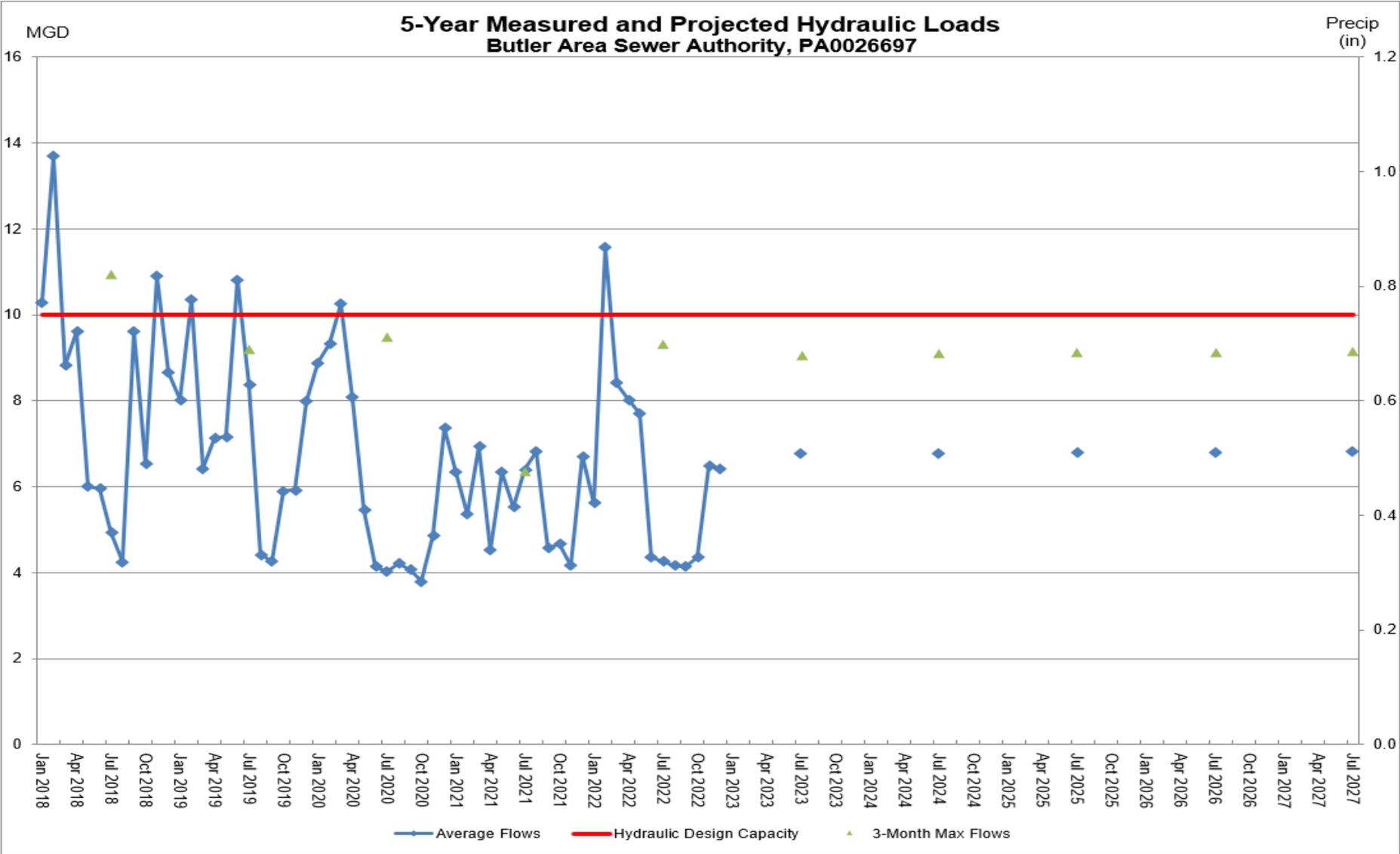
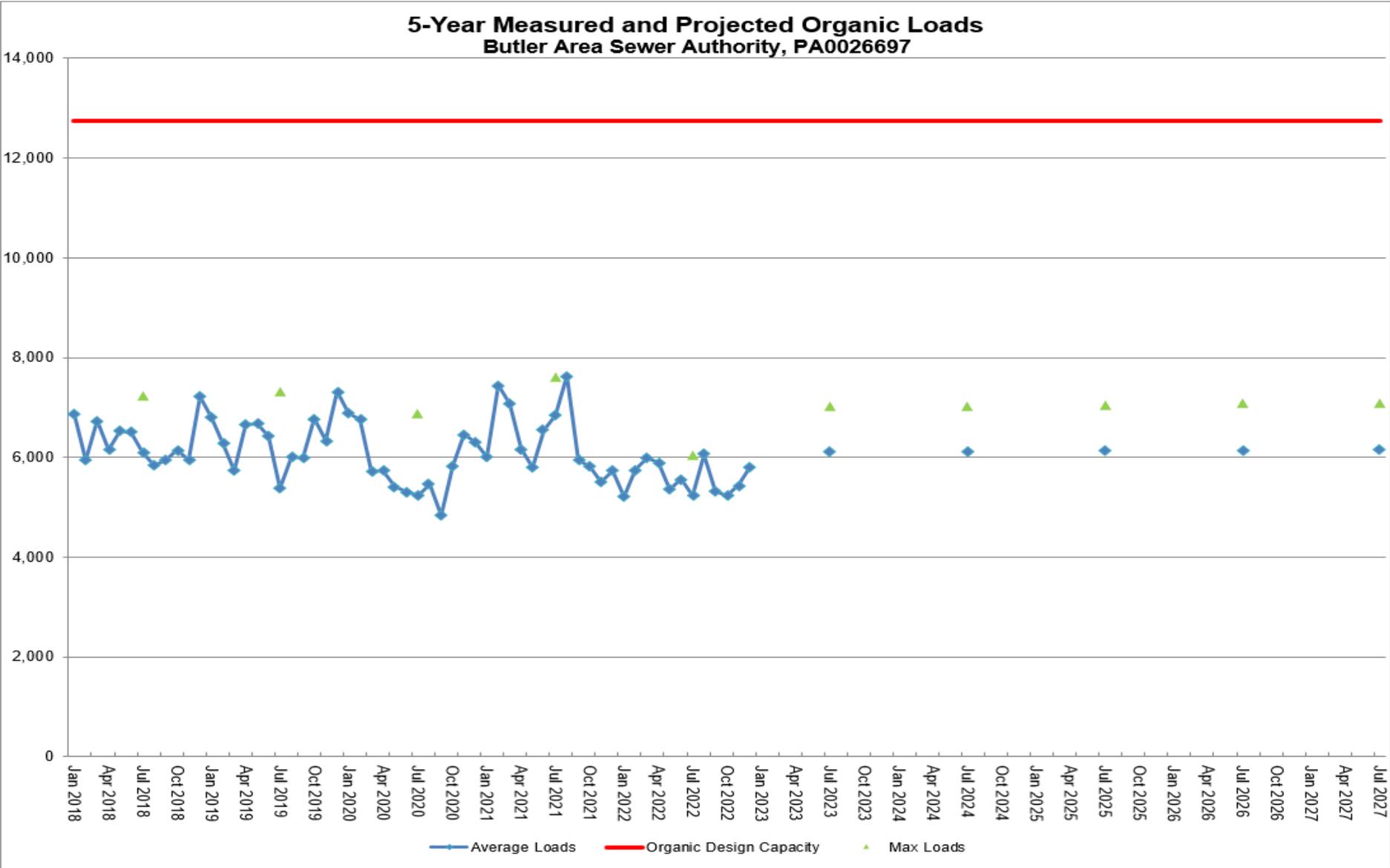


Figure 2



Section 2: Industrial Wastes

A. Permitted Industrial User Summary

The Authority has an EPA-approved Industrial Pretreatment Program governed under the Chapter 400, Industrial Sewer Use Rules and Regulations, that can be accessed through the BASA website. As seen in Table 2 below, the Authority currently has permits with two (2) Categorical Industrial Users (CIUs), two (2) Significant Industrial Users (SIUs), and three (3) Non-Significant Industrial Users (NSIUs) that discharge, or are permitted to discharge, process wastewater.

With the exception of JSP International and Pennsylvania American Water Company's monthly compliance reporting requirements, all other permitted industrial users (IUs) are required to submit quarterly compliance reports. All 2022 compliance reporting was submitted in a timely manner. Only one (1) Notice of Violation (NOV) was issued in 2022 with no permitted users falling into Significant Non-Compliance as defined by 40 CFR § 403.8. The NOV was issued to Pennsylvania American Water Company on January 5, 2023 in response to several wastewater exceedances of their permitted copper limit of 1.84 mg/L in the fourth quarter of 2022. The violations were related to a malfunctioning auto compositor that was used to collect blowoff process wastewater compliance samples from their Aldrich Unit #1 filter. To capture representative samples, PAWC resampled blowoff wastewater from all three of their Aldrich filters using manual composite sampling techniques within the compliance period listed in their wastewater permit. The blowoff wastewater resampling results of the Aldrich filters were under the permitted copper limit, validating that the exceedances were related to the malfunctioning auto compositor on Aldrich Unit #1 filter. As seen in Appendix C, the "PAWC NOV Isolated Copper Exceedance" required PAWC to complete two action items to restore the auto sampling stations as required by their wastewater permit.

Facility inspections and compliance samples were completed for all permitted IUs during the calendar year. Other than a high nickel value on Metalized Ceramics for Electronic's (MCE) batch wastewater, all 2022 compliance samples conducted by the Authority were within the IU's wastewater discharge permit limits. MCE is required by their wastewater discharge permit to properly pretreat the wastewater and verify that the pollutants are within range prior to discharge. MCE's wastewater batch should be discharged sometime in 2023. During inspections, chemical inventory, chemical quantities, chemical locations, hazardous materials, floor drains, production values, process wastewater sources, process

water/wastewater generated, environmental permits, and ERP plans were discussed. In response to a spill prevention suggestion made by the Authority, JSP International installed secondary containment for their chemical drums that are stored near their underground tanks.

B. Unpermitted Industrial User Surveillance

In 2021, the Authority completed an evaluation of its non-permitted IUs to gain an understanding of their industry type and their wastewater characteristics. Company background research was completed on nineteen IUs. Based on the results of the research, wastewater surveys and onsite inspections were completed where needed. As a follow-up, in 2022, the Authority received a requested wastewater survey from Wise Business Forms, Inc., inspected the United Plate Glass facilities and issued baseline wastewater sampling requirements to Belleville International for a new hydro-metal cutting machine that they had plans to install. To date, the Authority is gaining more information on the IUs previously mentioned to determine if future wastewater regulations or permits are necessary.

C. WWTP Interference

Beginning in August 2022, BASA operators reported intermittent events where chlorine demand would drastically drop, and chlorine residual would rise. Typically, the chlorine residual changes would be seen during storm events where WWTP flows were higher. In an effort to identify the treatment abnormality, a continuous read pH meter was placed at our Karns Crossing Pump Station that is associated with the majority of our industrial sector, collection system ammonia and BOD-5 samples were taken at various points, and a review of the SCADA system and historical pollutant trends was completed to look for correlations with the chlorine demand events. BASA operators reported that the events ceased in November and chlorine demand became normalized. It is theorized that the decreases in chlorine demand were caused by sudden halts in organic/inorganic loading that may be associated with an unknown pollutant.

Table 2
Butler Area Sewer Authority
2022 Permitted Industrial User List

Categorical Industrial Users (CIUs)			
JSP International, LLC	150 East Brook Land Butler, Pa 16002	Permit Number: 1224012	Average Process Flow: 27,954 gpd
Metalized Ceramics For Electronics	119 Grant Avenue East Butler, Pa 16029	Permit Number: 0927014	Total Flow: Two 95-gal batch discharges in 2022 (190 gal)
Significant Industrial Users (SIUs)			
Cleveland Cliffs Steel Corporation	210 Pittsburgh Road Butler, Pa 16001	Permit Number: 1123011	Average Process Flow: Zero Discharge
Pennsylvania American water Co.	207 Oneida Valley Rd. Butler, Pa 16001	Permit Number: 1127005	Average Process Flow: 27,692 gpd
Non-Significant Industrial User (NSIU)			
Linde Gas North America, LLC	Inside Cleveland Cliffs Facility	Permit Number: 0521006	Average Process Flow: 4,690 gpd
Air Products and Chemicals	300 Schaffner Road Lyndora, Pa 16045	Permit Number: 0827009	Average Process Flow: 7,811 gpd
IDL Worldwide	500 Grant Avenue East Butler, Pa 16029	Permit Number: 0727019	Average Process Flow: 138 gpd

Section 3: Sewer Extensions

Beginning in 2021 and continuing to the current date, on this report there are four active sewer extensions under construction including: Autumn Woods, Highfield Trails, Forest Oaks, and Top Tier Federal Credit Union. The Authority received and reviewed five (5) Sewage Facilities Planning Module Applications for new land development/subdivision plans in 2022 with a total of 9 DEP EDUs, based on 400 gpd/EDU, proposed to be added to the Authority’s sewer system. As for the other EDUs, outlined in Table 3, those respective planning modules were completed in prior years and are now being constructed. A map concerning the proposed land development/subdivision plans can be found in Appendix D. At this time, it is unclear when some of the development will take place.

Table 3 Butler Area Sewer Authority 2022 Planning Module Applications		
Project Name		Proposed DEP EDU's
Highfield Trails	Phase #1	76
	Phase #2	24
Duffy Highlands	Phase #1	5
	Phase #2-4	81
Autumn Woods		95
Diehl Volkswagen		17
Modwash Car Wash		18
East Butler Condominiums		6
Forest Oaks		87
Butler Chicken LLC - Popeyes		4
Gilliand Subdivision		1
Spencer Geibel Funeral Home		1
Taco Bell		2
Top Tier Federal Credit Union		1
Total Proposed EDU's		418
*1 DEP EDU = 400 gal/day		167,200 gal/day

Section 4: Sewer System Monitoring and Rehabilitation

The Authority continually makes a proactive effort to sustain the sewer system by reducing inflow and infiltration (I/I) and/or by making necessary repair or replacement of the existing infrastructure. Necessary inspection and maintenance of the sewer system is performed as required by a field supervisor and four sewer crew operators. When called upon, they are assisted by two additional general sewer crew positions. To ensure that adequate material selection and installation practices are taking place, new service lateral lines are inspected. Maintenance tasks performed by the crew include: isolated point, manhole, force main and service lateral repairs, as well as cleaning and flushing of mainline collection systems at 102 set locations or as needed. In addition, the Authority dedicates two full-time employees to tend to the 23 continuous-duty, sewage pump stations (hereinafter referred to as PSs) found throughout the collection system. During 2022, the Authority received and responded to a total of 187 sewer calls regarding the public or private sewer collection system and inspected 379 manholes. Of the manhole inspections, 205 were completed by internal staff. The following equipment is utilized for normal sewer inspection and maintenance:

- Two (2) 2023 Ford Rangers
- 2023 Polaris Ranger SP 570 side-by-side
- 2022 Transit Van
- 2021 Western Star 4700 ECO 900 Combination Truck
- 1997 Ford Louisville LT8501 Vactor Truck
- 2011 International Model 4400 5-ton dump truck
- 2011 Ford-450SD 1.5-ton dump truck
- 2011 Ford E-350 sewer televising van (Aries Pathfinder line camera system)
- 2011 Kubota KX121R3TA compact excavator
- 2019 Ford Transit Van (Dye Test 1)
- 2001 Viking Dye Testing Trailer
- 2001 Forest River Enclosed TV Trailer
- 2011 Viking (14,000-pound GVWR) equipment trailer
- 2000 John Deer 310SE backhoe
- Godwin Dri-Prime NC150 trailer-mounted 6-inch pump
- Seven (7) RIDGID 200-foot Mini-See Snake color sewer camera and reel systems
- Four (4) Navitrak locators
- 2012 Ford F-350 Service Body Truck (Pump Stations)

A. I/I Identification and Repair

During 2022, BASA pursued I/I identified in a previous flow study within Sewer Shed #25 that collects and delivers wastewater flow to Cupps PS; initiated or resolved various I/I related projects identified across the collection system; invested in new I/I tracking software; and continued our realty inspection program. Some of the major projects that were either initiated or resolved include sewer shed #25 I/I manhole and mainline investigation and repair, Hansen Ave & Whitestown Rd. sewer collection system upsizing and rerouting improvements; Coleen and James Street cured in place pipe (CIPP) lining repair, Kerry Drive mainline pipe bursting replacement.

As discussed in Section 5.B of the 2021 Chapter 94 Report, four flow meters were placed into Sewer Shed #25, associated with the Cupps Pump Station collection area, in November of 2021 and remained there until January of 2022. The flow meter data, along with past closed-circuit television (CCTV) reports, allowed BASA to identify general I/I areas of interest. Using the North Hills Council of Government pricing, BASA created Contract 2022-4 with State Pipe Services to address the I/I identified by the flow study. A total of 10,151 feet of mainline sewer was CCTV'd and 157 manholes were inspected. Based on the findings of the mainline investigative work, 5 spot repairs were rehabilitated using CIPP lining and 84 feet was replaced by open cut trench techniques. A total of 67 manholes were found to be either structurally deficient or had I/I related problems. In both cases, the manholes were rehabilitated using grouting techniques.

Spurred by historical sanitary sewer overflows (SSOs) from Manhole #1002 and the age of the infrastructure found at Hansen Ave. and Whitestown Rd., the Authority requested that Hatch Engineering perform a hydraulic analysis of the area and devise a plan to correct the issues. Hatch provided a plan to CIPP several sections of mainline adjoining to manhole #1002, move an existing manhole, install four (4) new manholes, and install 360 ft of upsized mainline sewer to promote steady flow and increase the capacity of the localized system. To conjoin with Butler Township's intersection improvements project, BASA has plans to begin construction sometime in 2023.

Sewer mainline segments in close proximity to Coleen and James Street, as well as Kerry Drive were identified while performing general maintenance as needing either mainline pipe repair or replacement due to both structural and maintenance related deficiencies. When determining if remediation or replacement efforts should be used, the pipe severity, as well as the number of customers serviced, factored into the Authority's decision. James and Coleen Steet service roughly 15 and 54 households, respectively; while Kerry Drive

services approximately 1,123 households between three separate sewer sheds and two pump stations. The Authority decided to rehabilitate a total of 800 feet of mainline sewer between Coleen and James Street using NOVAFORM CIPP Liner. The work was contracted through Synder Environmental Services and was completed in December of 2022. The severity of Kerry Drive's 12-inch mainline sewer and its corresponding upstream and downstream manholes lead to the Authority decision to have State Pipe Service's pipe burst 400 ft of the mainline and replace the deteriorating manholes.

Historically, the Authority has relied on 4-6 SIGMA/HACH 950 portable open channel flow monitors to conduct our I/I flow studies around the collection system. Although they advanced our understanding of I/I locations, they are not optimal for several reasons including: lengthy setup times, need to enter manhole during installation, requirement to visit the site to extract data, intermittent periods of inoperability from low flows or debris buildup, and variability of data interpretation. For these reasons, BASA turned to Eastech Flow Controls (Eastech) to provide us with ultrasonic flow level devices that would aid in the successful and timely pursuit of I/I.

With the highest amount documented SSOs, Sewer Shed #13 associated with the Greenwood PS and our 2019 Corrective Action Plan was the first area that BASA chose to study with the iTrackers. A total of 10 iTrackers were placed into the sewer shed mainline branches in September of 2022. Similar to a virtual hydraulic model, the ultrasonic micro-detection units display a time lapse video of water levels at each location to provide a visual representation of what the collection system is experiencing during a storm event. At this time, BASA is evaluating the iTracker's performance to see if they meet the needs discussed above. Aiding in the decision-making process, the iTracker software is to notify the user of I/I, blockage, or hydraulic-related problems through indicator features. As of the fourth quarter 2022, the Authority has experienced several product-related issues that have stunted the progress of the flow study. At this time, the Authority is awaiting an iTracker software update that should enable them to effectively transfer their data. Should future problems arise, the Authority may pursue alternative methods to identify I/I.

The Authority's on-going realty inspection program is led by a program supervisor with a four-person sewer crew to proactively identify inflow and infiltration stemming from leaking lateral lines, sump pumps, downspouts and stormwater drainage through the use of closed-circuit television inspections and dye testing. Under this program, the property owner must repair or replace any sources of inflow and infiltration prior to the ownership transfer of the home. In 2022, 550 realty inspections were completed. 319 inspections

passed, while 231 failed. Of the 231 failures, 188 have completed the repairs and received a document of certification by the Authority.

B. Collection System Repair, Replacement, or Upgrades

Six major system repair, replacement, or upgrade projects were initiated wholly or in part by BASA during the previous calendar year. They include: the Karns Crossing Bridge mainline relocation and replacement, Alameda Upsizing, Shockey Property and Volkswood Dr. stabilization, Butler Memorial Park relocation, and Delwood Rd. Manhole Raising projects.

BASA was approached by PennDOT to inform us of their intent to demolish and rebuild the 12-span Karns Crossing Bridge and Twin-Cell Arch Culvert that are found southwest of the Benjamin Franklin Highway - Route 422 on Chicora Rd. – Route 68. The new Karns Crossing Bridge will be relocated to the east of the existing location impacting BASA’s 24-inch mainline interceptor that leads directly to the Karns Crossing Pump Station. PennDOT’s contractor will be abandoning the existing sewer and installing approximately 600-linear feet of new sanitary sewers with four (4) “type 5” manholes. BASA has entered a cost share agreement with PennDOT where PennDOT and BASA will be responsible for 75% and 25% of the costs of installation, respectively. The project is projected to be put out for bid in May of 2023.

Based on our Act 537 Sewage Facilities Planning Study, the Authority assisted by Hatch Engineering, determined that a portion of our mainline interceptor found within our Sullivan Run sub-basin known as Alameda is to be upsized both to accommodate future growth and to assist with required hydraulic capacity during rain events. Approximately 2,050 linear feet of existing mainline gravity sewer will be upsized from 8-inch to 12-inches in diameter. A separate mainline gravity sewer section spanning 1,150 linear-feet will be upsized from 12-inch to 15-inch in diameter. Additionally, Manhole #6020 found at the intersection of two contributing collection lines that feed the Alameda mainline interceptor will be relocated to promote hydraulics. At this time the project is anticipated to be completed in 2023.

While conducting day-to-day operations, three separate areas were identified that had exposed mainline gravity sewer sections caused by stream bank erosion. The areas include: Shockey Property south of 140 New Castle Road, 106 Volkswood Dr., and Butler Memorial Park. The Shockey property had approximately 40 linear feet of 8-inch mainline sewer exposed along a stream bank. The severity, location, and age of the mainline required both

encasement and internal CIPP lining to stabilize and reinforce the infrastructure. In the case of 106 Volkswood Dr., all but the very base of Manhole #6617 were exposed to a small stream in a wooded area of BASA's collection system. Both Shockey Property and Volkswood Dr., BASA used outside contractors to complete the restoration work in the third quarter of 2022. The Shockey property exposed mainline was concrete encased and 453 ft was lined using CIPP. The Butler Memorial Park project location is to the south of State Route 422 and Northwest of Butler Memorial Park. Having both a 12 ft manhole and 100 linear feet of 8-inch mainline completely exposed with little to no component bedding, Butler Memorial Park's restoration project is 2022s most severe case of collection system deterioration caused by stream erosion. To correct the problem, BASA is working to obtain new easement so that the mainline and manhole can be relocated out of the stream bank. Instead of using the aged infrastructure, a total of 300 linear feet of new 8-inch mainline pipe and one new manhole will be used. The old infrastructure will be properly decommissioned once the project is complete. The project is expected to take place sometime in 2023.

C. WWTP Repair, Replacement, or Upgrades

As part of BASA's continual five-year capital plan, new or on-going WWTP projects were initiated or completed during the past calendar year. Preceding projects from 2021 include the sludge thickener repair and SCADA system upgrade. Projects beginning in 2022 consist of the trickling filter retaining wall, chlorine contact tank, primary tank no. three (3), and reactor clarifier no. three (3) steel flow channel repairs and rebuilds.

Deterioration of the sludge thickener and parts of the sludge thickener building led to the repair/replacement of sludge thickener equipment, ventilation and lighting and roof drain equipment. Specifically, the sludge thickener existing walkway and center platform was rebuilt. A new motor, mechanical rake, control panels, and Davit crane was installed. Ray Showman, Jr., Excavating and Bronder Technical Services completed the general contract and electrical work in September of 2022.

BASA contracted Process and Data Automation, LLC to assist with a total WWTP and remote PS SCADA system upgrade. The intent of the project was to replace the existing obsolete SCADA system and provide the Authority with full on-site control and off-site monitoring of the WWTP and PSs. Beginning in 2020, the SCADA system upgrade project was broken down into three (3) phases. Phase no. one (1) dealt with the replacement of the existing plant SCADA and the installation of fiber was completed in 2021. Phase no. two (2) is currently underway and involves the upgrade of controls at the WWTP, the

development of ignition screens for both the WWTP and remote pump stations, and the commissioning of all upgraded site control and SCADA systems. Phase three (3) is primarily focused on upgrading remote PS Programmable Logic Controllers and adding the Links PS to the SCADA.

The trickling filter retaining wall, chlorine contact tank, primary tank no. three (3), and reactor clarifier no. three (3) steel flow channel repairs and rebuilds projects that were initiated in 2022 were top priority due to aging infrastructure found on each of the treatment systems. Aside from the trickling filter effluent retaining wall demolition/construction and the chlorine contact tank sluice gate valve replacements that are contracted through Troy Jay Construction and Total Equipment, respectively; BASA staff are responsible for the rebuild of primary tank no. one (3) and reactor clarifier no. three (3). Since the closure of 2022, the trickling filter's effluent retaining wall has been constructed; and new racks, chains, and sprockets have been installed on primary tank no. three (3). The five-year progressive plan includes: rebuilding the mechanical items on the remaining four (4) primary tanks, the replacement of several chlorine contact tank sluice gate valves, and reinforcement of the existing square chlorine contact tank.

Section 5: Pump Stations

Appendix E presents the location of the Authority's 23 continuous-duty sewage PSs and four (4) wet weather diversion PSs within the sewer service area. A SCADA monitoring system provides operating/alarm status, pump run times, and flows for the majority of the PSs. The PSs are routinely checked and maintained during normal weekdays by two dedicated PS operators. Additional operations and maintenance personnel are available and on-call to respond to alarm conditions detected by the SCADA monitoring system and perform scheduled preventative maintenance.

Table 4 lists the name and year each PS was originally constructed, design average capacity, estimated 2022 annual average daily flow, estimated percent utilization of the design average capacity and the projected 2-year maximum flows. The design capacity of each station was calculated by dividing the design peak flow capacity reported in the design modules for each PS by a design peaking factor of 2.5. The 2022 average daily flow for seventeen (17) PSs was determined by actual flow meter data; one (1) PS used both actual pump station hours and actual flow data, three (3) PSs are based off of actual pump hours, one (1) uses estimated flows from a small amount of homes, and one (1) relies upon pump power usage. The Authority's historic five-year average annual flows for each PS historic five-year EDU values and future EDUs were used to calculate the 2024 projected daily flows. Similar to the method used to project the WWTP flows, the "New EDUs" flow (0.0138 MGD) taken from the Chapter 94 Spreadsheet was added to each PS for each future year. The difference between the two calculation methods is that a percentage of the "New EDUs" flow, rather than the whole "New EDUs" flow, was applied to the individual PSs five-year average annual flow. The percentage was based upon the individual PSs five-year average annual flow contribution.

Although the projected average 2024 daily flow value for all the PSs are all within the design capacity listed for each PS, wet weather events, the possibility of incoming development, and aging infrastructure has spurred the need for repair, replacement, and/or an increase in design capacity at Rocklick, Greenwood, Benbrook, Bryson, Fisher Heights, Brewster and Brewster Booster PSs. See the following sections for further details concerning the repair, replacement and increase in design capacity at these locations:

**Table 4
Butler Area Sewer Authority
Actual/Estimated 2022 and Projected 2024 Pump Station Flows**

Pump Station	Year Built	Design Capacity		Estimated Average 2022 Daily Flow (GPD)	Estimated Average Percent Utilization	Projected Average 2024 Daily Flow (GPD)
		(GPM)	(GPD)			
* Brewster Road	1979-80	600	345,600	114,834	31.30%	179,522
* Brewster	1979-80	600	345,600	116,702	27.00%	147,475
* Bryson Road	1979-80	500	288,000	199,100	79.10%	235,783
* Center Avenue	1963	300	172,800	59,119	35.30%	96,987
* Cupps Road	1979-80	400 (1) 700 (2)	576,000	318,823	53.00%	382,914
* Deshon	1980	1,750 (2)	2,016,000	1,195,322	55.60%	1,382,895
* Diamond Street	1975	100	57,600	27,333	37.40%	25,577
* Fisher Heights	1979-80	250	144,000	20,832	10.40%	30,849
* Greenwood	1979-80	500	288,000	167,563	78.50%	194,654
* Karns Crossing	1979-80	1,800 (2)	2,073,600	684,496	33.20%	743,268
* Monroe Street	1979-80	2,250 (2)	2,592,000	1,257,594	48.70%	1,413,263
* Negley Avenue	2018	420	241,920	85,182	35.20%	99,433
* Northvue	1979-80	280	161,280	6,015	3.00%	7,133
* Rock Lick	1979-80	550 (1) 1,050 (2)	892,800	369,335	37.60%	411,602
* Zeigler Avenue	2016	150	86,400	12,708	13.00%	13,105
* Sugar Creek	2005	80	46,080	2,402	3.20%	2,955
* Township Line	1999	90 (2)	86,400	27,988	30.10%	33,900
∞ Pullman Center	2010	65	12,000	1696	6.90%	2,259
◦ Benbrook Road	1979-80	500	288,000	90,652	18.80%	114,382
◦ Garden Grove	1972	320	184,320	58,086	11.80%	64,974
◦ September	1988	75	43,200	4,641	6.90%	4,553
+ Links	1991	30	2,450	530	21.60%	532
◇ Foxcroft	2004	40	23,040	6,878	23.50%	9,058

* Based on flow metering data

∞ Based on pump operating hours and flow metering data. Meter was installed in March of 2022

◦ Based on actual pump operating hours

+ Based on estimated flow from four existing homes (133 gpd/home)

◇ Based on kilowatt hours

A. Rocklick Pump Station Repairs

Provoked by the aging infrastructure found at our Rocklick PS, as well as two mainline breaks that occurred in March and August of 2021, the Authority has consulted with Herbert Rowland & Grubic, Inc. to provide plans to restore the facility. Restoration of the facility includes an in-kind replacement of discharge piping, fittings, and appurtenances in the dry well; installation of a permanent bypass connection that will be used during a planned force main replacement; and to accommodate for a magnetic flow meter. Utility Contracting, Inc. of Youngstown Ohio is currently under contract to complete the work sometime in 2023-2024.

B. 2019 Corrective Action Plan (CAP):

In accordance with the DEP's Chapter 94 Regulations, the Authority submitted the 2019 Corrective Action Plan (CAP) on March 11, 2019 to the DEP to assess and address the recurring wet weather sanitary sewer overflows (SSOs) during the 2018 record rainfall year that were associated with several of the Authority's sewage PSs. The DEP formally approved the plan on March 26, 2019. Two revised CAP plans, "RCAP" and "R2CAP", were approved on February 22, 2021 and June 2, 2022, respectively. The CAP plans outline specific tasks to assess the causes of the SSOs and determine the necessary corrective actions to reduce the overloaded conditions and/or to provide the additional capacities, if necessary, to accommodate the hydraulic overload conditions and eliminate the SSOs. A Connection Management Program to limit and/or control new connections to these overloaded pump stations was also included as part of the CAP.

The six (6) PSs outlined in the CAP include: Fisher, Brewster, Brewster Booster (FBB) located in the northwest portion of the collection system and Greenwood, Benbrook, Bryson (GBB) found on the western edge. Apart from the two different locations in the collection system, FBB and GBB are similar in that the three PSs associated with each system directly influence one another in the respective order that they are listed.

The Authority hired HRG to assist with the design evaluation, sewage facilities planning, design and permitting, and bidding and construction services. It was determined that all PSs, with the exception of the Benbrook PS located in the GBB system, would be upgraded and designed to allow for additional capacity. Benbrook PS will be hydraulically downgraded and will only except wastewater flow from 5-6 households via gravity sewer line. Apart from Benbrook PS, all other PSs will be upgraded to include new submersible and immersible pumps with higher flow capacity ratings, pump control systems, magnetic

flow meters, valve vaults, wet or modified dry wells, bypass connections, discharge and force main piping, trash baskets, and cranes. To allow for additional storage capacity, Fisher Heights, Brewster, and Greenwood PS will have individual above or below-ground equalization tanks installed. The three pump stations previously mentioned will also be equipped with Duperon dual auger systems to remove excessive rags/debris.

As of the Fourth Quarter 2022, design evaluation (phase 01 & 02) and sewage facilities planning (phase 03) are complete. BASA has authorized and HRG has begun with design (Phase 04), permitting (Phase 05), and land acquisition (Phase 06). As part of design (Phase 4) and permits (Phase 5), HRG has completed all survey work, produced 30% design drawings, and concluded final wetland investigations. BASA has maintained compliance with the CAP requirements and intends to follow the schedule seen in Appendix F.

D. Pump Station Data

To improve the accuracy of our PS flow records, BASA began a flow meter standardization project in 2021. Prior to the initiative, our twenty-three continuous-duty PSs were gathering flow data using five (5) different types of wastewater meters, pump run times, and electricity usage. The aim of the project was to only use magnetic flow meters where applicable. Magnetic flow meters were chosen as the standard; because historically, they have proven that they require less maintenance and provide accurate wastewater flow readings. By the end of 2022, ten (10) PSs now have magnetic flow meters. Magnetic flow meter installations at Northvue, Rocklick, and Garden Grove will be completed by internal staff. To the contrary, Rocklick, Fisher Heights, Brewster, Brewster Booster, Greenwood Drive and Bryson PS;s flow monitors will be changed to magnetic flow meters by contractors during the time of the PS upgrades. Due to the current layout or minimal amount of wastewater flow that is conveyed, the Cupps, September Drive, Foxcroft, Links, and Benbrook PS will not have magnetic flow meters installed. Please see Table 5 below for an overview of the PS flow meter replacement schedule.

In unison with the flow meter standardization project, the Authority is having its supervisory control and data acquisition (SCADA) system updated by an outside contractor called Process and Data Automation. As referenced in Section 5.C of this report, Phase two (2) deals with the development of ignition screens for both the WWTP and remote pump stations, and the commissioning of all upgraded site control and SCADA systems. Phase three (3) is primarily focused on upgrading remote PS Programmable Logic Controllers and adding the Links PS to the SCADA. The new SCADA system will track real-time flows

from the magnetic flow meters as they are replaced and will provide the ability to create flow meter reports. Currently, BASA is reliant upon field staff to gather the flow data from data loggers at each of the PSs. The data is then manually processed and reported. The current method is time consuming and can be problematic when periodic PS flow monitoring or data logging errors occur. Once the SCADA system is operational, the data will be stored in two locations lessening the chance of data loss.

Table 5 Butler Area Sewer Authority Pump Station Flow Meter Replacement Schedule			
Pump Station	Meter Model	Meter Replacement Priority	Tentative Replacement Year
Northvue	FL1500	#1	2022-2023
Rocklick	SIGMA2410	#2	2023-2024
Garden Grove	No Meter	#3	2023-2024
Fisher Heights	FL1500	#4	2024-2025
Brewster Road	FL1500	#5	2024-2025
Brewster Booster	FL1500	#6	2024-2025
Greenwood Drive	FL1500	#7	2025-2026
Bryson	FL1500	#8	2025-2026
Center Avenue	Toshiba Mag	⊙	-
Diamond Street	Toshiba Mag	⊙	-
Sugar Creek	Toshiba Mag	⊙	-
Negley Avenue	Toshiba Mag	⊙	-
Zeigler Avenue	Toshiba Mag	⊙	-
Monroe Street	Toshiba Mag	⊙	-
Deshon	Toshiba Mag	⊙	-
Karns Crossing	Toshiba Mag	⊙	-
Township Line	Toshiba Mag	⊙	-
Pullman Center	Alternative Mag meter	⊙	-
Cupps	SIGMA 950	^	-
September Drive	No Meter	^	-
Foxcroft	No Meter	*	-
Links	No Meter	*	-
Benbrook Road	No Meter	*	-
⊙	Complete		
^	Current Layout doesn't allow for Mag Meter installation.		
*	Mag Meter not required.		

Section 7: Solids Management Inventory:

The BASA WWTP generates sludge from our primary and secondary sedimentation tanks, as well as our final clarifiers. The waste sludge/solids flows are combined and thickened in a single, gravity sludge thickener. The thickened sludge solids are dewatered using a rotary press and chemically stabilized with powdered/granular quicklime. Finally, the lime stabilized/dewatered biosolids are hauled to a permitted sanitary landfill for disposal. All lime-stabilized, dewatered sewage sludge generated by the Butler Area WWTP in 2022 was transported to Carbon Limestone Landfill in Lowellville, Ohio. As seen in Table 6, a total of 5,076 wet tons or 1,425 dry tons of lime stabilized, dewatered biosolids were taken to Carbon Limestone Landfill via DBA Republic Services of Youngstown.

Table 6 Butler Area Sewer Authority 2022 Sludge Production and Disposal					
Month		Total Sludge Produced/ Landfilled (Wet Tons)	Monthly Average Dry Solids (% Solids)	Total Sludge Production (Dry Tons)	Total Sludge Production (Dry Metric Tons)
January	*	409.75	27.16	110.26	100.03
February	*	314.51	29.44	93.23	84.58
March	*	438.76	26.52	116.5	105.69
April	*	541.94	25.54	138.69	125.82
May	*	486.61	24.55	121.26	110.01
June	*	613.89	27.62	169.15	153.45
July	*	452.89	26.46	119.02	107.97
August	*	389.87	32.13	125.02	113.42
September	*	346.92	33.34	115.1	104.42
October	*	352.03	30.76	108.36	98.30
November	*	374.3	29.79	110.86	100.57
December	*	354.77	27.52	97.72	88.65
Total	*	5,076.24	----	1,425.17	1,292.89
Average	*	423.02	28.40	118.76	107.74
* Contract No. 2020-04 with Browning-Ferris Industries of Ohio, Inc, dba Republic Services of Youngstown, Carbon Limestone Landfill, Lowellville, OH					

Signature Requirements

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).

Duane E. McKee
Name of Responsible Official

Duane E. McKee
Signature

724-282-1978
Telephone No.

02/22/2023
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).

Mason Miller
Name of Responsible Official

Mason Miller
Signature

724-282-1978 Ext 120
Telephone No.

02/22/2023
Date

Appendix A

Supporting Data

2022 Plant Flow Meter Calibration Work Orders

Calibration Certification

Equipment ID	<u>FIT 101-01 MAIN INFLUENT Level Radar Transmitter</u>	Site	<u>BASA</u>
Type Of Meter	<u>on Flume</u>	Location	<u>Influent Flume FIT 1</u>
Manufacturer	<u>Vega</u>	Unit Status	<u>Active</u>
Model No.	<u>Puls C 21 w/ MET841</u>	Techician	<u>Dewayne Fritz Eric Ryan</u>
Size/ Range	_____		
Cal. Date	<u>5/19/2022</u>	Frequency	<u>Annual</u>
Due Date	<u>5/2023</u>	Visual Codition	<u>Looks New</u>

Remarks Looks Good/Steady

Input Type
 Physical, Signal or Both Physical Verified

Output Type
 Physical, Signal or Both Signal Verified

Equipment Used
Tape measure and Pde

Equipment Used
Sensor Sim.

% Error Found <.5%
 Adjustment : YES NO
 % Error Post _____

% Error Found <.5%
 Adjustment : YES NO
 % Error Post .08

Notes:

Notes: no notes

Calibrator Signature Dewayne Fritz / Eric Ryan Date 5-19-2022

Appendix B

Supporting Data
2022 Loading Calculation

Amended Appendix A-20-c



PADEP Chapter 94 Spread: Sewage Treatment PI

Reporting Year:

Facility Name:

Permit No.:

Persons/EDU:

Existing Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: lbs BOD5/day

Upgrade Planned in Next 5 Years? Year:

Upgrade Planned in Next 5 Years? Year:

Future Hydraulic Design Capacity: MGD

Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2018	2019	2020	2021	2022
January	10.285	8.028	8.894	6.335	5.628
February	13.896	10.357	9.328	5.385	11.557
March	8.821	6.438	10.251	6.931	8.4
April	9.599	7.137	8.064	4.517	8.023
May	6.005	7.184	5.459	6.342	7.71
June	5.962	10.818	4.132	5.523	4.354
July	4.932	8.389	4.02	6.398	4.268
August	4.26	4.416	4.213	6.827	4.17
September	9.6	4.261	4.076	4.582	4.132
October	6.534	5.899	3.811	4.675	4.351
November	10.909	5.92	4.883	4.174	6.481
December	8.864	7.977	7.364	6.709	6.437

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

Month	2018	2019	2020	2021	2022
January	6,883	6,803	6,883	6,002	5,215
February	5,949	6,284	6,767	7,440	5,753
March	6,728	5,734	5,717	7,087	5,985
April	6,161	6,656	5,734	6,166	5,891
May	6,522	6,683	5,408	5,789	5,347
June	6,496	6,426	5,314	6,558	5,557
July	6,095	5,388	5,232	6,839	5,223
August	5,840	6,009	5,465	7,625	6,052
September	5,932	5,990	4,841	5,939	5,322
October	6,148	6,782	5,819	5,815	5,231
November	5,938	6,338	6,458	5,498	5,434
December	7,223	7,311	6,304	5,742	5,799

Annual Avg	8.272	7.232	6.206	5.698	6.292
Max 3-Mo Avg	10.934	9.2	9.491	6.355	9.327
Max : Avg Ratio	1.32	1.27	1.53	1.12	1.48
Existing EDUs	23,678.0	23,473.0	23,108.0	23,541.0	23,535.0
Flow/EDU (GPD)	349.4	308.1	268.6	242.0	267.3
Flow/Capita (GPD)					
Exist. Overload?	NO	NO	NO	NO	NO

Annual Avg	6,325	6,367	5,829	6,373	5,567
Max Mo Avg	7,223	7,311	6,883	7,625	6,052
Max : Avg Ratio	1.14	1.15	1.18	1.20	1.09
Existing EDUs	23,678	23,473	23,108	23,541	23,535
Load/EDU	0.267	0.271	0.252	0.271	0.237
Load/Capita					
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2023	2024	2025	2026	2027
New EDUs	48.0	48.0	48.0	48.0	48.0
New EDU Flow	0.0138	0.0138	0.0138	0.0138	0.0138
Proj. Annual Avg	6.754	6.7678	6.7816	6.7954	6.8092
Proj. Max 3-Mo Avg	9.079	9.097	9.116	9.134	9.153
Proj. Overload?	NO	NO	NO	NO	NO

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

	2023	2024	2025	2026	2027
New EDUs	48	48	48	48	48
New EDU Load	12,460	12,460	12,460	12,460	12,460
Proj. Annual Avg	6,105	6,117	6,129	6,142	6,154
Proj. Max Avg	7,026	7,040	7,055	7,069	7,083
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2018	2019	2020	2021	2022
January	5.09	2.67	3.48	2.19	2.54
February	6.61	3.75	3.65	2.88	5.42
March	3.6	2.81	5.71	3.05	3.65
April	4.02	3.97	4.08	2.55	4.04
May	4.66	5.92	2.52	5.68	4.66
June	5.06	7.94	2.8	4.16	4.13
July	2.53	6.11	3.23	6.06	5.4
August	3.59	2.92	5.38	6.52	3.17
September	9.83	3.13	1.78	3.62	3.76
October	4.82	6.39	3.23	4.62	3.12
November	4.87	1.84	3.06	1.94	5.06
December	5.06	3.75	5.64	5.79	2.36

Appendix C

PAWC NOV Isolated Copper Exceedance

BUTLER AREA SEWER AUTHORITY

100 LITMAN ROAD • BUTLER, PA 16001-3256

(724) 282-1978 • FAX (724) 282-7656

www.basapa.org

December 27, 2022

Mr. Stephen Straub
Supervisor, Water Quality & Environmental Compliance
Pennsylvania American Water Company
1909 Oakland Avenue
Indiana, PA 1127005

Dear Mr. Straub:

**RE: NOTICE OF VIOLATION
INDUSTRIAL WASTE DISCHARGE PERMIT NO. 1127005**

In accordance with the terms and conditions of the Butler Area Sewer Authority's Rules and Regulations Governing Industrial Sewer Use, the requirements of the Federal General Pretreatment Regulations (40 CFR Part 403), and Industrial Waste Discharge Permit No. 1127005, Pennsylvania American Water Company is hereby issued the enclosed Notice of Violation for three exceedances of the maximum copper concentration limit.

Very truly yours,

BUTLER AREA SEWER AUTHORITY



Mason Miller
Pretreatment Coordinator

Enclosure (1)

**BUTLER AREA SEWER AUTHORITY
100 LITMAN ROAD, BUTLER, PA 16001-3256**

NOTICE OF VIOLATION

ISSUANCE TO:

PENNSYLVANIA AMERICAN WATER COMPANY
207 Oneida Valley Road
Butler, PA 16001

LEGAL AUTHORITY

This Notice of Violation pursuant to § 400-6.05 of Butler Area Sewer Authority's (hereinafter, the "Authority") Rules and Regulations Governing Industrial Sewer Use is based on findings of violation of the conditions listed in Industrial Waste Discharge Permit No. 1127005.

FINDINGS

Pennsylvania American Water Company (PAWC) was issued Industrial Waste Discharge Permit No. 1127005, which contains prohibitions, restrictions, and numerical limits on the quality and quantity of the wastewater discharged to the public sanitary sewer system.

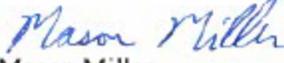
In accordance with "Table 1" found within the Industrial Waste Discharge Permit, the maximum allowable copper concentration is 1.84 mg/L. Based on PAWC's compliance report dated December 19, 2022, the blowdown wastewater sample collected from Aldrich Unit #1 on **November 22, 2022** exceeded the copper concentration with a reported value of **2.78 mg/L**. Pursuant to Section IV of PAWC's Industrial Waste Discharge Permit, repeat sampling and analysis was completed on **December 8, 2022** and **December 14, 2022**. Both samples exceeded the copper limitation with reported values of **4.85 mg/L** and **4.11 mg/L** respectively.

On December 14, 2022, PAWC management became aware that the Aldrich Unit #1 compositor had malfunctioned leading to a small sample volume that had previously stagnated in the copper sample wastewater line. PAWC suspected that the stagnate wastewater corroded the copper sample line causing the spike in the copper concentration. In an effort to collect a representative sample of the discharge, PAWC resampled Aldrich Units #1, #2, and #3 on **December 15, 2022** using manual compositing technique. The analytical results attached to this NOV indicate that the individual copper sample results for all of the Aldrich Units are below the Authority's copper limit. Unit #1 was found to have a copper level of **0.821 mg/L**.

ACTIONS

In an email dated November 18, 2022, BASA issued written approval to PAWC to sample from Aldrich Unit #1 rather than Aldrich Unit #2 as required by the Industrial Waste Discharge Permit due to a malfunctioning sample valve. To reinstate Aldrich Unit #2 as the primary compliance sampling location, the broken sampling valve must be replaced and functioning by **July 1, 2023**. To ensure there is an alternative auto sampling location, please install a functional auto compositor on Aldrich Unit #1 by **February 1, 2023**.

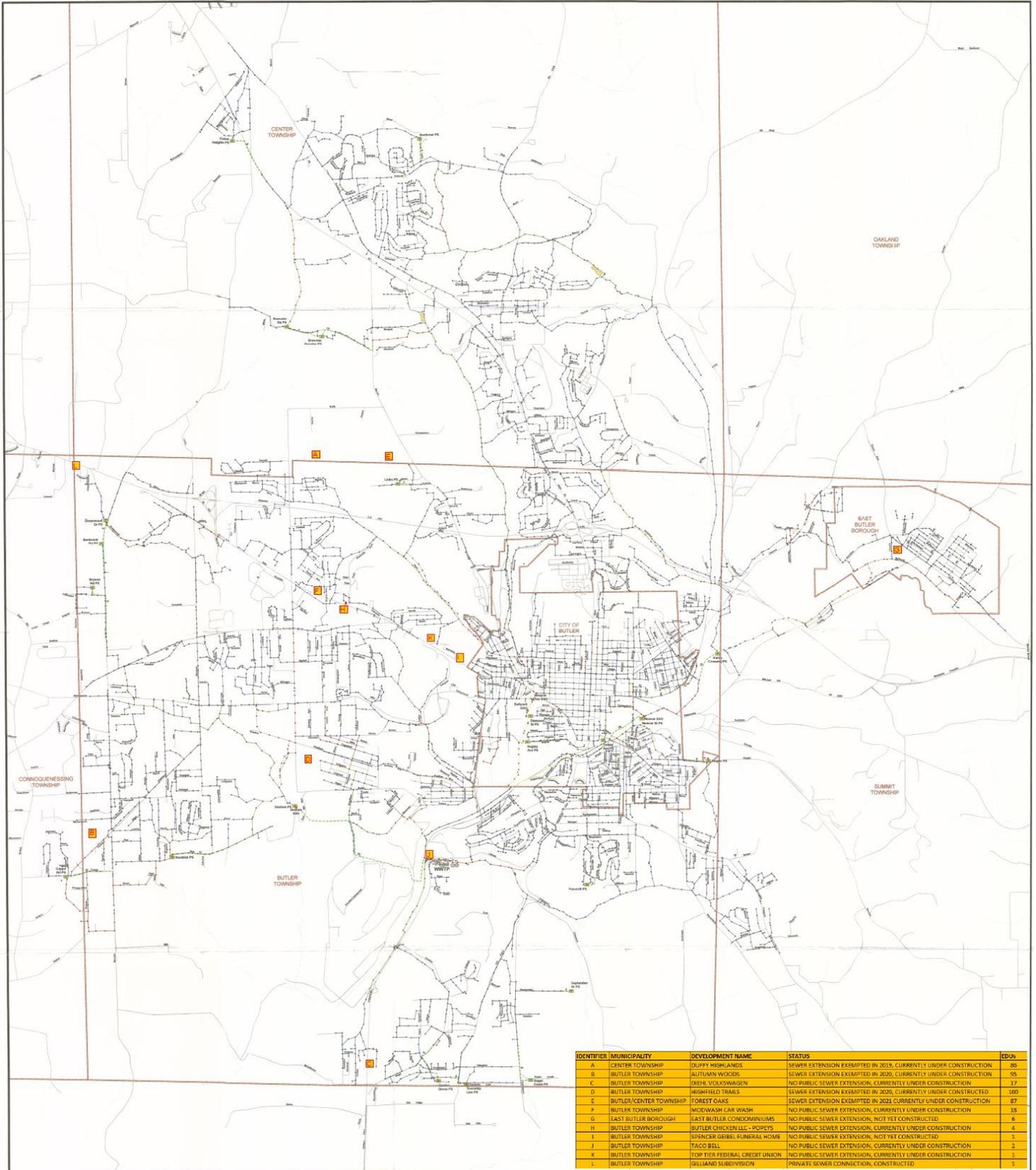
BUTLER AREA SEWER AUTHORITY


Mason Miller
Pretreatment Coordinator

Appendix D

2022 Planning Module Land Development Map

Amended Appendix A-20-c



BASA

BUTLER AREA SEWER AUTHORITY

BUTLER COUNTY, PENNSYLVANIA

EXHIBIT III-1

SYSTEM MAP

APRIL 2008

N

1 inch equals 1,200 feet

Sewer Structures: 1" - 8", 10", 12", 15", 18", 24", 27", 30", 36", 48"
 Pump Stations
 Force Mains
 Streets
 Street Centerlines
 Municipal Boundaries
 Wastewater Treatment Plant

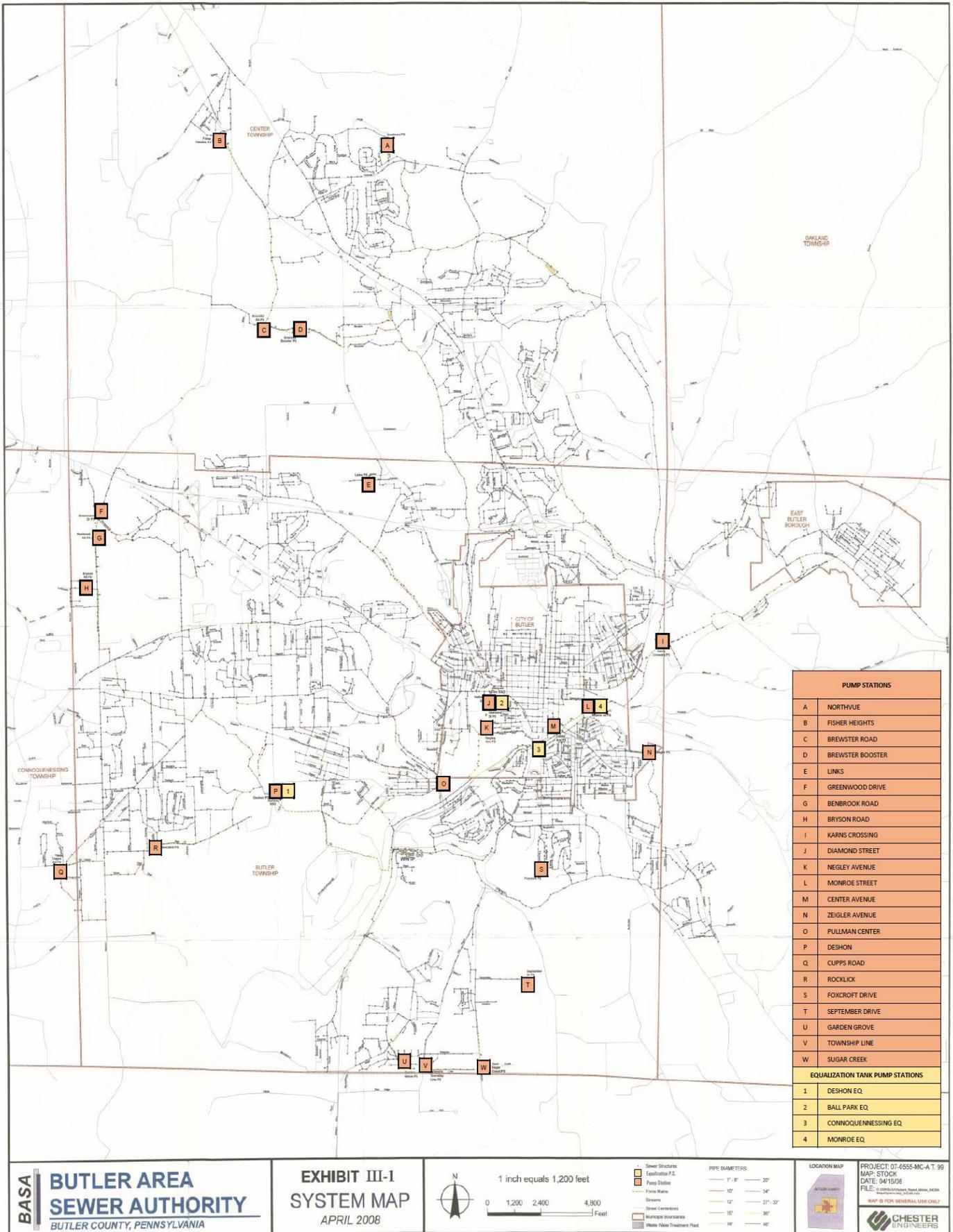
LOCATION MAP

PROJECT: 07-0555-MC-A-T-99
 MAP: STOCK
 DATE: 04/18/08
 FILE: C:\projects\07-0555-MC-A-T-99\Map\Map08.mxd
 MAP IS FOR GENERAL USE ONLY

CHESTER ENGINEERS

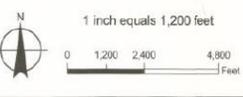
Appendix E

Pump Station Map



BASA
BUTLER AREA SEWER AUTHORITY
 BUTLER COUNTY, PENNSYLVANIA

EXHIBIT III-1
SYSTEM MAP
 APRIL 2008



SEWER STRUCTURES		PIPE DIAMETERS	
[Symbol]	Equalization P.S.	[Symbol]	1" - 8"
[Symbol]	Pump Station	[Symbol]	10"
[Symbol]	Force Mains	[Symbol]	12"
[Symbol]	Storm	[Symbol]	18"
[Symbol]	Street Centerlines	[Symbol]	24"
[Symbol]	Multiple Structures	[Symbol]	30"
[Symbol]	Wastewater Treatment Plant	[Symbol]	36"
		[Symbol]	42"
		[Symbol]	48"

LOCATION MAP

PROJECT: 07-0555-MC-A-T-99
 MAP: STOCK
 DATE: 04/15/08
 FILE: G:\070555\0555_Plan\Drawn\Drawn.dwg
 MAP IS FOR GENERAL USE ONLY

CHESTER ENGINEERS

Appendix F

CAP Progress Schedule

Project Schedule
 CAP Pump Stations Upgrade
 Butler Area Sewer Authority

