pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0082589**
Facility Type	**Non-Municipal**	APS ID	**884473**
Major / Minor	**Minor**	Authorization ID	**1341604**

Applicant and Facility Information

Applicant Name	**PA American Water Co.**	Facility Name	**PA American Water Fairview Township South STP**
Applicant Address	852 Wesley Drive	Facility Address	612 Wyndamere Road
	Mechanicsburg, PA 17055		Etters, PA 17319
Applicant Contact	Jon Prawdzik	Facility Contact	Sean Shoemaker
Applicant Phone	(717) 550-1521	Facility Phone	(717) 550-1521
Client ID	87712	Site ID	257972
Ch 94 Load Status	Not Overloaded	Municipality	Fairview Township
Connection Status	Self Imposed Connection Prohibition	County	York
Date Application Received	February 4, 2021	EPA Waived?	No
Date Application Accepted	March 8, 2021	If No, Reason	Significant CB Discharge

Purpose of Application: This is an application for NPDES renewal.

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the PA American Water located at 612 Wyndamere Road, Etters, PA 17319 in York County, municipality of Fairview Township. The existing permit became effective on September 1, 2016 and expired on August 31, 2021. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on March 8, 2021.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.5 MGD annual average treatment facility. The hydraulic design capacity is 0.94 MGD. The applicant recently upgraded to UV disinfection. The application does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facility (Level 1) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to York County and Fairview Township Supervisors and the notice was received by the parties in December 2020. A planning approval letter was not necessary as the facility is neither new or expanding.

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	June 7, 2022
X		Daniel W. Martin, P.E. / Environmental Engineer Manager Daniel W. Martin	June 23, 2022

Summary of Review

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Tributary 09339 to Fishing Creek. The sequence of receiving streams that the Tributary 09339 to Fishing Creek discharges into are Fishing Creek and the Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water's existing use has protected water usage for cold water fishes (CWF) and migratory fishes (MF). The designated use is trout stocking fish. No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Tributary 09339 to Fishing Creek is a Category 4c and 5 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an impaired stream for aquatic life due to habitat alterations from habitat modifications and from sediment/siltation from construction. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- Reduction in effluent limits for ammonia-nitrogen, total copper, and total zinc.
- Addition of monitoring for E. Coli.
- Increase cap loads for net total nitrogen and net total phosphorus.

Sludge use and disposal description and location(s): Sewage sludge/biosolids disposed at Modern Landfill in York County and at New Cumberland WWTP in Cumberland County

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.
Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	PA American Water Co.
NPDES Permit #	PA0082589
Physical Address:	612 Wyndamere Road Etters, PA 17319
Mailing Address:	852 Welsey Drive Mechanicsburg, PA 17055
Contact:	Jon Prawdzik Senior Manager Jon.prawdzik@amwater.com Sean Shoemaker Treatment Plant Operator Sean.shoemaker@amwater.com
Consultant:	There was not consultant utilized for this NPES renewal.

1.2 Permit History

Description of Facility

The current permit had effluents limits for Phase 1 and Phase 2. Phase 1 included monitoring for TRC. Phase 2 included monitoring for UV disinfection.

PA0033774: On 07/01/2020, there was a permit recission for Regent Acres MHP. The facility now discharges to the Fairview Township South WWTP.

PA0082589 A-1: On 04/26/2021, the NPDES was amended to include UV disinfection monitoring.

WQM Amendments: Permit Number 6792402: On 04/26/2021, the WQM was amended to include UV disinfection.

Permit submittal included the following information.

- NPDES Application
- Flow Diagrams
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 612 Wyndamere Road, Etters, PA 17319. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

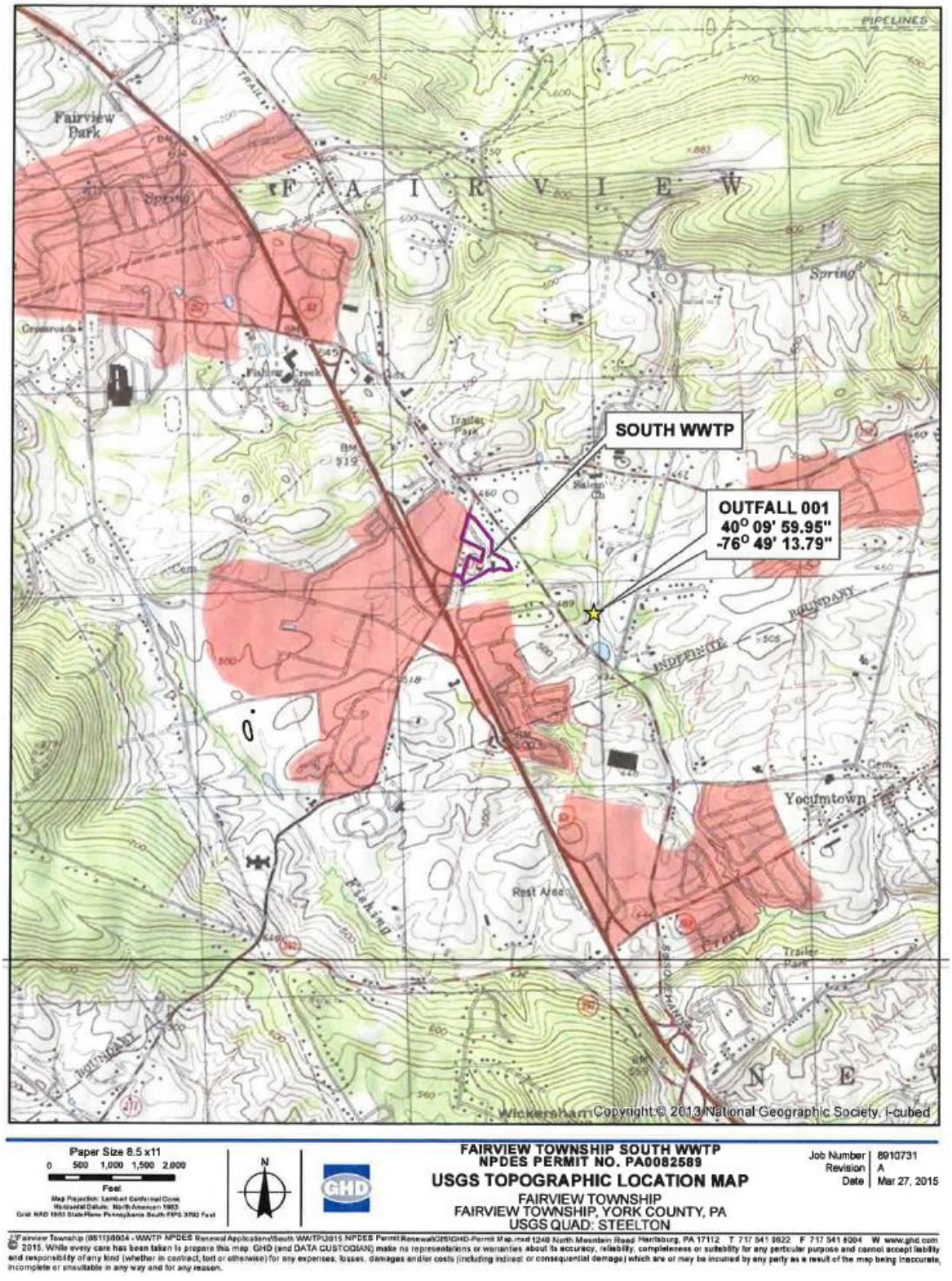
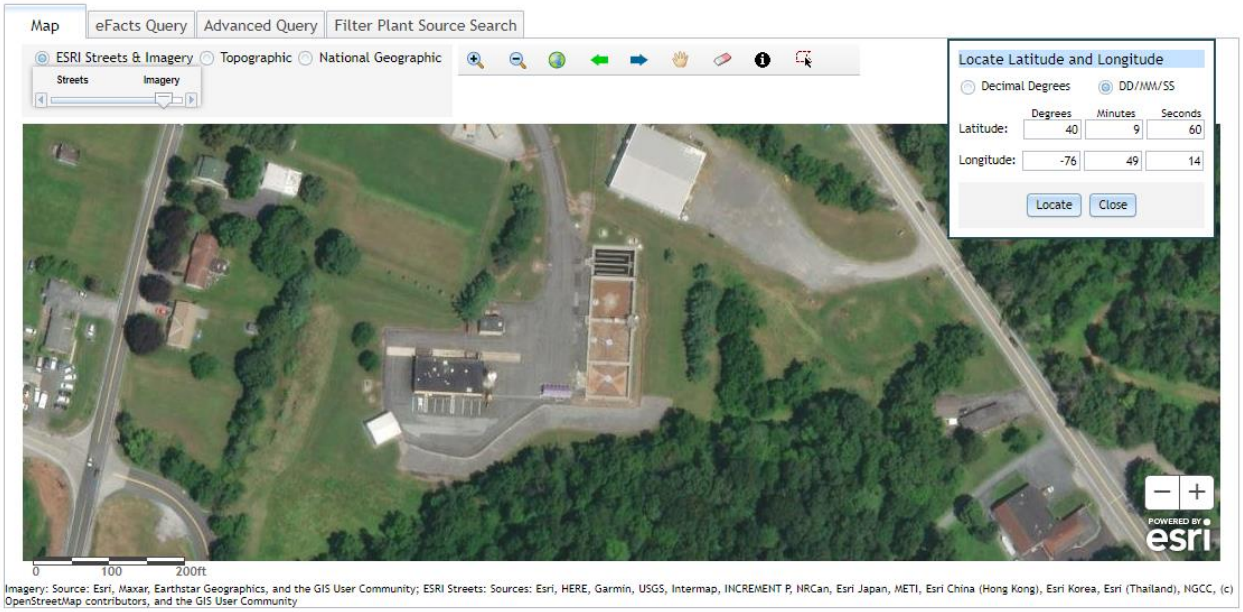


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The facility receives all of their wastewater contributions from Fairview Township.

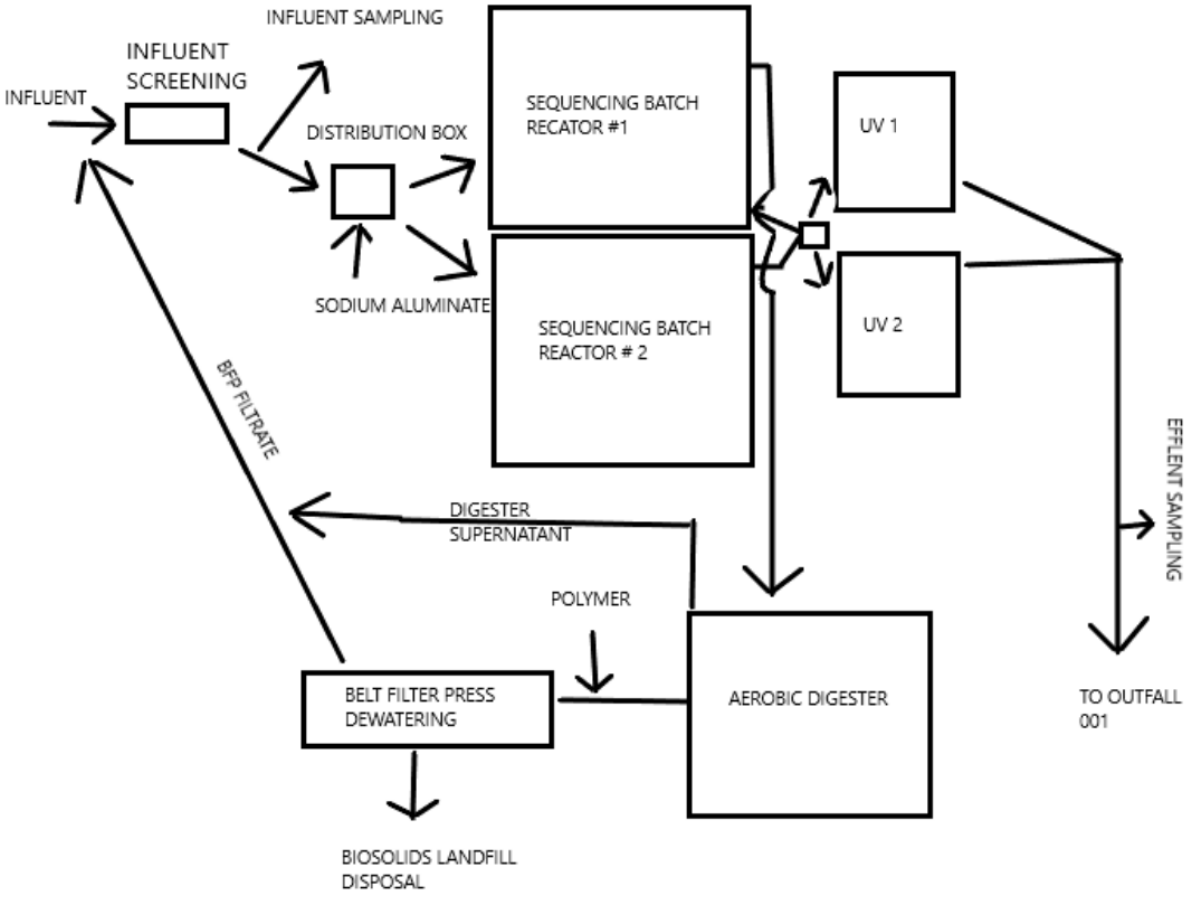
2.2 Description of Wastewater Treatment Process

The subject facility is a 0.50 MGD annual average design flow facility. The subject facility treats wastewater using a SBR(s) and UV disinfection prior to discharge through the outfall. The facility is being evaluated for flow, pH, dissolved oxygen, CBOD5, TSS, fecal coliform, nitrogen species, phosphorus, total copper, total zinc, and UV dosage. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary				
Treatment Facility Name: Fairview Township - WWTP South				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Phosphorus Reduction	Sequencing Batch Reactor	UV disinfection	0.5
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.94	1700	Not Overloaded	Dewatering	Landfill

A process flow diagram for the facility is depicted.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.5
Latitude	40º 9' 59.00"	**Longitude**	-76º 49' 13.00"
Wastewater Description:	Sewage Effluent		

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Sodium aluminate as a coagulant for phosphorus removal
- Polymer (Pollutech CL981) for dewatering biosolids

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. C. For Outfall 001 , **Latitude** 40º 9' 59.00" , **Longitude** 76º 49' 13.00" , **River Mile Index** 1.16 , **Stream Code** 09339

Receiving Waters: Unnamed Tributary to Fishing Creek (CWF (existing use))

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Completion of Construction**[4] through **August 31, 2021**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	104	167	XXX	25.0	40.0	50	1/week	8-Hr Composite
Total Suspended Solids	125	187	XXX	30.0	45.0	60	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	23	XXX	XXX	5.7	XXX	11	2/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	7.9	XXX	XXX	1.9	XXX	3.8	2/week	8-Hr Composite
Total Phosphorus	8.3	XXX	XXX	2.0	XXX	4	2/week	8-Hr Composite
Copper, Total	0.06	0.08 Daily Max	XXX	0.015	0.02 Daily Max	XXX	2/month	8-Hr Composite

Outfall 001 , Continued (from Completion of Construction through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Zinc, Total	0.5	0.79 Daily Max	XXX	0.12	0.19 Daily Max	XXX	2/month	8-Hr Composite
Ultraviolet light dosage (mWsec/cm²)	XXX	XXX	Report	Report	XXX	XXX	1/day	Recorded

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. D. For Outfall 001 , **Latitude** 40° 9' 59.00" , **Longitude** 76° 49' 13.00" , **River Mile Index** 1.16 , **Stream Code** 09339

Receiving Waters: Unnamed Tributary to Fishing Creek (CWF (existing use))

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **September 1, 2016** through **August 31, 2021**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. E. For Outfall 001 , **Latitude** 40° 9' 59.00" , **Longitude** 76° 49' 13.00" , **River Mile Index** 1.16 , **Stream Code** 09339

Receiving Waters: Unnamed Tributary to Fishing Creek (CWF (existing use))

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **September 1, 2016** through **August 31, 2021**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Net Total Nitrogen	Report	9132	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1218	XXX	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

05/10/2017: There was nothing significant to report.

01/12/2018: There was nothing significant to report.

07/11/2019: There was nothing significant to report.

06/16/2020: An administrative inspection was conducted. Regent Acres Mobile Home Community recently connected to the system. During rain events, the operators noticed more flow coming from this connection.

05//06/2021: An administrative review for the Chesapeake Bay nutrient data was conducted. Minor errors were noticed on the Chesapeake Bay DMR forms for November 2019, December 2019, and July 2020.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.82 MGD in September 2021. The design capacity of the treatment system is 0.94 MGD.

The off-site laboratory used for the analysis of the parameters was ALS Environmental located at 301 Fulling Mill road, Middletown, PA 17057.

DMR Data for Outfall 001 (from April 1, 2021 to March 31, 2022)

Parameter	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21
Flow (MGD) Average Monthly	0.6724	0.6721	0.6239	0.6052	0.6462	0.6675	0.8218	0.6091	0.5964	0.5497	0.5406	0.551
Flow (MGD) Daily Maximum	0.8505	0.9407	0.7594	0.7073	0.7661	0.7942	1.2146	0.868	0.9618	0.6705	0.6155	0.6869
pH (S.U.) Instantaneous Minimum	6.72	7.0	6.87	6.88	6.83	6.95	6.8	6.9	7.0	6.96	6.78	6.88
pH (S.U.) Instantaneous Maximum	7.60	8.16	7.57	7.57	7.39	7.84	7.73	7.62	7.41	7.8	7.63	7.6
DO (mg/L) Instantaneous Minimum	7.18	7.94	7.56	7.37	6.90	7.01	6.31	6.72	6.93	7.25	7.4	7.59
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	0.17	0.19	0.19	0.19	0.19
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	0.28	0.38	0.41	0.28	0.35
CBOD5 (lbs/day) Average Monthly	< 12	< 13	< 12	< 13	< 11	< 11	15	< 16	23	19	14	15
CBOD5 (lbs/day) Weekly Average	15	< 17	16	21	< 11	< 13	16	24	28	25	15	17
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.0	< 3.0	4.0	4.0	3.0	3.0
CBOD5 (mg/L) Weekly Average	3.0	3.0	3.0	4.0	< 2.0	< 2.0	3.0	4.5	5.0	5.0	3.0	4.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1098	1044	1218	1612	1266	1106	913	821	911	996	880	587
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	1336	1275	1488	2277	1792	1320	1110	1080	1030	1162	1192	1063
BOD5 (mg/L) Raw Sewage Influent Average Monthly	198	193	226	286	230	194	150	161	181	212	191	182
TSS (lbs/day) Average Monthly	< 22	< 22	< 22	< 22	< 22	< 23	< 36	< 41	< 28	< 24	23	< 24

TSS (lbs/day) Raw Sewage Influent Average Monthly	1292	1502	1397	1387	1549	1327	2753	1166	886	996	999	827
TSS (lbs/day) Raw Sewage Influent Daily Maximum	1603	1950	1796	1699	2893	1619	7582	1450	1150	1230	1299	1009
TSS (lbs/day) Weekly Average	< 24	< 23	< 22	< 24	< 22	< 25	53	94	43	25	< 25	< 28
TSS (mg/L) Average Monthly	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 6.0	< 8.0	< 5.0	< 5.0	< 5.0	< 5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	232	277	260	246	281	235	469	228	172	213	220	176
TSS (mg/L) Weekly Average	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	8.0	18.0	9.0	5.0	< 5.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 2.0	< 2	< 1	< 1	< 1	< 1	< 1	6	< 2	< 5	8	3
Fecal Coliform (No./100 ml) Instantaneous Maximum	9.0	29	3	3	< 1	1	1	21	6.0	45	17	7
Nitrate-Nitrite (mg/L) Average Monthly	< 4.68	< 4.03	< 2.38	< 2.85	< 2.5	< 3.29	< 3.32	< 2.92	< 3.72	< 2.97	< 4.05	< 4.22
Nitrate-Nitrite (lbs) Total Monthly	< 846.1	< 650.5	< 394.2	< 454.7	< 420.2	< 598.7	< 677.4	< 485.6	< 601.4	< 425.6	< 575.7	< 594.8
Total Nitrogen (mg/L) Average Monthly	< 6.09	< 6.28	< 3.94	< 5.74	< 3.77	< 3.97	< 4.39	< 4.14	< 4.94	< 4.08	< 5.15	< 5.5
Total Nitrogen (lbs) Effluent Net Total Monthly	< 1100.4	< 1008	< 648.9	< 937.3	< 636.9	< 722.7	< 909.5	< 682.9	< 799.7	< 585.2	< 732.9	< 773.9
Total Nitrogen (lbs) Total Monthly	< 1100.4	< 1008	< 648.9	< 937.3	< 636.9	< 722.7	< 909.5	< 682.9	< 799.7	< 585.2	< 732.9	< 773.9
Total Nitrogen (lbs) Effluent Net Total Annual							9132					
Total Nitrogen (lbs) Total Annual							9142					
Ammonia (lbs/day) Average Monthly	< 1.0	< 5	< 2	< 8	< 3	< 1.0	< 0.7	< 0.5	< 0.6	< 0.6	< 0.8	< 0.7
Ammonia (mg/L) Average Monthly	< 0.2	< 0.9	< 0.5	< 1.4	< 0.4	< 0.2	< 0.1	< 0.1	< 0.108	< 0.121	< 0.2	< 0.2

Ammonia (lbs) Total Monthly	< 36.3	< 143.8	< 76.9	< 241.2	< 77.2	< 18	< 21.4	< 16.8	< 17.3	< 17.3	< 25.1	< 20.4
Ammonia (lbs) Total Annual							< 841					
TKN (mg/L) Average Monthly	< 1.41	2.25	< 1.56	< 2.89	< 1.27	< 0.68	< 1.08	< 1.22	< 1.2	< 1.1	< 1.1	< 1.3
TKN (lbs) Total Monthly	< 254.2	357.5	< 254.7	< 482.6	< 216.7	< 124	< 232.1	< 197.3	< 198.3	< 159.6	< 157.2	< 179.2
Total Phosphorus (lbs/day) Average Monthly	1.2	0.9	0.9	1.3	1.3	1.7	4.2	< 0.9	< 1.2	< 0.9	0.9	1.7
Total Phosphorus (mg/L) Average Monthly	0.21	0.2	< 0.17	0.24	0.22	0.30	0.5	< 0.2	< 0.22	< 0.2	0.2	0.4
Total Phosphorus (lbs) Effluent Net Total Monthly	37.7	24.6	28.7	40.4	37.9	51.2	98.1	< 29.2	< 36.3	< 27.3	28.9	49.8
Total Phosphorus (lbs) Total Monthly	37.7	24.6	28.7	40.4	37.9	51.2	98.1	< 29.2	< 36.3	< 27.3	28.9	49.8
Total Phosphorus (lbs) Effluent Net Total Annual							< 449					
Total Phosphorus (lbs) Total Annual							< 449					
Total Copper (lbs/day) Average Monthly	< 0.02	0.02	0.02	0.02	< 0.01	0.01	< 0.02	< 0.01	< 0.01	0.01	0.01	0.02
Total Copper (lbs/day) Daily Maximum	0.03	0.03	0.03	0.03	0.02	0.02	< 0.02	< 0.01	0.02	0.01	0.01	0.02
Total Copper (mg/L) Average Monthly	< 0.004	0.004	0.004	0.003	0.002	0.002	0.003	0.003	< 0.003	0.003	0.003	0.003
Total Copper (mg/L) Daily Maximum	0.005	0.005	0.005	0.006	0.003	0.003	0.0025	0.0025	0.003	0.0027	0.0033	0.0032
Total Zinc (lbs/day) Average Monthly	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3
Total Zinc (lbs/day) Daily Maximum	0.30	0.40	0.30	0.30	0.30	0.40	0.20	0.30	0.30	0.30	0.30	0.30
Total Zinc (mg/L) Average Monthly	0.06	0.06	0.05	0.05	0.05	0.05	0.03	0.05	0.05	0.05	0.06	0.06
Total Zinc (mg/L) Daily Maximum	0.056	0.07	0.06	0.058	0.056	0.056	0.031	0.06	0.053	0.054	0.061	0.064
UV Dosage (mWsec/cm²) Instantaneous Minimum	75.2	78	79	78.2	79.5	75.3	78.0	GG				

UV Dosage (mWsec/cm²) Average Monthly	79.8	81.2	80.7	81.2	82.5	81.7	85.4	GG				

3.2.1 Chesapeake Bay Truing

The table summarizes the facility's compliance/noncompliance with Chesapeake Bay cap loads.

The facility purchased nitrogen credits in 2017, 2018, 2019 and 2021.

In 2020, nitrogen credits were sold.

Chesapeake Bay Annual Nutrient Summary
PA American Water - Fairview South WWTP
PA0082589

Year for Truing Period (Oct 1 - Sept 30, XXXX)	Annual Total Mass Load	Lbs Credit Purchased	Lbs Sold	Annual Total Mass Load	Lbs Credit Purchased	Lbs Sold	Net Effluent Limits		Compliant with Permit Limits (Yes/No)	
	Nitrogen (lbs)			Phosphorus (lbs)			Nitrogen (lbs) *9,132*	Phosphorus (lbs) *1,218*	Nitrogen	Phosphorus
2017	12,937	3,805	0	376	0	0	9,132	376	Yes	Yes
2018	14,028	5,046	0	417	0	0	8,982	417	Yes	Yes
2019	10,180	1,049	0	380	0	0	9,131	380	Yes	Yes
2020	8,678	0	408	398	0	0	9,086	398	Yes	Yes
2021	9,142	10	0	449	0	0	9,132	449	Yes	Yes

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in September 1, 2016 to May 14, 2022, the following were the observed effluent non-compliances.

Summary of Non-Compliance w/ NPDES Effluent Limits
Beginning September 1, 2016 and Ending May 14, 2022

NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	DISCHARGE_COMMENTS
2/19/2018	Violation of permit condition	Effluent	Fecal Coliform	26100	>	10000	CFU/100 ml	Instantaneous Maximum	
3/23/2018	Sample type not in accordance with permit	Other Violations	Total Kjeldahl Nitrogen (Total Load, lbs)						
5/15/2018	Sample type not in accordance with permit	Other Violations	Fecal Coliform						
11/1/2019		Unauthorized Discharges							Due to heavy rains, Beinhower pump station was unable to keep up with incoming flow.

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning on September 1, 2016 to May 14, 2022, there were no observed enforcement actions.

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility is as follows.

2021			
Sewage Sludge / Biosolids Production Information			
Hauled Off-Site			
2021	**Tons Dewatered**	**% Solids**	**Dry Tons**
January	72.33	14.87	10.76
February	79.91	15.41	12.31
March	66.05	14.98	9.89
April	76.61	14.86	11.38
May	93.91	16.66	15.65
June	65.15	17.75	11.56
July	83.34	15.71	13.09
August	40.36	17.36	7.01
September	70.24	17.2	12.08
October	61.54	20.06	12.34
November	80.95	15.99	12.94
December	99.31	16.91	16.79
Notes:			
Sewage sludge/biosolids disposed at Modern Landfill in York County and at New Cumberland WWTP in Cumberland			

3.5 Open Violations

The applicant has open violations for the following facilities: PA American Norristown, PA Water Phillipsburg, PA American Water Scranton WWTP, Exeter Twp STP, Watres Water Treatment Plant, Norristown and WTP. The final NPDES permit may be withheld until the open violations for the facilities are resolved.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Tributary 09339 to Fishing Creek. The sequence of receiving streams that the Tributary 09339 to Fishing Creek discharges into are Fishing Creek and the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is PP&L Bruner Island (PWS ID #7670802) located approximately 11 miles downstream of the subject facility on the Susquehanna River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2020 Integrated List of All Waters (303d Listed Streams)

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2020 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 4c and 5 waterbody. The surface waters is an impaired stream for aquatic life due to habitat alternations and sediment/siltation. The designated use has been classified as protected waters for trout stocking fish (TSF). The existing uses are classified for cold water fishes (CWF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is the Susquehanna River at Marietta (WQN201). This WQN station is located approximately 22 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Susquehanna River at Marietta, PA (USGS station number 1576000). This gauge station is located approximately 20 miles downstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 8.1 and the stream water temperature was estimated to be 25.5 C.

The hardness of the stream was estimated from the water quality network to be 84.5 mg/l $CaCO_3$.

The low flow yield and the Q710 for the subject facility was estimated using StreamStats.

The low flow yield is 0.0254 $ft^3/s/mi^2$ and the Q710 is 0.0796 ft^3/s.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.5
Latitude	40º 10' 0.22"	Longitude	-76º 49' 13.11"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Unnamed Tributary to Fishing Creek (CWF (existing use))	Stream Code	9339
NHD Com ID	56406195	RMI	1.15
Drainage Area	3.14	Yield (cfs/mi^2)	0.0254
Q_{7-10} Flow (cfs)	0.0796	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	438	Slope (ft/ft)	
Watershed No.	7-E	Chapter 93 Class.	TSF
Existing Use	CWF, MF	Existing Use Qualifier	Use Attainability Analysis
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	HABITAT ALTERATIONS, SILTATION		
Source(s) of Impairment	CONSTRUCTION, HABITAT MODIFICATION - OTHER THAN HYDROMODIFICATION		
TMDL Status	Not appl.	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°C)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; historical median
Other:		

Nearest Downstream Public Water Supply Intake	PP&L Bruner Island		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	60	Distance from Outfall (mi)	11

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

5.2.2 Mass Based Limits

For publicly owned treatment works (POTW), mass loadings are calculated based upon design flow rate of the facility and the permit limit concentration. The generalized calculation for mass loadings is shown below:

$$Quantity\ \left(\frac{lb}{day}\right) = (MGD)(Concentration)(8.34)$$

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

The modeling point nodes utilized for this facility are summarized below.

General Data 1 (Modeling Point #1)	***Input Value***	***Units***
Stream Code	9339	
River Mile Index	1.15	miles
Elevation	438	feet
Latitude	40.166667	
Longitude	-76.820556	
Drainage Area	3.14	sq miles
Low Flow Yield	0.0254	cfs/sq mile
General Data 2 (Modeling Point #2)	***Input Value***	***Units***
Stream Code	9339	
River Mile Index	0	miles
Elevation	393	feet
Latitude	40.153302	
Longitude	-76.810364	
Drainage Area	3.88	sq miles
Low Flow Yield	0.0254	cfs/sq mile

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) a 30-day average concentration for CBOD5 in the discharge;
(c) a 30-day average concentration for the NH_3-N in the discharge;
(d) *24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 Toxics Modeling

The Toxics Management Spreadsheet model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. Toxics Management Spreadsheet does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

Acute Fish Criterion (AFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e.15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

Chronic Fish Criterion (CFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

Threshold Human Health (THH) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

Cancer Risk Level (CRL) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The Toxics Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

5.3.2.1 Determining if NPDES Permit Will Require Monitoring/Limits in the Proposed Permit for Toxic Pollutants

To determine if Toxics modeling is necessary, DEP has developed a Toxics Management Spreadsheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters. The toxics reviewed for reasonable potential were the following pollutants: TDS, chloride, bromide, sulfate, total copper, total lead, and total zinc.

Based upon the SOP- Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants (Revised January 10, 2019), monitoring and/or limits will be established as follows.

(a) When reasonable potential is demonstrated, establish limits where the maximum reported concentration equals or exceeds 50% of the WQBEL.
(b) For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
(c) For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Applicable monitoring or permit limits for toxics are summarized in Section 6.

The Toxics Management Spreadsheet output has been included in Attachment B.

5.3.3 Whole Effluent Toxicity (WET)

The facility is not subject to WET.

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that

were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$TMDL = \Sigma WLAs + \Sigma LAs + MOS$$

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystemm that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was September 13, 2021.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30. For facilities that have received Cap Loads in any other form, the Cap Loads will be modified accordingly when the permits are renewed.

Offsets have been incorporated into Cap Loads in several permits issued to date. From this point forward, permits will be issued with the WLAs as Cap Loads and will identify Offsets separately to facilitate nutrient trading activities and compliance with the TMDL.

Based upon the supplement the subject facility has been categorized as a Sector A discharger. The supplement defines Sector A as a sewage facility is considered significant if it has a design flow of at least 0.4 MGD.

Table 5 of the Phase 3 WIP (revised September 13, 2021) presents all NPDES permits for Significant Sewage dischargers with Cap Loads. The NPDES Permit No., phase, facility name, latest permit issuance date, expiration date, Cap Load compliance start date, TN and TP Cap Loads, and TN and TP Delivery Ratios are presented. In addition, if TN Offsets were incorporated into the TN Cap Loads when the permit was issued, the amount is shown; these Offsets will be removed from Cap Loads upon issuance of renewed permits to implement Section IV of this document (i.e., a facility may use Offsets for compliance but may not register them as credits).

The total nitrogen (TN) and total phosphorus (TP) cap loads itemized by Table 5 for the subject facility are as follows:

TN Cap Load (lbs/yr)	9,132
TN Delivery Ratio	0.961
TP Cap Load (lbs/yr)	1,218
TP Delivery Ratio	0.436

Expansions by any Significant Sewage discharger will not result in any increase in Cap Loads. Where non-significant facilities expand to a design flow of 0.4 MGD or greater, the lesser of baseline Cap Loads of 7,306 lbs/yr TN and 974 lbs/yr TP or existing performance will be used for permits, and the load will be moved from the Non-Significant sector load to the Significant Sewage sector load. If considered necessary for environmental protection, DEP may decide to move load from the Point Source Reserve to the Significant Sewage sector in the future.

The minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for Significant Sewage dischargers is 2/week.

This facility is subject to Sector A monitoring requirements. Monitoring shall be required at least 2x/wk.

Reporting

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30.

Facilities with NPDES permits must use DEP's eDMR system for reporting, except small flow treatment facilities. An Annual DMR must be submitted by the end of the Truing Period, November 28. As attachments to the Annual DMR a facility must submit a completed Annual Chesapeake Bay Spreadsheet, available through DEP's Supplemental Reports website, which contains an Annual Nutrient Monitoring worksheet and an Annual Nutrient Budget worksheet. This Spreadsheet will be submitted once per Compliance Year only, and reflect all nutrient sample results (for the period October 1 – September 30), Credit transactions (including the Truing Period) and Offsets applied during the Compliance Year.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus, and (c) Toxics.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection PA American Water - Fairview South WWTP, PA0082589			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 104 lbs/day and 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 125 lbs/day and 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD. Since the TBEL is more stringent than TBEL, TBEL will apply.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to record UV dosage.
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.5 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021			

6.1.2 Nitrogen Species and Phosphorus

In coordination with DEP Central Office, the cap loads for nitrogen and phosphorus were increased due to the termination of the Regent Acres MHP (PA0033774) permit. Th wastewater is now treated by the PA American Water WWTP. Central Office arrived at the cap load increase by taking a 4-year average from DMRs.

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

PA American Water - Fairview South WWTP, PA0082589

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	WQBEL	Monitoring:	The monitoring frequency shall be 2x/wk as an 8-hr composite sample
		Effluent Limit:	For the months of May 1 to October 31, effluent limits shall not exceed 7.0 lbs/day and 1.7 mg/l as an average monthly. For the months of November 1 to April 30, effluent limits shall not exceed 21 lbs/day and 5.1 mg/l as an average monthly.
		Rationale:	Water quality modeling recommends limits for ammonia-nitrogen. Based upon the DMR from April 1, 2021 to March 31, 2022, the facility will have no issues meeting the reduced effluent limit.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/wk.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/wk.
Total Phosphorus	Anti-backsliding	Monitoring:	The monitoring frequency shall be 2x/wk as an 8-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 8.3 lbs/day and 2.0 mg/l as an average monthly.
		Rationale:	Previous NPDES permits included total phosphorus since the loading exceeded the minimum 0.25% contribution requirement. Due to anti-backsliding, the limits shall continue to the proposed permit.
Net Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	Effluent limits shall not exceed 9,882 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Net Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	Effluent limits shall not exceed 1,248 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Notes:			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.5 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth. Based upon DEP policy directives issued on March 22, 2021 and in conjunction with EPA's 2017 Triennial Review, monitoring for E. Coli shall be required.

6.1.3.2 Summary of Toxics Monitoring/Limits

Summary of Proposed NPDES Parameter Details for Toxics

PA American Water - Fairview South WWTP, PA0082589

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Copper	WQBEL	Monitoring:	The monitoring frequency shall be 2x/mo as an 8-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 0.042 lbs/day and 0.01 mg/l as an average monthly.
		Rationale:	Toxics Management Spreadsheet recommends effluent limits
Total Zinc	WQBEL	Monitoring:	The monitoring frequency shall be 2x/mo as an 8-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 0.49 lbs/day and 0.118 mg/l as an average monthly.
		Rationale:	Toxics Management Spreadsheet recommends effluent limits

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.5 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

Changes in Permit Monitoring or Effluent Quality

Parameter	Existing Permit	Draft Permit
Ammonia-Nitrogen	For the months of May 1 to October 31, effluent limits shall not exceed 7.9 lbs/day and 1.9 mg/l as an average monthly. For the months of November 1 to April 30, effluent limits shall not exceed 23 lbs/day and 5.7 mg/l as an average monthly.	Water quality modeling recommends limits for ammonia-nitrogen. For the months of May 1 to October 31, effluent limits shall not exceed 7.0 lbs/day and 1.7 mg/l as an average monthly. For the months of November 1 to April 30, effluent limits shall not exceed 21 lbs/day and 5.1 mg/l as an average monthly. Based upon the DMR from April 1, 2021 to March 31, 2022, the facility will have no issues meeting the reduced effluent limit.
E. Coli	No monitoring or effluent limits	Due to the EPA Triennial review, monitoring shall be at least 1x/quarter.
Total Copper	Effluent limits shall not exceed 0.06 lbs/day and 0.015 mg/l as an average monthly	Water quality modeling recommends limits for total copper. Effluent limits shall not exceed 0.042 lbs/day and 0.01 mg/l as an average monthly. Based upon the DMR from April 1, 2021 to March 31, 2022, the facility will have no issues meeting the reduced effluent limit.
Total Zinc	Effluent limits shall not exceed 0.5 lbs/day and 0.12 mg/l as an average monthly	Water quality modeling recommends limits for total zinc. Effluent limits shall not exceed 0.49 lbs/day and 0.118 mg/l as an average monthly. Based upon the DMR from April 1, 2021 to March 31, 2022, the facility will have no issues meeting the reduced effluent limit.
Net Total Nitrogen	Effluent limits shall not exceed 9,132 lbs/yr.	Due to the recission of Regent Acres MHP (PA0033774), the wastewater from this facility has been directed to the PA American Water WWTP. Based upon a 4-year average loading, DEP Central Office authorized a cap load increase of 750 lb/yr. Effluent limits shall not exceed 9,882 lbs/yr.
Net Total Phosphorus	Effluent limits shall not exceed 1,218 lbs/yr.	Due to the recission of Regent Acres MHP (PA0033774), the wastewater from this facility has been directed to the PA American Water WWTP. Based upon a 4-year average loading, DEP Central Office authorized a cap load increase of 30 lb/yr. Effluent limits shall not exceed 1,248 lbs/yr.

6.3.1 Summary of Proposed NPDES Effluent Limits

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40° 9' 59.00" , **Longitude** 76° 49' 13.00" , **River Mile Index** 1.15 , **Stream Code** 9339

Receiving Waters: Unnamed Tributary to Fishing Creek (CWF (existing use))

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.20	XXX	0.64	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	104	167	XXX	25.0	40.0	50	1/week	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	125	187	XXX	30.0	45.0	60	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	21	XXX	XXX	5.1	XXX	10	2/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	7.0	XXX	XXX	1.7	XXX	3.4	2/week	8-Hr Composite
Total Phosphorus	8.3	XXX	XXX	2.0	XXX	4	2/week	8-Hr Composite
Copper, Total	0.042	0.064 Daily Max	XXX	0.01	0.015 Daily Max	XXX	2/month	8-Hr Composite
Zinc, Total	0.49	0.54 Daily Max	XXX	0.118	0.131 Daily Max	XXX	2/month	8-Hr Composite
Ultraviolet light dosage (mWsec/cm²)	XXX	XXX	Report	Report	XXX	XXX	1/day	Recorded

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001 , **Latitude** 40° 9' 59.00" , **Longitude** 76° 49' 13.00" , **River Mile Index** 1.15 , **Stream Code** 9339

Receiving Waters: Unnamed Tributary to Fishing Creek (CWF (existing use))

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Net Total Nitrogen	Report	9882	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	Report	1248	XXX	XXX	XXX	XXX	1/year	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- SBR Batch Discharge Condition
- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems

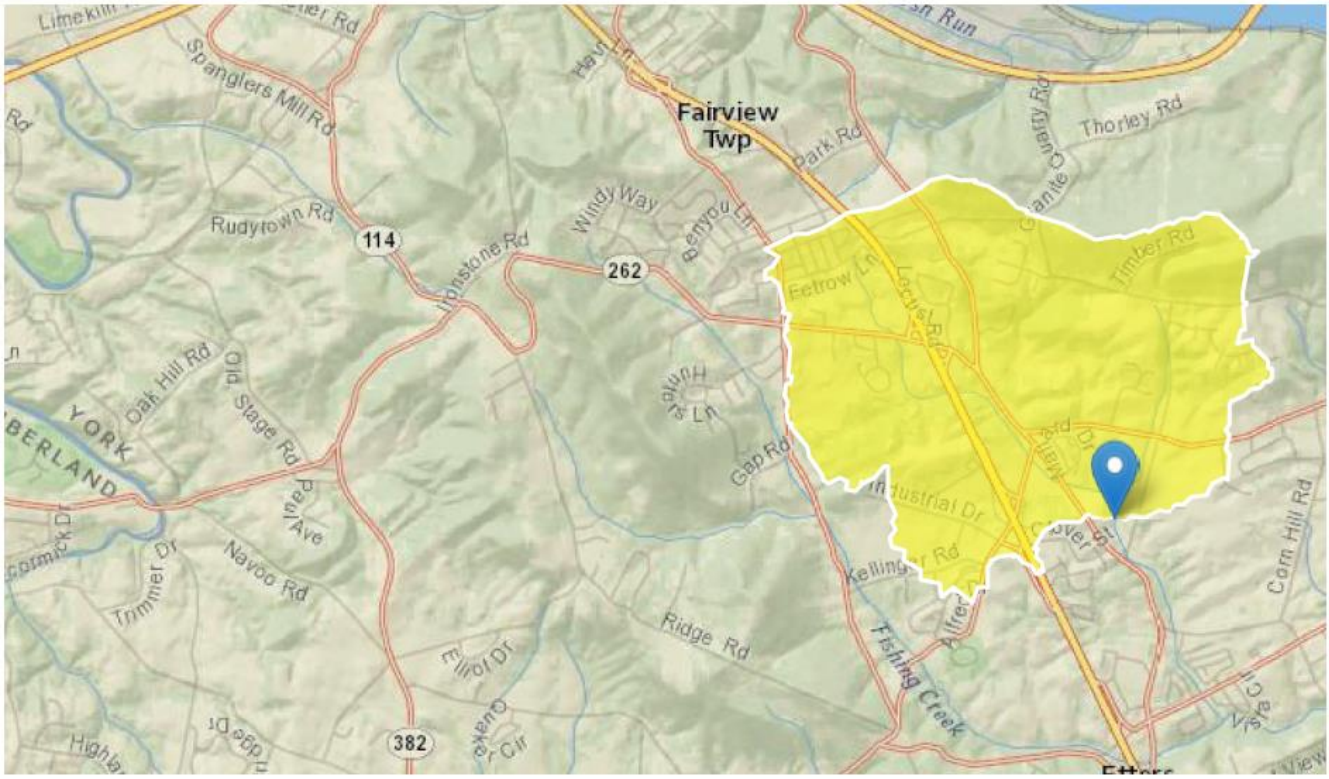
Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, rev 2/3/2022
☐	Other:

Attachment A

Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
Workspace ID: PA20220519103109956000
Clicked Point (Latitude, Longitude): 40.16690, -76.82040
Time: 2022-05-19 06:31:29 -0400



PA American Water PA0082589 Modeling Point #1 May 2022

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	3.14	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.18	miles per square mile

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.14	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.18	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.2	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.208	ft^3/s
30 Day 2 Year Low Flow	0.302	ft^3/s
7 Day 10 Year Low Flow	0.0796	ft^3/s
30 Day 10 Year Low Flow	0.117	ft^3/s
90 Day 10 Year Low Flow	0.204	ft^3/s

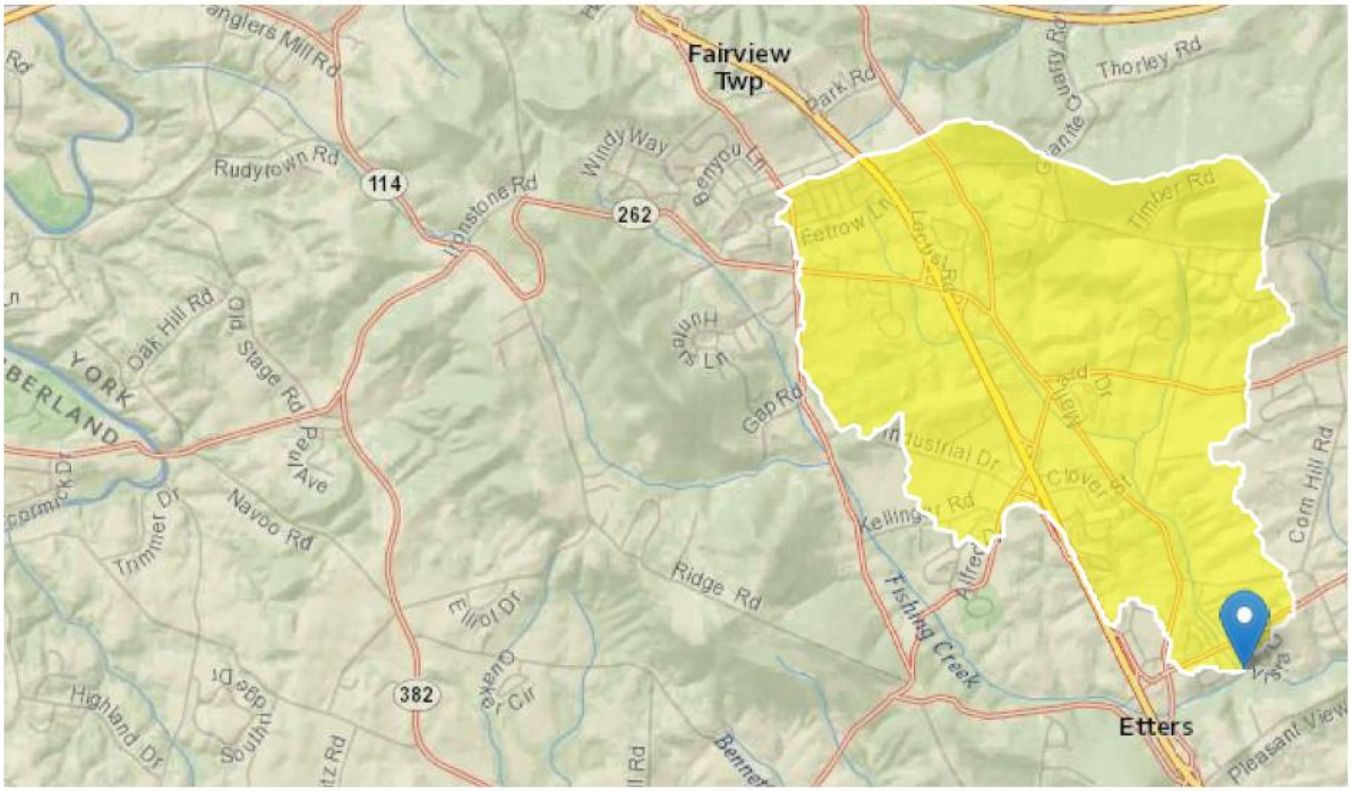
Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.8.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

StreamStats Report

Region ID: PA
Workspace ID: PA20220519105659532000
Clicked Point (Latitude, Longitude): 40.15331, -76.81059
Time: 2022-05-19 06:57:19 -0400



PA American Water PA0082589 Modeling Point #2 May 2022

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	3.88	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.24	miles per square mile

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.88	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.24	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.2	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.256	ft^3/s
30 Day 2 Year Low Flow	0.371	ft^3/s
7 Day 10 Year Low Flow	0.0991	ft^3/s
30 Day 10 Year Low Flow	0.145	ft^3/s
90 Day 10 Year Low Flow	0.251	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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Application Version: 4.8.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Attachment B

WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet Output Values

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07E	9339	Trib 09339 to Fishing Creek

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.150	PA American Wat	PA0082589	0.500	CBOD5	25		
				NH3-N	1.74	3.48	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07E	9339	Trib 09339 to Fishing Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.150	PA American Wa	11.66	12.76	11.66	12.76	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.150	PA American Wa	1.54	1.74	1.54	1.74	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.15	PA American Wat	25	25	1.74	1.74	5	5	0	0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07E	9339	Trib 09339 to Fishing Creek	1.150	438.00	3.14	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.025	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.50	8.10	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
PA American Wat	PA0082589	0.5000	0.5000	0.5000	0.000	20.00	7.27

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07E	9339	Trib 09339 to Fishing Creek	0.000	393.00	3.88	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.025	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.50	8.10	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07E	9339	Trib 09339 to Fishing Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.150	0.500	20.514	7.306
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
11.310	0.489	23.150	0.154
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.85	1.482	1.58	0.728
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.303	23.640	Owens	5
Reach Travel Time (days)			
0.455			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.046	21.33	1.52	6.25
0.091	19.90	1.48	6.67
0.137	18.57	1.43	6.91
0.182	17.33	1.38	7.07
0.228	16.18	1.34	7.21
0.273	15.10	1.29	7.33
0.319	14.09	1.25	7.44
0.364	13.15	1.21	7.54
0.410	12.27	1.17	7.64
0.455	11.45	1.13	7.73

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07E	9339	Trib 09339 to Fishing Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.150	0.08	0.00	0.08	.7735	0.00741	.489	11.31	23.15	0.15	0.455	20.51	7.31
Q1-10 Flow												
1.150	0.07	0.00	0.07	.7735	0.00741	NA	NA	NA	0.15	0.457	20.47	7.30
Q30-10 Flow												
1.150	0.10	0.00	0.10	.7735	0.00741	NA	NA	NA	0.16	0.450	20.61	7.31

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☐
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.22	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **PA American Water - Fairview South WWTP** NPDES Permit No.: **PA0082589** Outfall No.: **001**

Evaluation Type **Major Sewage / Industrial Waste** Wastewater Description: **Sewage effluent**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.5	100	7.27						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		532									
	Chloride (PWS)	mg/L		135									
	Bromide	mg/L	<	0.6									
	Sulfate (PWS)	mg/L		33.2									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		37									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		120									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

PA American Water - Fairview South WWTP, NPDES Permit No. PA0082589, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Tributary 09339 to Fishing Creek**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	009339	1.15	438	3.14			Yes
End of Reach 1	009339	0	393	3.88			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.15	0.0253503										84.5	8.1		
End of Reach 1	0	0.0253503										84.5	8.1		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	1.15														
End of Reach 1	0														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

PA American Water - Fairview South WWTP, NPDES Permit No. PA0082589, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.052 PMF: 1 Analysis Hardness (mg/l): 98.554 Analysis pH: 7.31

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	13.256	13.8	15.2	Chem Translator of 0.96 applied
Total Lead	0	0		0	63.565	80.1	88.4	Chem Translator of 0.793 applied
Total Zinc	0	0		0	115.743	118	131	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 0.052 PMF: 1 Analysis Hardness (mg/l): 98.554 Analysis pH: 7.31

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	8.845	9.21	10.2	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.477	3.12	3.44	Chem Translator of 0.793 applied
Total Zinc	0	0		0	116.690	118	131	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 0.052 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 1.040 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.042	0.064	10.2	15.2	15.2	µg/L	10.2	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	0.49	0.54	118	131	131	µg/L	118	AFC	Discharge Conc ≥ 50% WQBEL (RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Lead	N/A	N/A	Discharge Conc < TQL

Attachment C

Correspondence

Hong, Nicholas

From: Steckler, Zachary
Sent: Monday, June 6, 2022 8:30 AM
To: Hong, Nicholas
Subject: PA0082589 CAP Load Increase

Nick,

The 4 year average loadings that I have from the previous permit term for PA0033774 are 750 lb/yr TN and 30 lb/yr TP. If they have ceased discharging and connected to PA American's treatment plant under PA0082589, then PA0082589 would be eligible for a CAP load increase equal to those loading values.

Zachary Steckler, E.I.T. | Project Manager
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