pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0247618**
Facility Type	**Municipal**	APS ID	**740053**
Major / Minor	**Minor**	Authorization ID	**1424420**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**East Salem Sewer Authority**	Facility Name	**East Salem STP**
Applicant Address	7530 Route 235	Facility Address	Intersection Pa 333 & Pa 235
	Thompsontown, PA 17094-8739		East Salem, PA 17059
Applicant Contact	Richard Gilson	Facility Contact	
Applicant Phone	(717) 463-3434	Facility Phone	
Client ID	285165	Site ID	459540
Ch 94 Load Status	Not Overloaded	Municipality	Delaware Township
Connection Status	No Limitations	County	Juniata
Date Application Received	January 23, 2023	EPA Waived?	Yes
Date Application Accepted	January 25, 2023	If No, Reason	

Purpose of Application .Renewal of existing NPDES Permit

Summary of Review

The East Salem Sewer Authority (ESSA) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued to ESSA on June 22, 2018. The permit expired on June 23, 2023 but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days. A file review of documents associated with the discharge or permittee may be available at the PA DEP southcentral regional office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO file review coordinator at 717.705.4700.

Sludge use and disposal description and location(s): Hauled offsite to McAlisterville Area Joint Authority STP

Public Participation

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.

Approve	Deny	Signatures	Date
x		Aaron Baar Aaron Baar / Project Manager	March 26, 2024
x		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	April 15, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.02
Latitude	40º 36' 27.40"	Longitude	-77º 14' 12.52"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Delaware Creek (TSF)	Stream Code	11754
NHD Com ID	66204173	RMI	4.54
Drainage Area	4.42 mi^2	Yield (cfs/mi^2)	0.0355
Q_{7-10} Flow (cfs)	0.157	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	605.11	Slope (ft/ft)	
Watershed No.	12-B	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Newport Borough Water Authority		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI	12.7	Distance from Outfall (mi)	14.29

Changes Since Last Permit Issuance: No changes since the last issuance of the ESSA's NPDES permit.

Drainage Area

The discharge is to Delaware Creek at RMI 4.54. A drainage area upstream of the discharge is determined to be 4.42 sq.mi. according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

According to StreamStats, the watershed has a Q_{7-10} of 0.157 cfs. This information was used to obtain a LFY, a chronic 30-day (Q_{30-10}) and acute (Q_{1-10}) exposure stream flows for the discharge point as follows (Guidance No. 391-2000-023).

Q_{7-10} = 0.157 cfs
Q_{30-10} = 1.36 * 0.157 cfs = 0.214 cfs
Q_{1-10} = 0.64 * 0.157 cfs = 0.100 cfs
LFY = 0.157 cfs/4.42 mi^2 = 0.0355 cfs/mi^2

Delaware Creek

25 Pa Code §93.9 classifies the receiving water, Delaware Creek, with a TSF Existing Use designation. No special protection waters are impacted by this discharge. The discharge is in a stream segment listed as attaining use in the 2024 Integrated Report. Effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Local Watershed Total Maximum Daily Loads (TMDLs)

According to PA's 2024 Integrated Water Quality Monitoring and Assessment Report, Delaware Creek in the vicinity of the point of discharge is not impaired/Category 2, indicating that Delaware Creek is a water where some but not

all uses are met. The assessment status of the remaining uses may be unknown because data are insufficient to assess the water, or it may be impaired.

Public Water Supply Intake

The nearest downstream public water supply intake is the Newport Borough Water Authority intake located on the Juniata River approximately 14.3 miles from the discharge. Considering the distance and nature, the discharge is not expected to significantly affect the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: East Salem Sewer Authority

WQM Permit No.	Issuance Date
3405401 T-1	Jan 16, 2009
3405401	Dec 14, 2005

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Septic Tank Sand Filter	Ultraviolet	0.02

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.02	37	Not Overloaded		Other WWTP

ESSA owns and operates the sanitary wastewater treatment facility located in Delaware Township, Juniata County. The facility only serves East Salem Township, all wastes are residential in nature, and all sewer systems are 100% separated. The annual average design flow is 0.020 MGD (incorrectly listed as 0.010 MGD in application), this facility utilizes Orenco Advantex Wastewater system consisting of three 20,000 gallon septic tanks, one 25,000 gallon recirculation tank, six Orenco units, one UV Disinfection unit, a re-aeration unit and an outfall structure to Delaware Creek. No process amendment chemicals are listed in the NPDES permit renewal application.

The facility's previous Fact Sheet from the previous renewal indicates that that are two commercial facilities connected to the treatment plant: Tedd Wood Cabinets and Sensenig's Furniture. The application states that there are no commercial facilities connected. ; consequently, effluent test results are not presented for Total Copper, Total Lead and Total Zinc. It is recommended that these parameters be tested for and reported in the next permit renewal application.

Compliance History	
Summary of DMRs:	DMR results for the past year are presented below.
Summary of Inspections:	Since the last renewal of the facility's NPDES permit, the following inspections have been logged: April 18, 2019: An annual inspection was conducted by Michael Benham. No violations were noted.

Other Comments: As of March 26, 2024, there are no open violations associated with this facility.

Existing Effluent Limitations and Monitoring Requirements

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	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	4.0	6.5	XXX	25.0	40.0	50	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
TSS	5.0	7.5	XXX	30.0	45.0	60	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
UV Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	2.0	XXX	XXX	11.0	XXX	23	2/month	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-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		
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

Compliance History

DMR Data for Outfall 001 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.013	0.011	0.007	0.01	0.007	0.011	0.01	0.006	0.009	0.008	0.01	0.007
Flow (MGD) Daily Maximum	0.048	0.024	0.013	0.016	0.013	0.018	0.038	0.01	0.015	0.034	0.018	0.013
pH (S.U.) Daily Minimum	6.42	6.7	6.52	6.41	6.6	6.52	6.99	7.02	6.6	6.8	6.83	6.63
pH (S.U.) Daily Maximum	6.82	7.12	7.3	6.93	6.84	7.03	7.49	7.51	8.8	7.05	7.04	6.97
DO (mg/L) Daily Minimum	6.91	7.04	7.79	7.24	7.07	6.36	7.15	7.06	5.7	7.6	7.29	8.05
CBOD5 (lbs/day) Average Monthly	2.0	1.0	1.0	0.3	0.3	0.4	0.3	0.4	0.5	0.5	2.0	0.7
CBOD5 (lbs/day) Weekly Average	2.0	1.4	1.7	0.4	0.3	0.4	0.3	0.6	0.5	0.8	2.9	0.8
CBOD5 (mg/L) Average Monthly	15.0	10.0	11.0	4.0	4.0	4.0	3.0	5.0	7.0	7.0	18.0	10.0
CBOD5 (mg/L) Weekly Average	18.1	12.1	17.1	4.43	3.87	4.74	3.57	7.21	8.43	11.6	25.0	13.9
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	19	34	17	14	30	13	18	19	13	14	18	30

BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	20	45	20	18	33	17	21	19	15	17	19	34
BOD5 (mg/L) Raw Sewage Influent Average Monthly	188	325	274	176	385	137	235	275	213	218	165	462
TSS (lbs/day) Average Monthly	2.0	1.0	2.0	0.7	0.5	0.6	1.0	0.5	2.0	1.0	2.0	0.5
TSS (lbs/day) Raw Sewage Influent Average Monthly	11	36	12	12	19	14	6.0	12	7.0	9.0	12	34
TSS (lbs/day) Raw Sewage Influent Daily Maximum	13	54	13	12	21	22	9.0	14	8.0	10.0	13	45
TSS (lbs/day) Weekly Average	2.4	1.7	3.6	0.7	0.6	0.9	2.4	0.7	2.0	1.2	2.4	0.6
TSS (mg/L) Average Monthly	19.0	13.0	22.0	8.0	7.0	6.0	14.0	6.0	23.0	18.0	15.0	8.0
TSS (mg/L) Raw Sewage Influent Average Monthly	106	340	186	151	240	128	66	176	104	152	112	553
TSS (mg/L) Weekly Average	26.0	14.4	36.0	8.40	8.0	6.4	22.0	8.0	23.6	21.2	24.4	12.4
Fecal Coliform (No./100 ml) Geometric Mean	297	30	4.0	69	13	35	20	10	10.0	83	273	170
Fecal Coliform (No./100 ml) Instantaneous Maximum	749	218	4.0	226	39.2	157	99.6	10	10.0	345	556	279
UV Intensity (mW/cm²) Daily Minimum	1.8	1.3	1.4	1.9	1.7	0.5	0.4	1.0	1.3	1.4	1.5	1.6
Nitrate-Nitrite (mg/L) Average Monthly	5.83	7.53	12.0	8.51	8.21	8.15	7.76	10.5	10.6	9.36	10.9	15.2
Nitrate-Nitrite (lbs) Total Monthly	17	19	21	20	18	34	26	18	30	19	39	46
Total Nitrogen (mg/L) Average Monthly	16.9	16.0	17.86	13.9	11.5	13.4	12.9	16.2	15.8	22.6	84	21.22
Total Nitrogen (lbs) Total Monthly	48	41	31	32	26	55	43	28	45	45	84	64
Total Nitrogen (lbs) Total Annual					808							

Ammonia (lbs/day) Average Monthly	0.8	0.7	0.8	0.3	0.3	0.4	0.2	0.3	0.3	0.5	1.1	0.7
Ammonia (mg/L) Average Monthly	8.0	7.0	8.0	4.0	4.0	4.0	3.0	4.0	5.0	7.0	10	9.0
Ammonia (lbs) Total Monthly	24.5	21.6	22.6	9.7	9.4	11.6	7.5	9.6	10.5	13.7	33.5	18.8
Ammonia (lbs) Total Annual					268							
TKN (mg/L) Average Monthly	11.1	8.44	5.86	5.34	3.29	5.21	5.14	5.67	5.28	13.3	12.5	6.12
TKN (lbs) Total Monthly	32	22.0	10	12	7.0	22	17	10	15	27	45	19
Total Phosphorus (mg/L) Average Monthly	5.17	6.2	8.96	8.0	8.44	5.14	4.68	9.06	5.61	5.3	4.48	4.41
Total Phosphorus (lbs) Total Monthly	15	16.0	16	19	19	21	16	16	16.0	11.0	16	13
Total Phosphorus (lbs) Total Annual					205							

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .02
Latitude 40º 36' 28.00" **Longitude** -77º 14' 13.00"
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: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. The model was utilized, and the model output indicated that existing TBEL for CBOD5 and the existing WQBELs for NH3-N could be higher given current low-flow conditions in the receiving water, but due to anti-backsliding provisions the existing limits will be left intact.

The model also indicates that the existing DO limit of 5.0 mg/L is still protective of water quality.

Currently, the facility has weekly average limits for CBOD5 and TSS, but sampling requirements of only 2/month. In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033), which states that weekly average limits for CBOD5 and TSS will not be imposed where the sampling frequency is less than 1/week, the weekly limits for CBOD5 and TSS are proposed to be eliminated in this permit.

Toxics

DEP's NPDES permit application for minor sewages (less than 0.1 MGD) requires sampling for Total Copper, Total Lead, and Total Zinc when commercial and industrial operations are in the service area. The facility's previous Fact Sheet from the previous renewal indicates that that are two commercial facilities connected to the treatment plant: Tedd Wood Cabinets and Sensenig's Furniture. The application states that there are no commercial facilities connected. It is recommended that these parameters be tested for and reported in the next permit renewal application.

Best Professional Judgment (BPJ) Limitations

Total Phosphorus & Total Nitrogen

DEP's SOP no. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, a routine monitoring for TKN, Nitrate-Nitrite, and TN are recommended to be continued in this permit. Sampling frequency for TKN, Nitrate-Nitrite, TN, and TP are currently required 1/month.

UV Disinfection

SOP No. BPNPSM-PMT- 033 requires monitoring of UV transmittance (%), UV dosage (µW/cm^2 or mj/cm^2), or UV intensity (µW/cm^2 or mj/cm^2) at the same monitoring frequency that would be used for TRC. The existing monitoring and reporting requirement for UV intensity (mW/cm^2) from the last renewal will continue.

Additional Considerations

Flow Monitoring

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

E. Coli Monitoring

In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033) and as authorized by § 92a.61 of the PA Code, annual E. Coli monitoring has been proposed in this permit. The collection method will be via grab sample.

Chesapeake Bay TMDL

The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's 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 received 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 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were 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).

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, Phase 2 in March 2012 and Phase 3 in December 2019. In accordance with the Phase 3 WIP, 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.

The Phase 3 WIP categorizes this facility as a phase 5 non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annual. As discussed previously, twice monthly testing of these pollutants is proposed in this permit.

Monitoring Frequency and Sample Type

Unless discussed otherwise above, the permit's monitoring frequency and sample type for all parameters will remain unchanged from the last permit renewal.

Antidegradation Requirements

All effluent limitations and monitoring requirements 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.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal. This approach is in accordance with 40 CFR §122.44(l(1).

Annual Fees

An annual fee clause was added to the permit in accordance with 25 Pa. Code § 92a.62. The facility covered by the permit is classified in the Minor Sewage Facility <0.05 MGD fee category, which has an annual fee of $500.

eDMR Reporting

A requirement has been added to the permit requiring the submission of all DMRs and Supplemental Forms through the eDMR system. The facility has already been utilizing the eDMR system.

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.

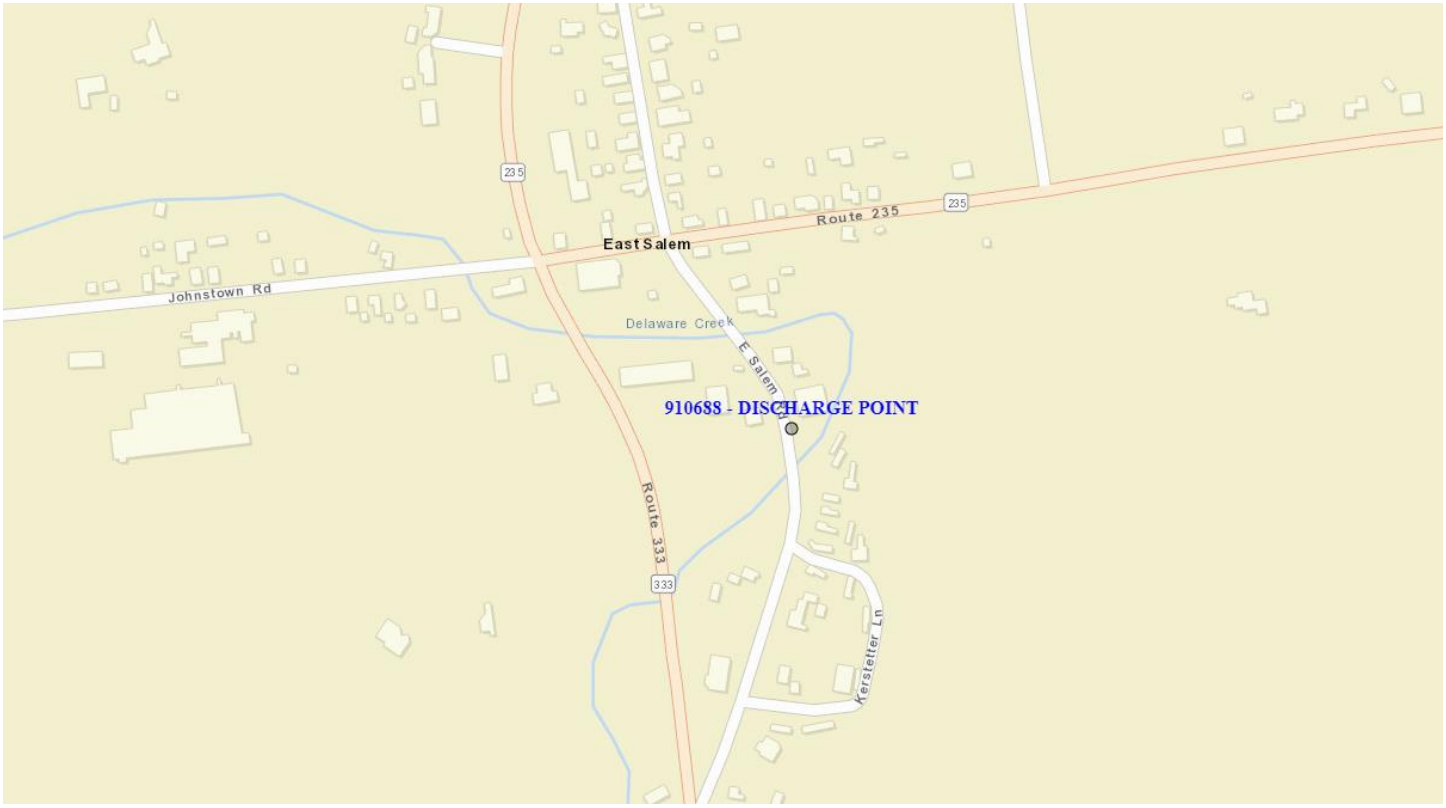
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	4.0	XXX	XXX	25.0	XXX	50	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
TSS	5.0	XXX	XXX	30.0	XXX	60	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

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)	Required
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	2.0	XXX	XXX	11.0	XXX	23	2/month	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

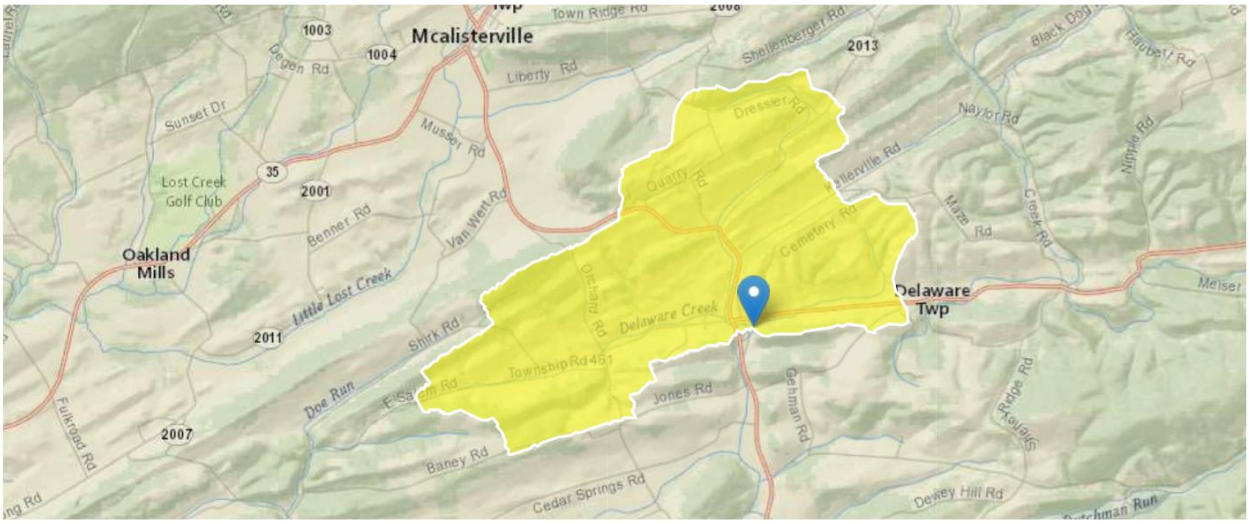
Compliance Sampling Location: Outfall 001

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:
☐	Other:


235
Route 235
235
East Salem
Johnstown Rd
Delaware Creek
E Salem Ln
910688 - DISCHARGE POINT
Route 333
333
Kerstetter Ln

StreamStats Report

Region ID: PA
Workspace ID: PA20240324123430296000
Clicked Point (Latitude, Longitude): 40.60820, -77.23638
Time: 2024-03-24 08:34:53 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	5.58	percent
DRNAREA	Area that drains to a point on a stream	4.42	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.4	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.09	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4.42	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.09	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.4	feet	3.32	5.65
CARBON	Percent Carbonate	5.58	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	0.371	ft^3/s
30 Day 2 Year Low Flow	0.518	ft^3/s
7 Day 10 Year Low Flow	0.157	ft^3/s
30 Day 10 Year Low Flow	0.22	ft^3/s
90 Day 10 Year Low Flow	0.358	ft^3/s

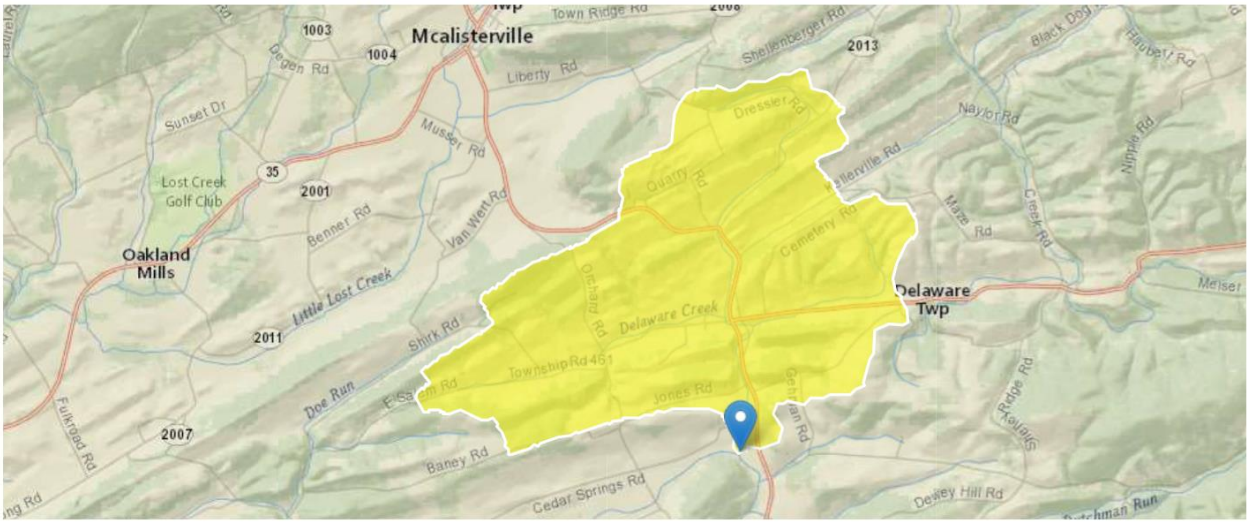
Low-Flow Statistics Citations

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: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20240324124500409000
Clicked Point (Latitude, Longitude): 40.59551, -77.23818
Time: 2024-03-24 08:45:21 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	7.89	percent
DRNAREA	Area that drains to a point on a stream	5.24	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.3	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.27	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.24	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.27	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.3	feet	3.32	5.65
CARBON	Percent Carbonate	7.89	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.41	ft^3/s	38	38
30 Day 2 Year Low Flow	0.576	ft^3/s	33	33
7 Day 10 Year Low Flow	0.17	ft^3/s	51	51
30 Day 10 Year Low Flow	0.241	ft^3/s	46	46
90 Day 10 Year Low Flow	0.392	ft^3/s	36	36

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: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
12B	11754	DELAWARE 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)
4.540	ESSA	PA0247618	0.020	CBOD5	25		
				NH3-N	14.31	28.62	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
12B	11754	DELAWARE 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
4.540	ESSA	15.2	50	15.2	50	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
4.540	ESSA	1.81	14.31	1.81	14.31	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)		
4.54	ESSA	25	25	14.31	14.31	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
12B	11754	DELAWARE CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
4.540	0.020	20.823	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
7.791	0.393	19.846	0.061
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.79	0.795	2.36	0.746
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.709	19.255	Owens	6
Reach Travel Time (days)			
0.994			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.099	5.33	2.19	8.12
0.199	4.91	2.03	8.12
0.298	4.52	1.89	8.12
0.398	4.17	1.75	8.12
0.497	3.84	1.63	8.12
0.597	3.53	1.51	8.12
0.696	3.26	1.40	8.12
0.796	3.00	1.30	8.12
0.895	2.76	1.21	8.12
0.994	2.55	1.12	8.12

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	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
12B	11754	DELAWARE 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												
4.540	0.16	0.00	0.16	.0309	0.00751	.393	7.79	19.85	0.06	0.994	20.82	7.00
Q1-10 Flow												
4.540	0.10	0.00	0.10	.0309	0.00751	NA	NA	NA	0.05	1.215	21.18	7.00
Q30-10 Flow												
4.540	0.21	0.00	0.21	.0309	0.00751	NA	NA	NA	0.07	0.858	20.63	7.00

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
12B	11754	DELAWARE CREEK	**4.540**	605.11	4.42	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	0.100	0.00	0.16	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
ESSA	PA0247618	0.0200	0.0200	0.0200	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

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
12B	11754	DELAWARE CREEK	**4.540**	605.11	4.42	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	0.100	0.00	0.16	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
ESSA	PA0247618	0.0200	0.0200	0.0200	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