Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0022250**
Facility Type	**Municipal**	APS ID	**278096**
Major / Minor	**Minor**	Authorization ID	**1497060**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Biglerville Borough Authority**	Facility Name	**Biglerville STP**
Applicant Address	33 Musselman Avenue PO Box 631	Facility Address	3251 Biglerville Road
	Biglerville, PA 17307-9233		Biglerville, PA 17307
Applicant Contact	Nicole Redden	Facility Contact	Kevin Bollinger
Applicant Phone	(717) 677-9488	Facility Phone	(717) 677-8802
Client ID	64562	Site ID	237897
Ch 94 Load Status	Not Overloaded	Municipality	Biglerville Borough
Connection Status	No Limitations	County	Adams
Date Application Received	August 28, 2024	EPA Waived?	Yes
Date Application Accepted	August 29, 2024	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

KPI Technology, on behalf of the Biglerville Borough Authority (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on April 24, 2020, and became effective on May 1, 2020. The permit expires on April 30, 2025.

The average annual design flow is 0.37 MGD. The hydraulic design capacity is 0.925 MGD, and the organic loading capacity is 750 lbs BOD_5/day. The renewal application indicated the STP receives its 84.5% from the Biglerville Borough, and 15.5% Butler Township.

WQM No. 0100402 was issued on 8/16/2000. WQM No. 0185405 A-1 was issued on 6/27/2006. WQM No. 0185405 A-2 was issued on 12/22/2015. WQM No. 0185405 A-3 & 0185405 A-4 were issued on 5/24/2016 & 4/24/2020.

Sludge use and disposal description and location(s): N/A because sludge hauled by Peck's Septic Service.

Changes from the previous permit: E. Coli monitoring and report requirements will add to the proposed permit. Total Zinc monitoring and report requirements will add to the proposed permit.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	February 28, 2025
X		/s/ Daniel W. Martin, P.E. / Environmental Engineer Manager	March 7, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.37
Latitude	39º 55' 9.10"	Longitude	-77º 14' 44.34"
Quad Name	Biglerville	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Conewago Creek (WWF)	Stream Code	09140
NHD Com ID	57472663	RMI	0.52
Drainage Area	1.61 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	595	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Wrightsville Water Supply Company, York County		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 78.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Unnamed Tributary (09140) to Conewago Creek at RMI 0.52 miles. A drainage area upstream of the discharge is estimated to be 1.61 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow
These flows were determined by correlating with the yield of USGS gage No. 01574000 on the West Conewago Creek near Manchester. The Q_{7-10} and drainage area at the gage is 39.2 ft^3/s and 512 mi^2 respectively. The Q_{30-10} and Q_{1-10} at the gage are 0.18 ft^3/s and .08 ft^3/s, respectively as well. The resulting yields are as follows:

- Q_{7-10} = (39.2 ft^3/s)/512 mi^2 = 0.08 ft^3/s/ mi^2
- Q_{30-10} = 1.36 * 0.13 cfs ≈ 0.18 cfs
- Q_{1-10} = 0.64 * 0.13 cfs ≈ 0.08 cfs

The Q_{7-10} at discharge = 1.61 mi^2 x 0.08 ft^3/s/mi^2 = 0.13 ft^3/s.

UNT to Conewago Creek
25 Pa Code § 93.9o classifies Tributaries 09140 to Conewago Creek as warm water & migratory fishes. The eMap PA lists Unnamed Tributary to Conewago Creek as impaired for siltation due to agriculture. A TMDL has not yet been written for these impairments.

Potable Water Supply Intake
The nearest downstream public water supply intake is the Wrightsville Borough Municipal Authority, York County intake on the Susquehanna River, approximately 78.0 miles from the point of discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				

Treatment Facility Name: Biglerville STP

WQM Permit No.	Issuance Date
0185405 A-4	4/24/2020
0185405 A-3	5/24/2016
0185405 A-2	12/22/2015
0185405 A-1	6/27/2006
0100402	8/16/2000

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.37

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.925	750	Not Overloaded		

Changes Since Last Permit Issuance:

Other Comments:
The WWTP train after construction will be as follows:

Fine screen with Bar Screen back -up → Influent Pump Station → Sequencing Batch Reactors (2) → UV system → Cascade Aeration → Outfall 001 to an unnamed tributary to Conewago Creek.

There are two (2) aerobic digesters on-site, a screw press for sludge dewatering, and two (2) sludge storage pads.

Solids are hauled to a landfill for disposal.

Chemical used:
MasterCat 4230 & 4239 are used for phosphorus & copper removal at a rate of 14.0 & 3.75 gpd.

Biosolids:
The total sewage sludge/biosolids production within the facility for the previous year was 34.4 dry tons.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months in the next page.
Summary of Inspections:	7/25/2023: Mr. Hoy, DEP WQS, conducted compliance evaluation inspection. Effluent was clear. The field test results were within permitted limits. There were no violations noted during inspection. Recommendations were the NIST thermometer are used at the facility for sample storage temperature verification and are replaced or calibrated on an annual basis, and ensured the dumpster is properly lined. Requests was submitting sewage sludge supplemental reports with complete beneficial use information.
Other Comments:	There are no open violations associated with this facility or permittee.

Other Comments:

The table below summarizes the influent/effluent testing results submitted along with the application.

Influent Testing Results

Parameter	Min/Max Value	Average Value
BOD_5 (mg/L)	670 mg/L	174.27 mg/L
BOD_5 (lbs/day)	1669 lbs/day	259.37 lbs/day
TSS (mg/L)	612 mg/L	161.85 mg/L
TSS (lbs/day)	1964 lbs/day	241.97 lbs/day
TN (mg/L)	mg/L	mg/L
TN (lbs/day)	lbs/day	lbs/day
TP (mg/L)	mg/L	mg/L
TP (lbs/day)	lbs/day	lbs/day
NH_3-N (mg/L)	mg/L	mg/L
NH_3-N (lbs/day)	lbs/day	lbs/day
TDS (mg/L)	mg/L	mg/L
TDS (lbs/day)	lbs/day	lbs/day
TKN	mg/L	mg/L
NO_2-N + NO_3-N	mg/L	mg/L

Effluent Testing Results

Parameter	Min/Max Value	Average Value
pH (minimum)	6.70 S.U.	
pH (maximum)	7.60 S.U.	
D.O (minimum)	7.30 mg/L	9.94 mg/L
TRC	0.0/0.51 mg/L	0.03 mg/L
Fecal Coliform	1/76 No./100mL	5.65 No./100mL
$CBOD_5$	2.4/4.3 mg/L	2.8 mg/L
TSS	1/10 mg/L	3.2 mg/L
NH_3-N	0.1/0.43 mg/L	0.11 mg/L
TN	5.56/22.9 mg/L	10.77 mg/L
TP	0.1/0.65 mg/L	0.32 mg/L
Temp	F	F
TKN	0.5/1.9 mg/L	0.66 mg/L
NO_2-N + NO_3-N	5.06/22.4 mg/L	10.11 mg/L
TDS	528 mg/L	528 mg/L
Chloride	140 mg/L	140 mg/L
Bromide	0.2 mg/L	0.2 mg/L
Sulfate	36 mg/L	36 mg/L
Oil and Grease	mg/L	mg/L
Total Copper	0.02 mg/L	0.0075 mg/L
Total Lead	0.001 mg/L	0.001 mg/L
Total Zinc	0.021 mg/L	0.021 mg/L

Compliance History

DMR Data for Outfall 001 (from January 1, 2024 to December 31, 2024)

Parameter	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24
Flow (MGD) Average Monthly	0.216	0.133	0.171	0.206	0.260	0.113	0.135	0.199	0.328	0.308	0.262	0.424
Flow (MGD) Daily Maximum	0.928	0.282	0.564	0.566	1.441	0.271	0.490	0.443	1.557	0.941	0.664	1.962
pH (S.U.) Instantaneous Minimum	6.7	6.9	7.1	7.3	7.2	7.3	7.1	7.0	6.8	6.6	6.7	6.7
pH (S.U.) Instantaneous Maximum	7.6	7.4	7.4	7.5	7.5	7.6	7.4	7.4	7.2	7.2	7.1	7.2
DO (mg/L) Instantaneous Minimum	10.0	8.9	9.0	8.4	8.1	7.8	8.1	9.2	10.0	9.5	10.7	9.2
CBOD5 (lbs/day) Average Monthly	< 4.8	< 2.8	< 4.8	< 3.6	< 6.2	< 3.6	< 2.6	< 3.8	< 5.1	< 7.3	< 10	< 12.1
CBOD5 (lbs/day) Weekly Average	7.7	3.3	< 11.3	< 6.3	13.7	7.5	3.4	< 5.0	< 10.8	13.6	22.7	< 39.3
CBOD5 (mg/L) Average Monthly	< 2.6	< 2.5	< 2.5	< 2.4	< 2.7	< 3.4	< 2.9	< 2.5	< 2.4	< 3.1	< 3.5	< 2.6
CBOD5 (mg/L) Weekly Average	3.2	2.8	2.8	2.4	2.9	4.3	4.1	2.8	2.4	3.6	4.1	3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	248	237	252	236	376	229	176	246	280	283	314	559
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	351	255	367	379	828	418	211	288	365	460	637	1947
BOD5 (mg/L) Raw Sewage Influent Average Monthly	141	219	162	167	160	226	195	164	157	130	118	115
TSS (lbs/day) Average Monthly	4.0	3.0	5.0	4.0	5.0	2.0	3.0	2.0	5.0	6.0	5.0	11
TSS (lbs/day) Raw Sewage Influent Average Monthly	222	248	261	239	438	226	186	306	285	711	276	333
TSS (lbs/day) Raw Sewage Influent Daily Maximum	300	337	357	439	851	371	246	507	450	1952	576	1047

TSS (lbs/day) Weekly Average	5.6	3.9	14.1	7.8	9.5	3.3	7.1	3.2	13.5	8.0	11.1	32.7
TSS (mg/L) Average Monthly	2.0	3.0	3.0	3.0	3.0	2.0	3.0	1.0	2.0	3.0	2.0	3.0
TSS (mg/L) Raw Sewage Influent Average Monthly	124	229	169	160	201	221	200	209	154	383	103	80
TSS (mg/L) Weekly Average	3.0	3.0	5.0	3.0	4.0	4.0	6.0	2.0	3.0	4.0	2.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	5.0	3.0	< 2.0	< 1.0	< 2.0	7	< 3.0	< 2.0	< 2.0	< 1.0	< 1.0	< 3.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	28	4.0	2.0	2.0	12	55	24	11	10	3.0	2.0	16
UV Intensity (mW/cm²) Instantaneous Minimum	6.7	8.9	8.9	9.0	7.9	6.0	8.2	7.7	6.4	6.3	6.2	6.3
Nitrate-Nitrite (mg/L) Average Monthly	< 10.8	< 12.7	< 11.26	< 9.3	< 9.5	< 6.36	< 7.7	< 7.9	< 9.8	< 8.4	< 11.6	< 8.27
Total Nitrogen (mg/L) Average Monthly	< 11.5	< 13.2	< 11.88	< 9.78	< 10	< 7.09	< 8.2	< 8.5	< 10.42	< 10	< 12.1	< 10.21
Ammonia (lbs/day) Average Monthly	< 0.1	< 0.1	< 0.2	< 0.1	< 0.2	< 0.1	< 0.09	< 0.2	< 0.2	< 3.0	< 0.3	< 3.0
Ammonia (mg/L) Average Monthly	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.12	< 0.1	< 0.1	< 0.1	< 1.2	< 0.1	< 1.4
TKN (mg/L) Average Monthly	< 0.6	< 0.5	< 0.62	< 0.53	< 0.5	< 0.72	< 0.5	< 0.7	< 0.6	< 1.6	< 0.5	< 1.9
Total Phosphorus (lbs/day) Average Monthly	0.5	0.3	0.7	0.5	0.7	0.5	0.3	0.5	0.4	0.6	0.8	1.0
Total Phosphorus (mg/L) Average Monthly	0.26	0.26	0.35	0.31	0.31	0.52	0.28	0.33	0.2	0.26	0.27	0.28
Total Copper (lbs/day) Average Monthly	0.009	0.010	< 0.020	< 0.006	< 0.050	0.010	0.008	0.010	< 0.020	0.030	0.010	< 0.008
Total Copper (mg/L) Average Monthly	0.008	0.012	< 0.005	< 0.005	< 0.011	0.011	0.009	0.008	< 0.005	0.007	0.008	< 0.005
Total Hardness (mg/L) Average Monthly	168	224	116	183	216	203	216	199	92	145	173	140

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	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
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Light Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
$CBOD_5$ Nov 1 - Apr 30	77	123	XXX	25	40	50	1/week	8-Hr Composite
$CBOD_5$ May 1 - Oct 31	46	67	XXX	15	22	30	1/week	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	92	138	XXX	30	45	60	1/week	8-Hr Composite
TSS 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	2,000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	12	XXX	XXX	3.9	XXX	7.8	1/week	8-Hr Composite
Ammonia May 1 - Oct 31	4.0	XXX	XXX	1.3	XXX	2.6	1/week	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Phosphorus	6.0	XXX	XXX	2.0	XXX	4	1/week	8-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Copper	0.043	XXX	XXX	0.014	XXX	XXX	1/month	8-Hr Composite
Total Hardness	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.37
Latitude 39º 55' 9.10" **Longitude** -77º 14' 44.34"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

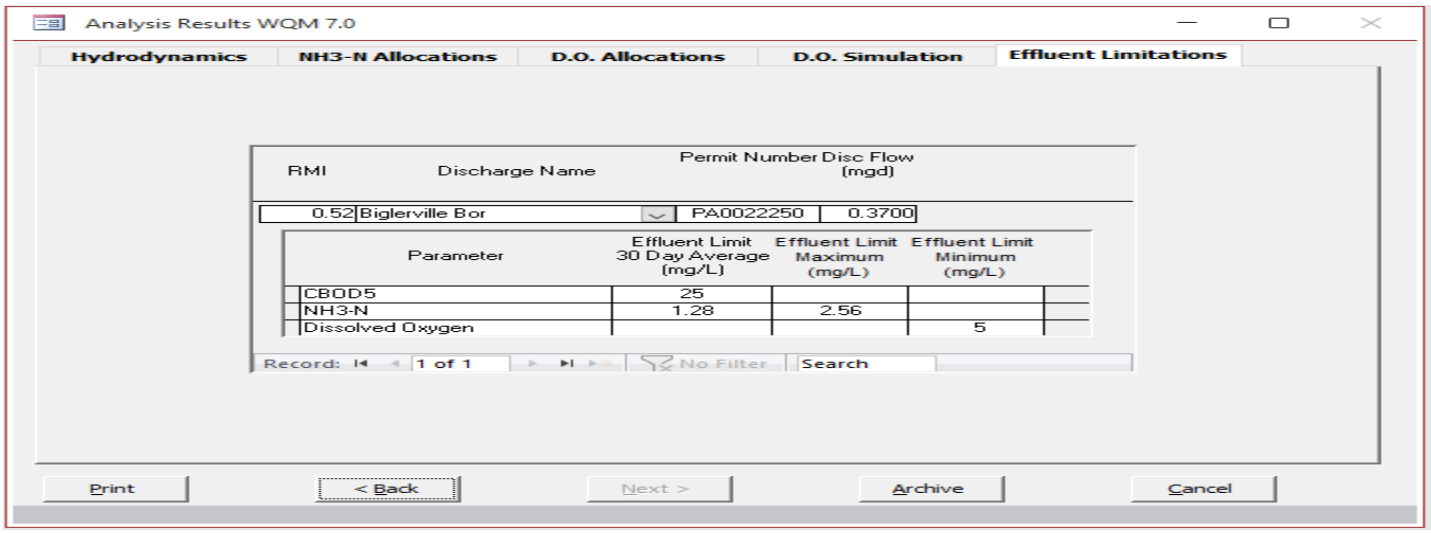
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	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)

Comments: TRC is not applied to this facility because disinfection is by UV.

Water Quality-Based Limitations

Ammonia (NH_3-N):
NH_3-N calculations will be based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the instream NH_3N criteria used in the attached computer model of the stream:

- Discharge pH = 7.0 (Default)
- Discharge Temperature = 25 ºC (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20 ºC (Default)
- Background NH_3-N = 0.0 (Default)



Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 1.28 (round of 1.3) mg/L as a monthly average and 2.56 (round of 2.6) mg/L instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects at the point of discharge. Therefore, the existing summer limits of 1.3 mg/L monthly average & 2.6 mg/L IMAX are same and will remain in the proposed permit. The existing winter average monthly limit of 3.9 mg/L & IMAX limit of 7.8 mg/L will remain in place. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Summer average monthly mass limit: 1.3 mg/L x 0.37 MGD x 8.34 = 4.01 (4.0) lbs/day
Winter average monthly mass limit: 3.9 mg/L x 0.37 MGD x 8.34 = 12.03 (12.0) lbs/day

Dissolved Oxygen (D.O.):
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Therefore, the existing winter permit 25.0 mg/L as AML, 40.0 mg/L as weekly average limit (AWL), & 50.0 mg/L as IMAX will remain in the proposed permit. The existing summer permit 15.0 mg/L as AML, 22.0 mg/L as weekly average limit (AWL), & 30.0 mg/L as IMAX will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Winter Average monthly mass limit: 25.0 mg/L x 0.37 MGD x 8.34 = 77.1 (77.0) lbs/day
Winter Average weekly mass limit: 40.0 mg/L x 0.37 MGD x 8.34 = 123.4 (123.0) lbs/day
Summer Average monthly mass limit: 15.0 mg/L x 0.37 MGD x 8.34 = 46.3 (46.0) lbs/day
Summer Average weekly mass limit: 22.0 mg/L x 0.37 MGD x 8.34 = 67.9 (67.0) lbs/day

The minimum monitoring frequency will remain the same as 1/week.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

Total Suspended Solids (TSS):
The existing technology-based limits of 30.0 mg/L average monthly, 45.0 mg/L weekly average, and 60.0 mg/L IMAX will remain in the proposed permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Average monthly mass limit: 30.0 mg/L x 0.37 MGD x 8.34 = 92.57 (92.0) lbs/day
Average weekly mass limit: 45.0 mg/L x 0.37 MGD x 8.34 = 138.86 (138.0) lbs/day

The average monthly and weekly average mass loadings will be rounded down to 92.0 lbs/day and 138.0 lbs/day, respectively. The minimum monitoring frequency will remain the same as 1/week.

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml.

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/quarter will be included in the permit to be consistent with the recommendation from this SOP.

Raw Sewage Influent Monitoring:
As a result of negotiation with EPA, influent monitoring of TSS and BOD_5 are required for any POTWs; therefore, influent sampling of BOD_5 and TSS will remain in the proposed permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for TSS and BOD_5 in the effluent.

Total Phosphorus:
The existing permit average monthly TP concentration of 2.0 mg/L, and 4.0 mg/L IMAX will remain in the proposed permit. Mass average monthly is calculated and also in the proposed permit.

Average monthly mass limit: 2.0 mg/L x 0.37 MGD x 8.34 = 6.17 (6.0) lbs/day

UV:
The UV system daily monitor and report the UV light intensity (mW/cm^2) will remain in the proposed permit.

Chesapeake Bay Strategy:
The Department formulated a strategy in April 2007, to comply with the EPA and Chesapeake Bay Foundation requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/L TN and 0.8 mg/L TP. Phase 4 (0.2 -0.4 MGD) and Phase 5 (below 0.2 MGD) will be required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001). Any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away.

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011 and Phase 2 in March 2012. In accordance with the Phase 2 WIP and its supplement, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal. This facility is classified as a phase 4, and has been monitoring Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen weekly and will continue to monitor them weekly during this permit cycle to collect data. There is limitation on Total Phosphorus in the permit, no monitoring is required.

Toxics:
The data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. Spreadsheet results are attached to this fact sheet (page 18-20). The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration 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.

Pollutant testing results on the current (2024) application were reviewed in comparison with DEP's Toxic Management Spreadsheet, version 1.4, May 2023, output recommends a routine monitoring and/or effluent limit requirements for Total Copper (Cu), and Total Zinc. Therefore, monthly monitoring/ effluent limitation requirements for these parameters are added in the proposed permit as follows:

☑ ***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	0.053	0.082	0.017	0.027	0.043	mg/L	0.017	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.18	AFC	Discharge Conc > 10% WQBEL (no RP)

Total Copper limit of 0.017 mg/L concentration & 0.053 lbs/day mass average monthly are recommended. However, the existing limits 0.014 mg/L concentration & 0.043 lbs/day mass average monthly are more stringent and will remain in the proposed permit.

Total Zinc monitoring and report concentration & mass of average monthly will be added in the proposed permit. During the next permit renewal cycle, the need for Zinc monitoring in the permit will be re-evaluated.

The Hardness monitoring and report average monthly requirements will remain in the proposed permit.

TDS, Sulfate, Chloride, Bromide & 1,4-Dioxane:
Under the authority of §92a.61, DEP has determined it should implement increased monitoring in NPDES permits for TDS, sulfate, chloride, bromide, and 1,4-dioxane. The following approach will be implemented for point source discharges upon issuance or reissuance of an individual NPDES permit:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.

The maximum daily TDS discharge submitted with the application is 528 mg/L which is equivalent to 1,629 lbs/day based on the permitted flow of 0.37 MGD. The discharge level for TDS is below the minimum 1,000 mg/L and 20,000 lbs/day, to require monitoring, therefore no monitoring of TDS, Chloride, Sulfate, and Bromide will be required in the permit. There is no data for 1,4-dioxane, therefore no monitoring is required for 1,4-dioxane.

Pretreatment Requirements:
The design annual average flow of the treatment plant is 0.37 MGD and the facility receives flow from no significant Industrial users. There is no approved pretreatment program for the facility, however, the permit contains standard conditions requiring the permittee to monitor and control industrial users if applicable.

Anti-backsliding

Not applicable to this permit.

Stormwater

No storm water outfall is associated with this facility.

Special Permit Conditions

The permit will contain the following special conditions:

1. Stormwater Prohibition. 2. Approval Contingencies, 3. Management of collected screenings, slurries, sludges and other solids. 4. Notification of Responsible Operator. 5. Restrictions on flow acceptance under certain conditions.

Biosolids Management

Digested sludge is dewatered using a filter belt press and hauled off site to landfill.

Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

WQM 7.0

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)

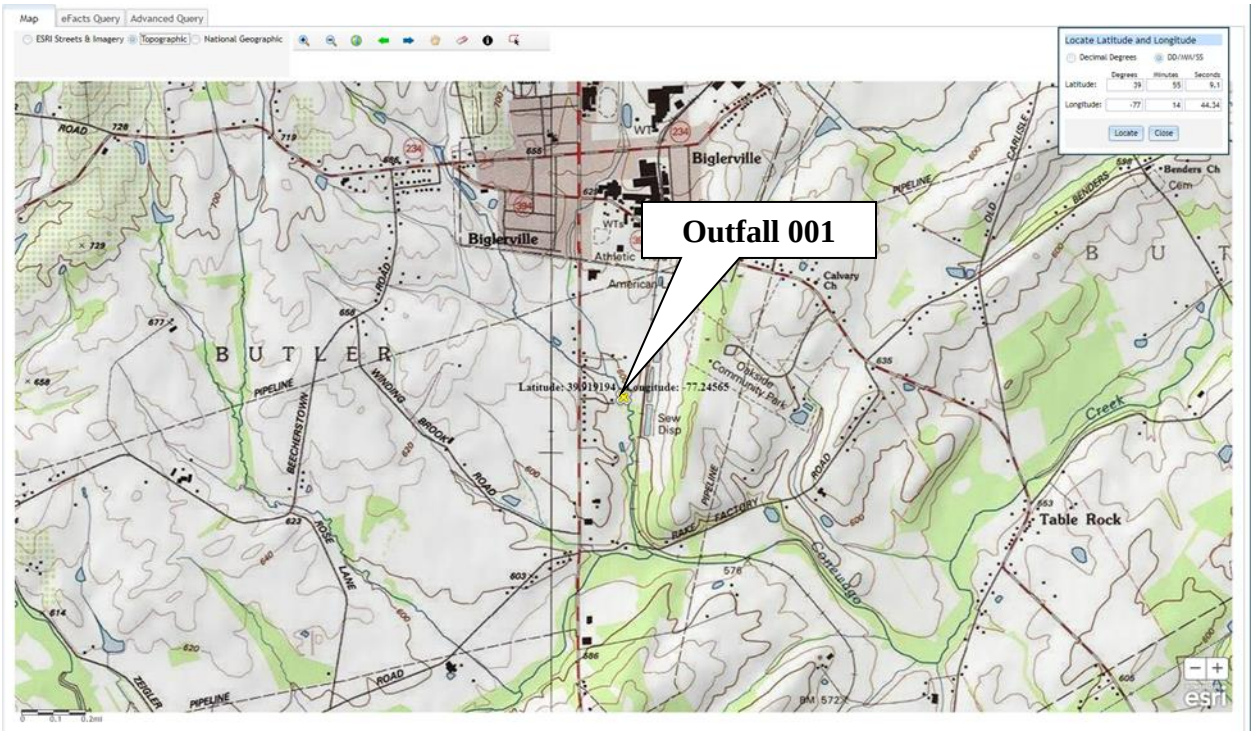
Two nodes were incorporated in the modeling effort.

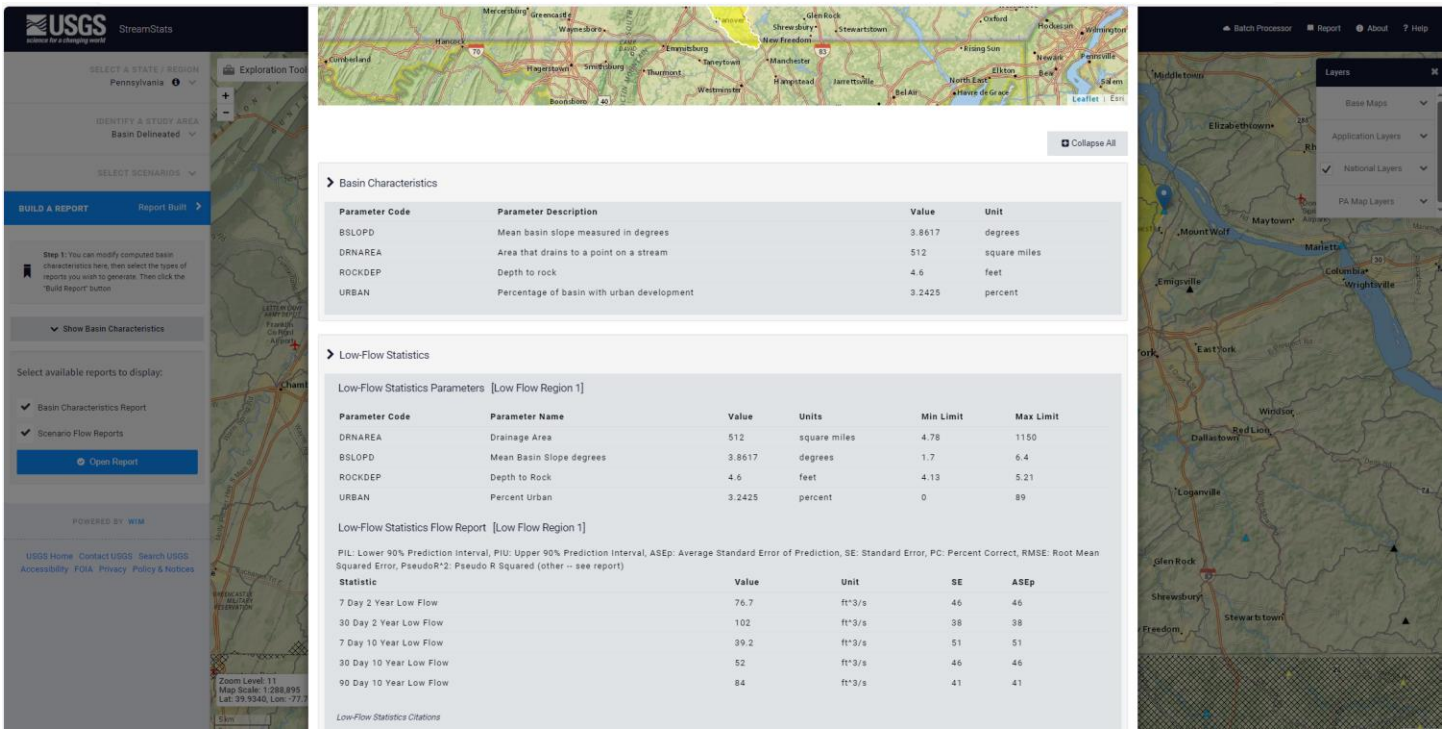
Node 1: Outfall 001 on Tri. 09140 to Conewago Creek (09140)

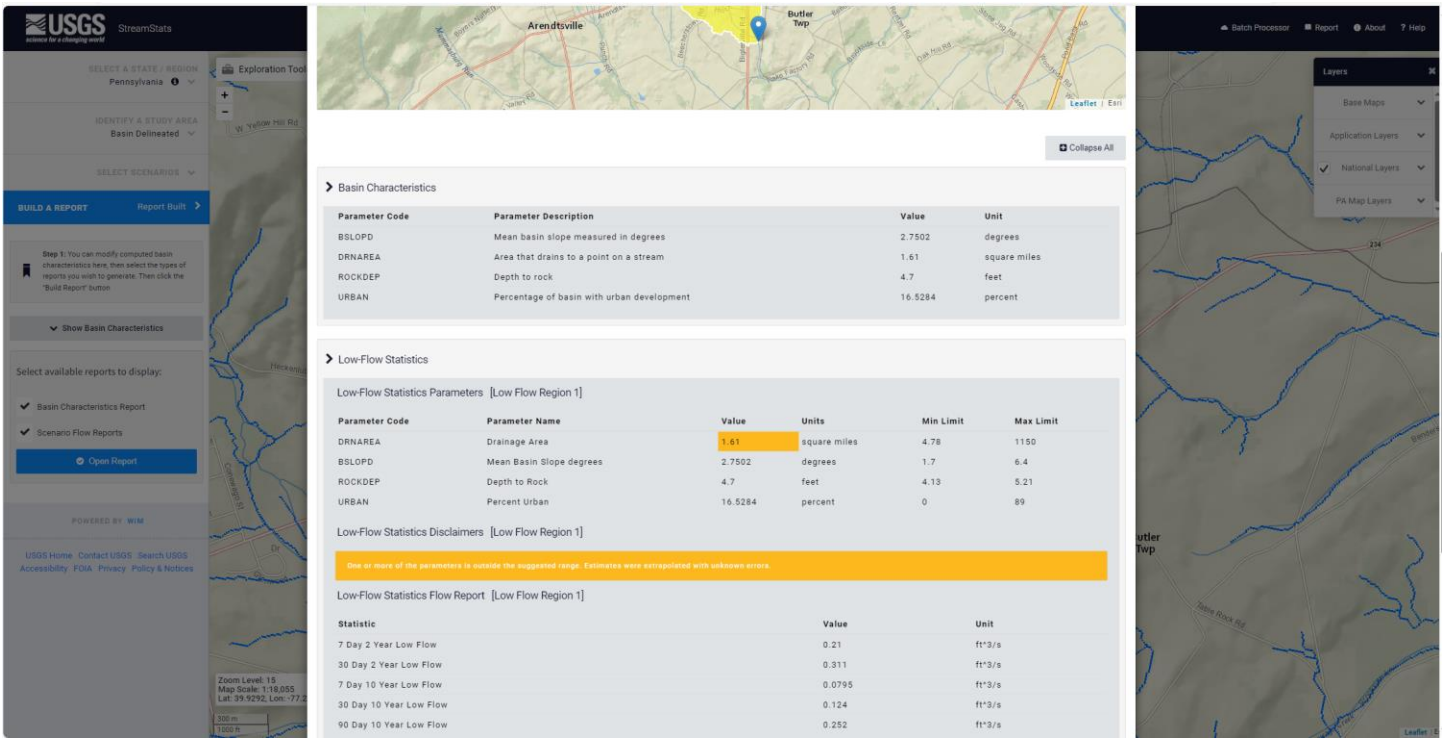
Elevation:	595 ft (USGS National Map Viewer)
Drainage Area:	1.61 mi.^{2} (USGS PA StreamStats)
River Mile Index:	0.52 (PA DEP eMapPA)
Low Flow Yield:	0.08 cfs/mi.^{2}
Discharge Flow:	0.37 MGD (NPDES Application)

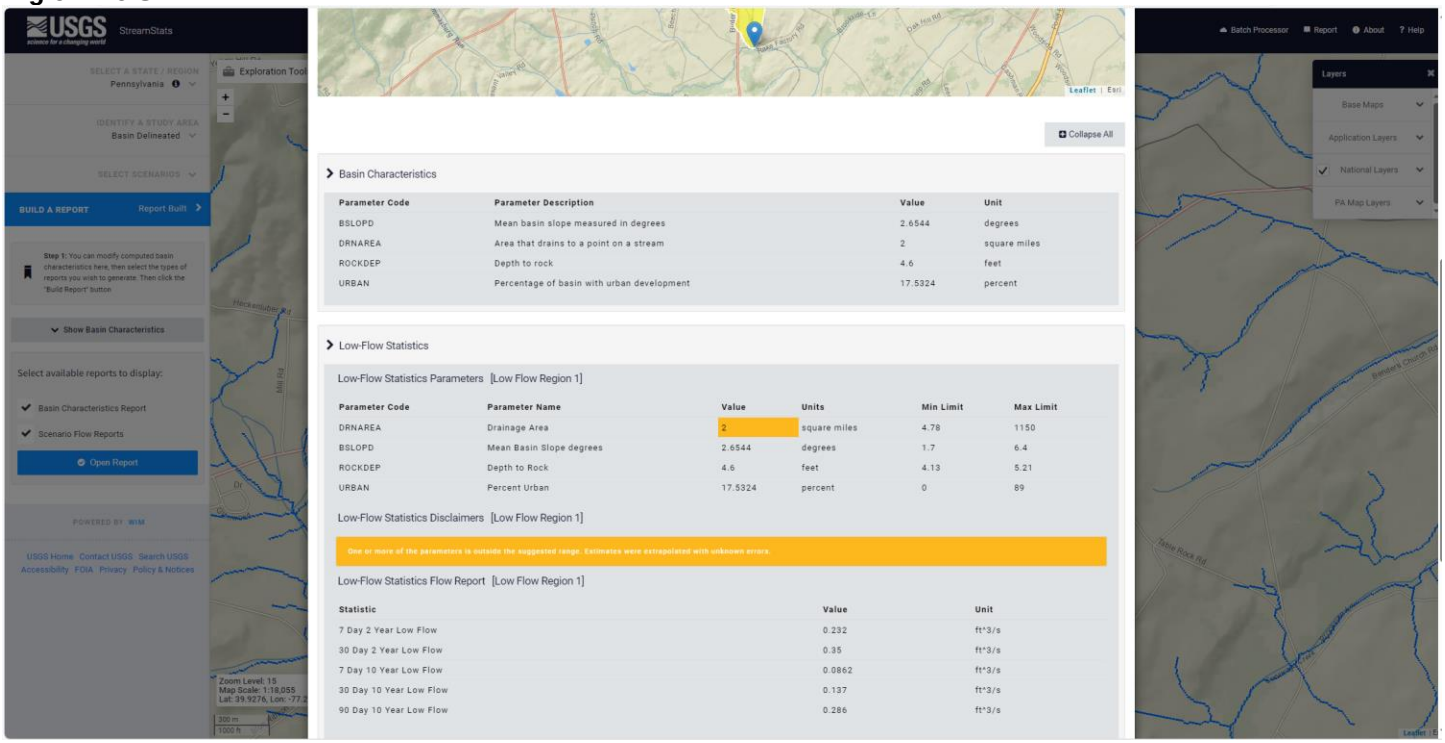
Node 2: Just before confluence with UNT to Conewago Creek (09140)

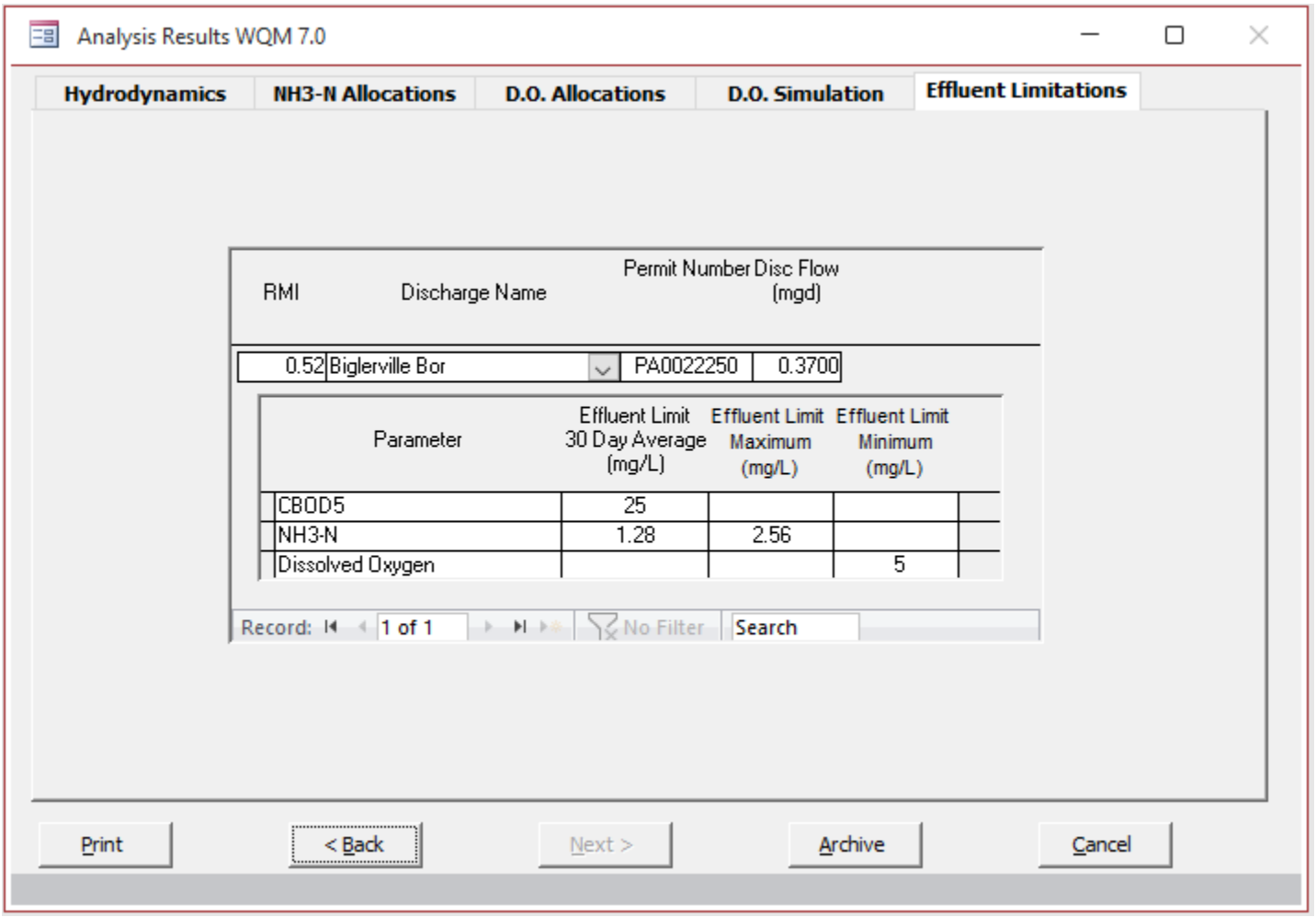
Elevation:	583 ft (USGS National Map Viewer)
Drainage Area:	2.0 mi.^{2} (USGS PA StreamStats)
River Mile Index:	0.001 (PA DEP eMapPA)
Low Flow Yield:	0.08 cfs/mi.^{2}
Discharge Flow:	0.000 MGD




USGS StreamStats
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 3.8617 | degrees
DRNAREA | Area that drains to a point on a stream | 512 | square miles
ROCKDEP | Depth to rock | 4.6 | feet
URBAN | Percentage of basin with urban development | 3.2425 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 512 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 3.8617 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 4.6 | feet | 4.13 | 5.21
URBAN | Percent Urban | 3.2425 | percent | 0 | 89
Low-Flow Statistics Flow Report [Low Flow Region 1]
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 76.7 | ft^3/s | 46 | 46
30 Day 2 Year Low Flow | 102 | ft^3/s | 38 | 38
7 Day 10 Year Low Flow | 39.2 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 52 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 84 | ft^3/s | 41 | 41


USGS StreamStats
Arendtsville
Butler Twp
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 2.7502 | degrees
DRNAREA | Area that drains to a point on a stream | 1.61 | square miles
ROCKDEP | Depth to rock | 4.7 | feet
URBAN | Percentage of basin with urban development | 16.5284 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 1.61 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 2.7502 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 4.7 | feet | 4.13 | 5.21
URBAN | Percent Urban | 16.5284 | percent | 0 | 89
Low-Flow Statistics Disclaimers [Low Flow Region 1]
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 1]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.21 | ft^3/s
30 Day 2 Year Low Flow | 0.311 | ft^3/s
7 Day 10 Year Low Flow | 0.0795 | ft^3/s
30 Day 10 Year Low Flow | 0.124 | ft^3/s
90 Day 10 Year Low Flow | 0.252 | ft^3/s


USGS StreamStats
Basin Characteristics
Parameter Code
Parameter Description
Value
Unit
BSLOPD
Mean basin slope measured in degrees
2.6544
degrees
DRNAREA
Area that drains to a point on a stream
2
square miles
ROCKDEP
Depth to rock
4.6
feet
URBAN
Percentage of basin with urban development
17.5324
percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code
Parameter Name
Value
Units
Min Limit
Max Limit
DRNAREA
Drainage Area
2
square miles
4.78
1150
BSLOPD
Mean Basin Slope degrees
2.6544
degrees
1.7
6.4
ROCKDEP
Depth to Rock
4.6
feet
4.13
5.21
URBAN
Percent Urban
17.5324
percent
0
89
Low-Flow Statistics Disclaimers [Low Flow Region 1]
Low-Flow Statistics Flow Report [Low Flow Region 1]
Statistic
Value
Unit
7 Day 2 Year Low Flow
0.232
ft^3/s
30 Day 2 Year Low Flow
0.35
ft^3/s
7 Day 10 Year Low Flow
0.0862
ft^3/s
30 Day 10 Year Low Flow
0.137
ft^3/s
90 Day 10 Year Low Flow
0.286
ft^3/s


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
0.52
Biglerville Bor
PA0022250
0.3700
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
1.28
2.56
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
Print
< Back
Next >
Archive
Cancel

rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07F	9140	Trib 09140 to Conewago 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)
0.520	BigglervilleWWTP	PA0022250	0.370	CBOD5	25		
				NH3-N	1.26	2.56	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07F	9140	Trib 09140 to Conewago 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
0.520	BigglervilleWWTP	11.67	2.56	11.67	2.56	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
0.520	BigglervilleWWTP	1.47	1.26	1.47	1.26	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
0.52	BigglervilleWWTP	25	25	1.26	1.26	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
07F	9140	Trib 09140 to Conewago Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.520	0.370	24.082	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
9.535	0.479	19.890	0.153
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
20.78	1.468	1.04	0.958
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
5.596	26.527	Owens	5
Reach Travel Time (days)			
0.207			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.021	20.03	1.02	5.89
0.041	19.31	1.00	6.10
0.062	18.61	0.98	6.25
0.083	17.95	0.97	6.36
0.103	17.30	0.95	6.46
0.124	16.68	0.93	6.54
0.145	16.08	0.91	6.62
0.165	15.50	0.89	6.69
0.186	14.94	0.87	6.75
0.207	14.41	0.86	6.82

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rptModelSpecs

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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

Wednesday, February 26, 2025 Version 1.1 Page 1 of 1

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07F	9140	Trib 09140 to Conewago 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												
0.520	0.13	0.00	0.13	.5724	0.00436	.479	9.54	19.89	0.15	0.207	26.06	7.00
Q1-10 Flow												
0.520	0.08	0.00	0.08	.5724	0.00436	NA	NA	NA	0.15	0.215	26.37	7.00
Q30-10 Flow												
0.520	0.18	0.00	0.18	.5724	0.00436	NA	NA	NA	0.16	0.199	25.83	7.00

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rptGeneral

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
07F	9140	Trib 09140 to Conewago Creek	0.520	585.00	1.01	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	0.060	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
BiglervilleWWTP	PA0022250	0.3700	0.3700	0.3700	0.000	25.00	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	5.00	8.24	0.00	0.00
NH3-N	1.28	0.00	0.00	0.70

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rptGeneral

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
07F	9140	Trib 09140 to Conewago Creek	0.001	580.00	2.00	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	0.060	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
BiglervilleSor	PA0022250	0.0000	0.0000	0.0000	0.000	25.00	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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Toxic:

* Discharge pH = 7.4 (DMR average) (12 months average from 1/1/24 to 12/31/24)
* Discharge Hardness = 173 mg/L (DMR average)
* Stream pH = 7.0 (Default)
* Stream Hardness = 100 mg/L (Default)
* Background NH_3-N = 0 mg/L (Default)

Two nodes were incorporated in the modeling effort.

Node 1: Outfall 001 on Tri. 09140 to Conewago Creek (09140)
- Elevation: 595 ft (USGS National Map Viewer)
- Drainage Area: 1.61 $mi.^2$ (USGS PA StreamStats)
- River Mile Index: 0.52 (PA DEP eMapPA)
- Low Flow Yield: 0.08 $cfs/mi.^2$
- Discharge Flow: 0.37 MGD (NPDES Application)

Node 2: Just before confluence with UNT to Conewago Creek (09140)
- Elevation: 583 ft (USGS National Map Viewer)
- Drainage Area: 2.0 $mi.^2$ (USGS PA StreamStats)
- River Mile Index: 0.001 (PA DEP eMapPA)
- Low Flow Yield: 0.08 $cfs/mi.^2$
- Discharge Flow: 0.000 MGD

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Biglerville Borough NPDES Permit No.: PA0022250 Outfall No.: 001

Evaluation Type: Custom / Additives Wastewater Description: UNT to Conewago Creek

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
0.37	173	7.4						

Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Total Dissolved Solids (PWS)	mg/L		528									
Chloride (PWS)	mg/L		140									
Bromide	mg/L		0.2									
Sulfate (PWS)	mg/L		36									
Total Copper	mg/L		0.02									
Total Lead	mg/L		0.001									
Total Zinc	mg/L		0.021									

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Biglerville Borough, NPDES Permit No. PA0022250, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **UNT to Conewago Creek** No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	009140	0.52	595	1.61			Yes
End of Reach 1	009140	0.001	583	2			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.52	0.08										100	7		
End of Reach 1	0.001	0.08										100	7		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.52														
End of Reach 1	0.001														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Biglerville Borough, NPDES Permit No. PA0022250, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.191 PMF: 1 Analysis Hardness (mg/l): 159.59 Analysis pH: 7.29

Pollutants	Stream Conc (µg/L)	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	20.876	21.7	26.6	Chem Translator of 0.96 applied
Total Lead	0	0		0	107.012	148	181	Chem Translator of 0.723 applied
Total Zinc	0	0		0	174.126	178	218	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 0.191 PMF: 1 Analysis Hardness (mg/l): 159.59 Analysis pH: 7.29

Pollutants	Stream Conc (µg/L)	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	13.353	13.9	17.0	Chem Translator of 0.96 applied
Total Lead	0	0		0	4.170	5.77	7.07	Chem Translator of 0.723 applied
Total Zinc	0	0		0	175.550	178	218	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 0.191 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	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): 1.419 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	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	0.053	0.082	0.017	0.027	0.043	mg/L	0.017	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.18	AFC	Discharge Conc > 10% WQBEL (no 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	7.07	µg/L	Discharge Conc ≤ 10% WQBEL

Proposed Effluent Limitations and Monitoring Requirements

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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: 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	Daily 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
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
$CBOD_5$ Nov 1 - Apr 30	77.0	123.0	XXX	25.0	40.0	50.0	1/week	8-Hr Composite
$CBOD_5$ May 1 - Oct 31	46.0	67.0	XXX	15.0	22.0	30.0	1/week	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	92.0	138.0	XXX	30.0	45.0	60.0	1/week	8-Hr Composite
TSS 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	2,000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ammonia Nov 1 - Apr 30	12	XXX	XXX	3.9	XXX	7.8	1/week	8-Hr Composite
Ammonia May 1 - Oct 31	4.0	XXX	XXX	1.3	XXX	2.6	1/week	8-Hr Composite
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	6.0	XXX	XXX	2.0	XXX	4.0	1/week	8-Hr Composite
Total Copper	0.043	XXX	XXX	0.014	XXX	XXX	1/month	8-Hr Composite
Total Zinc	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Hardness	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

Compliance Sampling Location:

Other Comments:

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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other: