

Application Type Renewal
Facility Type Industrial
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL INDUSTRIAL WASTE (IW)
AND IW STORMWATER**

Application No. PA0009423
APS ID 18476
Authorization ID 1532502

Applicant and Facility Information

Applicant Name	<u>Everett Borough Area Municipal Authority Bedford County</u>	Facility Name	<u>Everett Borough Water System</u>
Applicant Address	<u>100 Mechanic Street Everett, PA 15537-1177</u>	Facility Address	<u>1065 Raystown Road Everett, PA 15537-1177</u>
Applicant Contact	<u>Kirk Feaster</u>	Facility Contact	<u>Travis Horne</u>
Applicant Phone	<u>(814) 652-9202</u>	Facility Phone	<u>(814) 652-9202</u>
Client ID	<u>87467</u>	Site ID	<u>135942</u>
SIC Code	<u>4941</u>	Municipality	<u>West Providence Township</u>
SIC Description	<u>Trans. & Utilities - Water Supply</u>	County	<u>Bedford</u>
Date Application Received	<u>July 1, 2025</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>August 26, 2025</u>	If No, Reason	<u></u>
Purpose of Application	<u>This is an application request for NPDES renewal</u>		

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Everett Borough Water System located at 1065 Raystown Road, Everett, PA 15537 in Bedford County, municipality of West Providence Township. The existing permit became effective on February 1, 2021 and expires(d) on January 31, 2026. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on July 1, 2025.

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 0.028 MGD treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as an Industrial Waste Facility due to the type of wastewater and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Bedford County Commissioners, Bedford County Planning Commission, and West Providence Township and the notice was received by the parties on April 25, 2025 and April 28, 2025, .

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Johns Branch. The sequence of receiving streams that the Johns Branch discharges into are Raystown Branch Juniata River, Juniata River, Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for warm water fish (WWF) and migratory fish

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	December 22, 2025
X		Daniel W. Martin, P.E. / Environmental Engineer Manager Daniel W. Martin	February 6, 2026

Summary of Review

(MF). 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 Johns Branch is a Category 2 stream listed in the 2024 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life. 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:

- **Due to estimation of Q710 from StreamStats, TRC and Total aluminum effluent limits have been relaxed**

Sludge use and disposal description and location(s): No biosolids/sewage sludge was disposed in 2024.

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: Everett Borough Area MA

NPDES Permit # PA0009423

Physical Address: 1065 Raystown Road
Everett, PA 15537

Mailing Address: 100 Mechanic Street
Everett, PA 15537

Contact: Kirk Feaster
Manager
(814) 652-9202
watersewer@everettboro.com

Consultant: There was not a consultant utilized for this NPDES renewal.

1.2 Permit History

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 1065 Raystown Road, Everett, PA 15537. 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

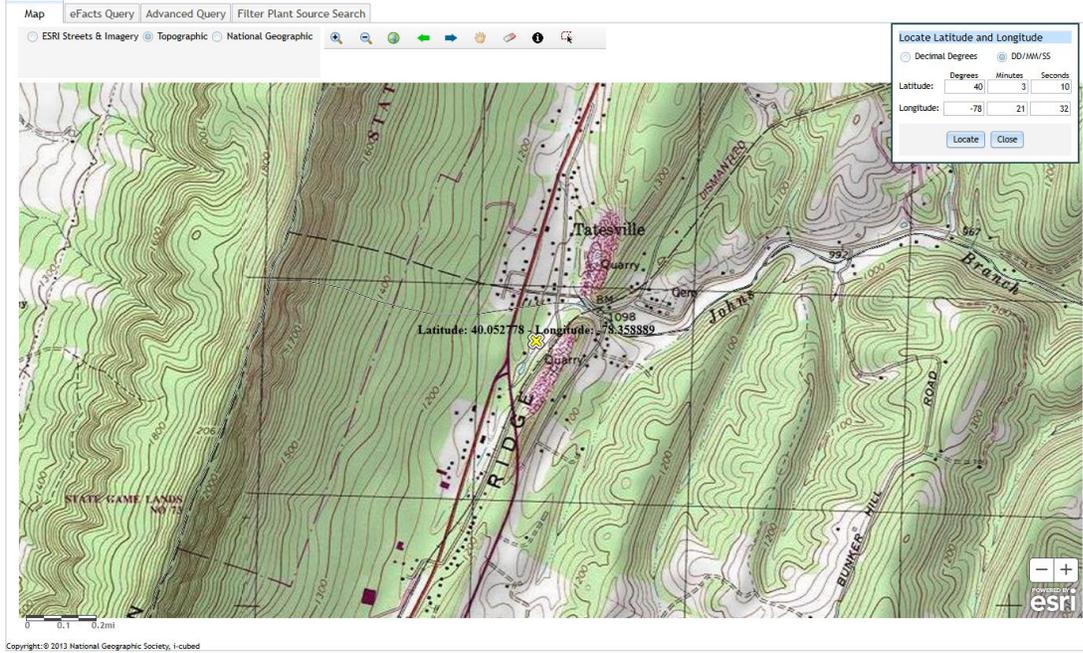
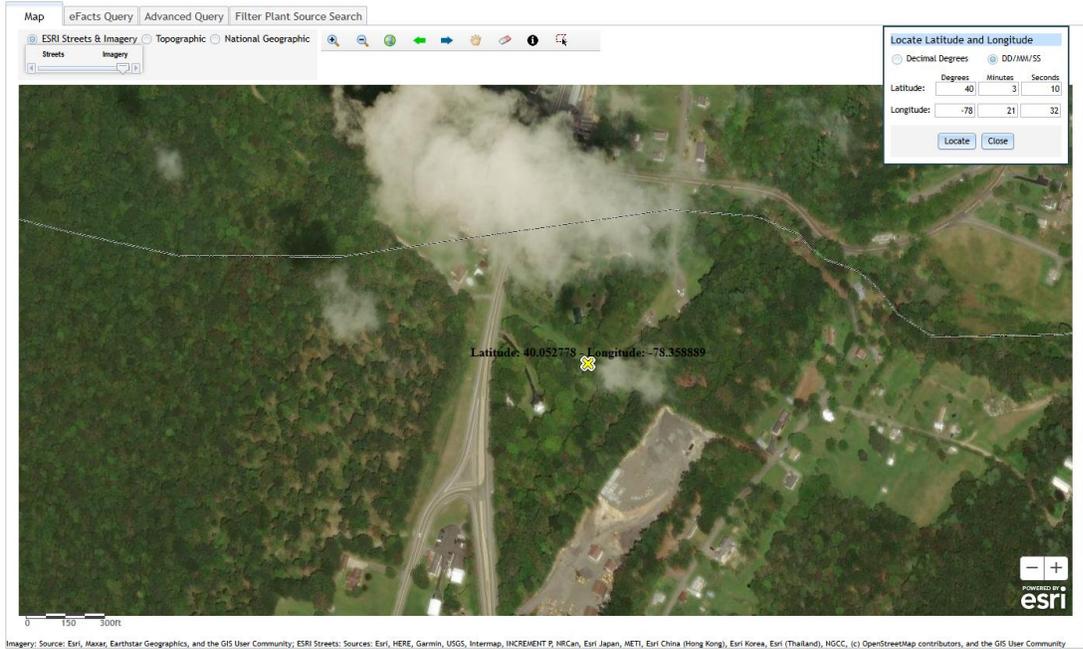


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The facility has the following outfall information for stormwater.

Lat 40 03 12, Lon -78 21 35. Stormwater runoff from facility property

2.2 Description of Wastewater Treatment Process

The subject facility is a 0.028 MGD design flow facility. The facility is being evaluated for flow, pH, TRC, TSS, aluminum, iron, manganese, nitrogen species, and phosphorus. The existing permits limits for the facility is summarized in Section 2.4.

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.028</u>
Latitude	<u>40° 3' 12.00"</u>	Longitude	<u>-78° 21' 31.00"</u>
Wastewater Description: <u>Water Treatment Effluent</u>			

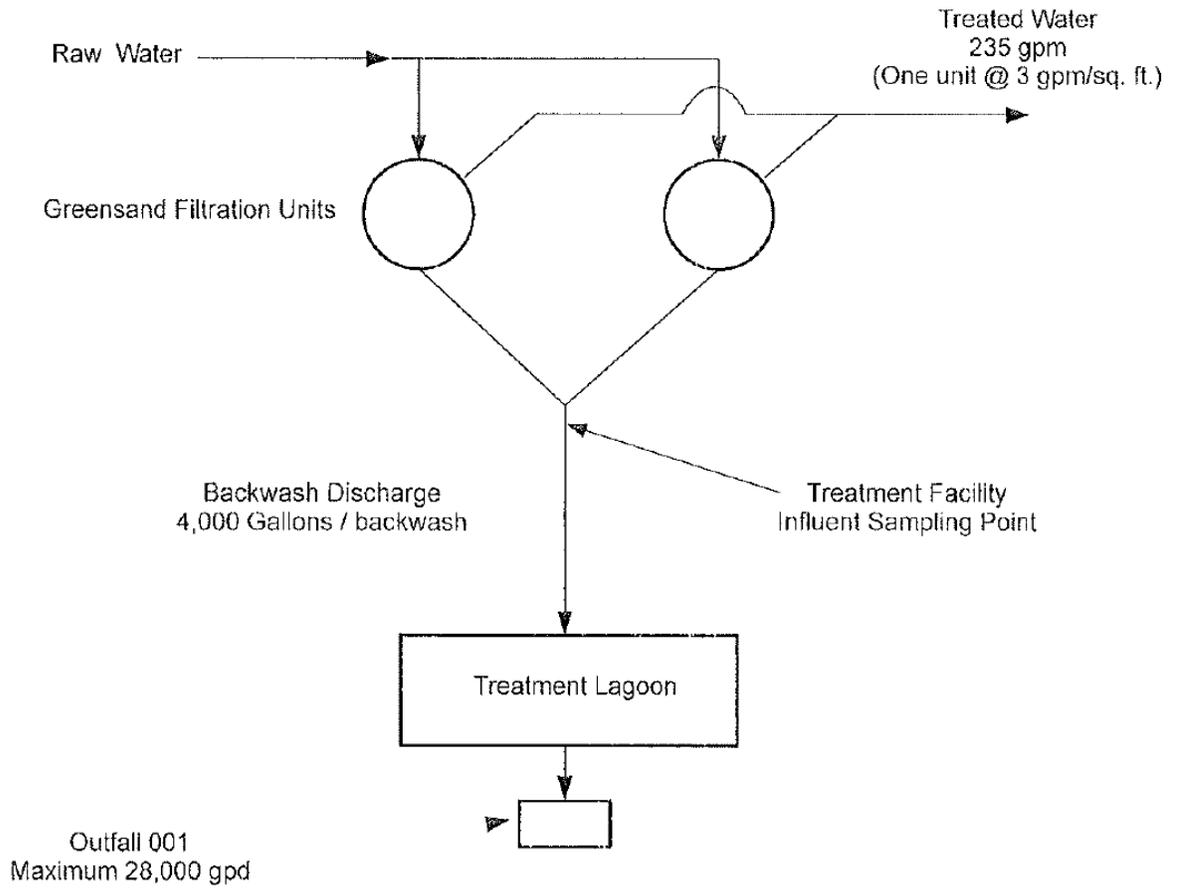
2.3.1 Operational Considerations- Chemical Additives

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 hypochlorite addition for disinfection
- Potassium permanganate for greensand regeneration

A schematic of the treatment process is depicted.



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. A. For Outfall 001, Latitude 40° 3' 12.00", Longitude 78° 21' 31.00", River Mile Index 2, Stream Code 14086

Receiving Waters: Johns Branch (WWF)

Type of Effluent: Water Treatment Effluent

1. The permittee is authorized to discharge during the period from **February 1, 2021** through **January 31, 2026**.
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	Average Weekly Report Daily Max	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report		XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.2	XXX	0.9	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30.0	60.0	75	2/month	8-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Ammonia-Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Aluminum, Total	0.35	0.69 Daily Max	XXX	1.48	2.96	3.7	2/month	8-Hr Composite
Iron, Total	Report	Report Daily Max	XXX	2.0	4.0	5	2/month	8-Hr Composite

Outfall001, 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	Average Weekly Report Daily Max	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Manganese, Total	Report	Report Daily Max	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

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

at Outfall 001

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.

02/05/2020

- Wastewater treatment unit consists of a single settling pond.
- Treatment plant usually backwashes about once every two days depending on the water source. Backwash water is sent to the settling pond and flows over weirs to a discharge pipe

03/21/2023:

- Filter backwash is treated in a single settling pond.
- The plant usually backwashes about once every two days depending on the water source.

03/13/2024:

- Filter backwash is treated in a single settling pond.
- The plant usually backwashes about once every two days depending on the water source.

03/20/2025:

- Filter backwash is treated in a single settling pond.
- The plant usually backwashes about once every two days depending on the water source.

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 0.003 MGD. The design capacity of the treatment system is 0.028 MGD.

The off-site laboratory used for the analysis of the parameters was Pace Laboratories located at 2019 9th Avenue, Altoona, PA 16602.

DMR Data for Outfall 001 (from July 1, 2024 to June 30, 2025)

Parameter	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24
Flow (MGD) Average Monthly	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002
Flow (MGD) Daily Maximum	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
pH (S.U.) Instantaneous Minimum	7.4	7.3	7.1	7.4	7.3	7.2	7.3	7.3	7.3	7.2	7.2	7.2
pH (S.U.) Instantaneous Maximum	8.0	7.9	7.9	8.1	7.6	7.9	7.8	7.9	7.9	7.6	7.7	7.9
TRC (mg/L) Average Monthly	0.03	0.14	0.03	0.05	0.14	0.13	0.17	0.17	0.08	0.08	0.05	0.06
TRC (mg/L) Instantaneous Maximum	0.03	0.14	0.03	0.05	0.14	0.13	0.17	0.17	0.08	0.08	0.05	0.06
TSS (mg/L) Average Monthly	< 3.80	< 1.60	< 1.60	< 6.20	< 1.60	< 1.60	< 1.60	< 2.00	< 1.60	< 2.00	< 1.60	< 1.60
TSS (mg/L) Daily Maximum	6.00	< 1.60	< 1.60	10.80	< 1.60	< 1.60	< 1.60	2.40	< 1.60	2.40	< 1.60	< 1.60
Nitrate-Nitrite (mg/L) Annual Average							< 1.200					
Total Nitrogen (mg/L) Annual Average							< 1.700					
Ammonia (mg/L) Annual Average							< 0.1000					
TKN (mg/L) Annual Average							< 0.5000					
Total Phosphorus (mg/L) Annual Average							< 0.0200					
Total Aluminum (lbs/day) Average Monthly	< 0.002	< 0.002	< 0.002	< 0.002	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.002
Total Aluminum (lbs/day) Daily Maximum	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
Total Aluminum (mg/L) Average Monthly	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100

**NPDES Permit Fact Sheet
Everett Borough Water System**

NPDES Permit No. PA0009423

Total Aluminum (mg/L) Daily Maximum	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Total Iron (lbs/day) Average Monthly	0.003	0.003	0.004	0.005	0.009	0.005	0.007	0.007	0.005	0.005	0.005	0.003
Total Iron (lbs/day) Daily Maximum	0.0133	0.0133	0.0180	0.0226	0.0262	0.0149	0.0182	0.0244	0.0133	0.0133	0.0133	0.0133
Total Iron (mg/L) Average Monthly	< 0.200	< 0.200	< 0.2345	< 0.2695	0.349	< 0.2115	< 0.262	< 0.2825	< 0.200	< 0.200	< 0.200	< 0.200
Total Iron (mg/L) Daily Maximum	< 0.200	< 0.200	0.269	0.339	0.393	0.223	0.272	0.365	< 0.200	< 0.200	< 0.200	< 0.200
Total Manganese (lbs/day) Average Monthly	0.00150	0.00210	0.00190	0.00170	0.00260	0.00170	0.00260	0.00250	0.00340	0.00290	0.00160	0.00090
Total Manganese (lbs/day) Daily Maximum	0.00700	0.00900	0.00800	0.00900	0.00800	0.00500	0.00700	0.00900	0.01200	0.00800	0.00500	0.00400
Total Manganese (mg/L) Average Monthly	0.091	0.128	0.112	0.100	0.103	0.067	0.104	0.099	0.135	0.115	0.063	0.054
Total Manganese (mg/L) Daily Maximum	0.111	0.133	0.124	0.140	0.120	0.070	0.104	0.136	0.178	0.119	0.082	0.062

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 February 1, 2021 to September 19, 2025, the following were observed effluent non-compliances.

Summary of Non-Compliance with NPDES Effluent Limits Beginning February 1, 2021 and Ending September 19, 2025								
NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE
11/24/2023	Violation of permit condition	Effluent	Total Suspended Solids	< 38.5	>	30.0	mg/L	Average Monthly
11/24/2023	Violation of permit condition	Effluent	Total Suspended Solids	76.0	>	60.0	mg/L	Daily Maximum

3.3.2 Non-Compliance- Enforcement Actions

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

Beginning in February 1, 2021 to September 19, 2025, 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.

No biosolids/sewage sludge was disposed in 2024.

Facility is a water treatment system. No significant biosolids/sewage sludge suspected.

3.5 Open Violations

No open violations existed as of December 2025.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Johns Branch. The sequence of receiving streams that the Johns Branch discharges into are Raystown Branch Juniata River, Juniata River, Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Saxton Municipal Water Authority (PWS ID # 4050021) located approximately 22 miles downstream of the subject facility on the Juniata 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 2024 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 2024 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life. The designated use has been classified as protected waters for warm water fishes (WWF) 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 Raystown Branch Juniata (WQN223). This WQN station is located approximately 24 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Raystown Branch Juniata River at Saxton, PA (USGS station number 1562000). This gauge station is located approximately 24 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 8.0 and the stream water temperature was estimated to be 23.3 C.

The hardness of the stream was estimated by collecting a sample upstream of the facility. The sampling result was 129 mg/l CaCO₃.

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

The low flow yield is 0.11 ft³/s/mi² and the Q710 is 0.107 ft³/s.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.028</u>
Latitude	<u>40° 3' 11.57"</u>	Longitude	<u>-78° 21' 30.44"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Water Treatment Effluent</u>			

Receiving Waters	<u>Johns Branch (WWF)</u>	Stream Code	<u>14086</u>
NHD Com ID	<u>65846221</u>	RMI	<u>2.07</u>
Drainage Area	<u>1.01</u>	Yield (cfs/mi ²)	<u>0.11</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.107</u>	Q ₇₋₁₀ Basis	<u>StreamStats</u>
Elevation (ft)	<u>1097</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>11-D</u>	Chapter 93 Class.	<u>WWF, MF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>

Assessment Status	<u>Attaining Use(s) supports aquatic life</u>		
Cause(s) of Impairment	<u>Not applicable</u>		
Source(s) of Impairment	<u>Not applicable</u>		
TMDL Status	<u>Not applicable</u>	Name	<u></u>

Background/Ambient Data		Data Source	
pH (SU)	<u>8.0</u>	WQN223: Median July to Oct	<u></u>
Temperature (°C)	<u>23.3</u>	WQN223: Median July to Oct	<u></u>
Hardness (mg/L)	<u>129</u>	NPDES application	<u></u>
Other:	<u></u>		<u></u>

Nearest Downstream Public Water Supply Intake	<u>Saxton Municipal Water Authority</u>		
PWS Waters	<u>Juniata River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u>42</u>	Distance from Outfall (mi)	<u>22</u>

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.

Permit limits for water treatment plant wastes are subject to handling and disposal of water treatment plant (WTP) using Best Practicable Control Technology (BPCT) currently available. Waste water from treatment of WTP sludges and filter backwash shall have the following permit limits.

Parameter	Monthly Average	Daily Max
	mg/l	mg/l
Suspended Solids	30	60
Iron (total)	2	4
Aluminum (total)	4	8
Manganese (total)	1	2
pH	6 - 9	-----
TRC	0.5	1

Notes:

Source: TECHNOLOGY-BASED CONTROL REQUIREMENTS FOR WATER TREATMENT PLANT WASTES

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 Chlorine (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)	(Modeling Point #2)	Units
Stream Code	14086	14086	
River Mile Index	2.07	1.02	miles
Elevation	1097	983	feet
Latitude	40.052778	40.056161	
Longitude	-78.358889	-78.342517	
Drainage Area	1.01	4.11	sq miles
Low Flow Yield	0.106	0.045	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 NH₃-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 NH₃-N in the discharge;
- (d) 24-hour average concentration for NH₃-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, bromide, chloride, sulfate, and Pollutant Group 2 parameters.

The NPDES application collected three (3) samples.

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:

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

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 ecosystem 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 C discharger. The supplement defines Sector C as a non-significant dischargers include sewage facilities (Phase 4 facilities: ≥ 0.2 MGD and < 0.4 MGD and Phase 5 facilities: > 0.002 MGD and < 0.2 MGD), small flow/single residence sewage treatment facilities (≤ 0.002 MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

For non-significant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing. In general, facilities that discharge groundwater and cooling water with no addition of chemicals containing N or P do not require monitoring

Non-significant IW facilities that propose expansion or production increases and as a result will discharge at least 75 lbs/day TN or 25 lbs/day TP (on an annual average basis), will be classified as Significant IW dischargers and receive Cap Loads in their permits based on existing performance (existing TN/TP concentrations at current average annual flow).

In general, for new non-significant IW discharges (including existing facilities discharging without a permit), DEP will issue permits containing Cap Loads of "0" and these facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

This facility is subject to Sector C monitoring requirements. Monitoring for nitrogen species and phosphorus shall be at least 1x/yr.

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.I.1 and 40 CFR 122.I.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 Everett Borough MA; PA0009423			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-4).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by Chapter 95.2(1).
TSS	DEP Guidance Document-Water Treatment Plant Wastes	Monitoring:	The monitoring frequency shall be 2x./month as an 8-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 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 DEP Guidance Document-Water Treatment Plant Wastes
TRC	WQBEL	Monitoring:	The monitoring frequency shall be on a daily basis as a grab sample (Table 6-4).
		Effluent Limit:	The average monthly limit should not exceed 0.37 mg/l and/or 1.2 mg/l as an instantaneous maximum.
		Rationale:	Chlorine in both combined (chloramine) and free form is extremely toxic to freshwater fish and other forms of aquatic life (Implementation Guidance Total Residual Chlorine 1). The TRC effluent limitations to be imposed on a discharger shall be the more stringent of either the WQBEL or TBEL requirements and shall be expressed in the NPDES permit as an average monthly and instantaneous maximum effluent concentration (Implementation Guidance Total Residual Chlorine 4). Based on the stream flow rate (lowest 7-day flow rate in 10 years) and the design flow rate of the subject facility calculated by the TRC Evaluation worksheet, the WQBEL is more stringent than the TBEL. The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by the TRC Evaluation. The current limit is more stringent than the proposed limit. Due to a recalculation of the Q710 using StreamStats and exception has been made to anti-backsliding provisions.

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 0.028 MGD.
- 3 Table 6-4 (Self Monitoring Requirements for Industrial 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

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Everett Borough MA; PA0009423

Parameter	Permit Limitation Required by ¹ :	Recommendation	
Ammonia-Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr 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 1x/yr.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr 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 1x/yr.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr 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 1x/yr.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr 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 1x/yr.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr 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 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 0.028 MGD.
- 3 Table 6-4 (Self Monitoring Requirements for Industrial 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 Toxics

Two different modeling runs were conducted with Toxics Management Spreadsheet (TMS).

Modeling Run #1 utilized monitoring data from the NPDES renewal application. The output shows numerous pollutants that were flagged for either monitoring or effluent limits.

Modeling Run #2 utilized data from re-sampling of those parameters flagged in Modeling Run #1. The output showed no reasonable potential or monitoring for any pollutants.

See the summary sheet for resampling in the attachment.

Revised laboratory reports were re-issued by the laboratory with lower detection limits for cadmium.

Revised Lab Report		
Cadmium Sample Results		
Date	Result	
	ug/l	
10/7/2025	<	0.114
10/14/2025	<	0.114
10/21/2025	<	0.114

Due to use of StreamStats for Q710 flow estimation, the effluent limits for aluminum were relaxed to TBEL limits.

Summary of Proposed NPDES Parameter Details for Toxics			
Everett Borough MA; PA0009423			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
Aluminum	DEP Guidance Document-Water Treatment Plant Wastes	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	The performance effluent limit shall not exceed 4 mg/l as a monthly average.
		Rationale:	Effluent limits are defined by DEP Guidance Document- Technology-Based Control Requirements for Water Treatment Plant Wastes- Waste Water from Treatment of WTP Sludges and Filter Backwash
Iron	DEP Guidance Document-Water Treatment Plant Wastes	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	The performance effluent limit shall not exceed 2 mg/l as a monthly average.
		Rationale:	Effluent limits are defined by DEP Guidance Document- Technology-Based Control Requirements for Water Treatment Plant Wastes- Waste Water from Treatment of WTP Sludges and Filter Backwash
Manganese	DEP Guidance Document-Water Treatment Plant Wastes	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	The performance effluent limit shall not exceed 1 mg/l as a monthly average.
		Rationale:	Effluent limits are defined by DEP Guidance Document- Technology-Based Control Requirements for Water Treatment Plant Wastes- Waste Water from Treatment of WTP Sludges and Filter Backwash
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 0.028 MGD.			
3 Table 6-4 (Self Monitoring Requirements for Industrial 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

Consistent with DEP Central Office directive, monitoring for PFOS parameters will not be required. The facility is a drinking water facility. The Safe Drinking Water Program will address PFOS.

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.

- **Due to estimation of Q710 from StreamStats, TRC and Total aluminum effluent limits have been relaxed**

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° 3' 12.00", Longitude 78° 21' 31.00", River Mile Index 2.07, Stream Code 14086

Receiving Waters: Johns Branch (WWF)

Type of Effluent: Water Treatment 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
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.3	XXX	1.2	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30.0	60.0	75	2/month	8-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Ammonia-Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Aluminum, Total	Report	Report Daily Max	XXX	4.0	8.0	10	2/month	8-Hr Composite

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	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Iron, Total	Report	Report Daily Max	XXX	2.0	4.0	5	2/month	8-Hr Composite
Manganese, Total	Report	Report Daily Max	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

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

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Chlorine Minimization
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems

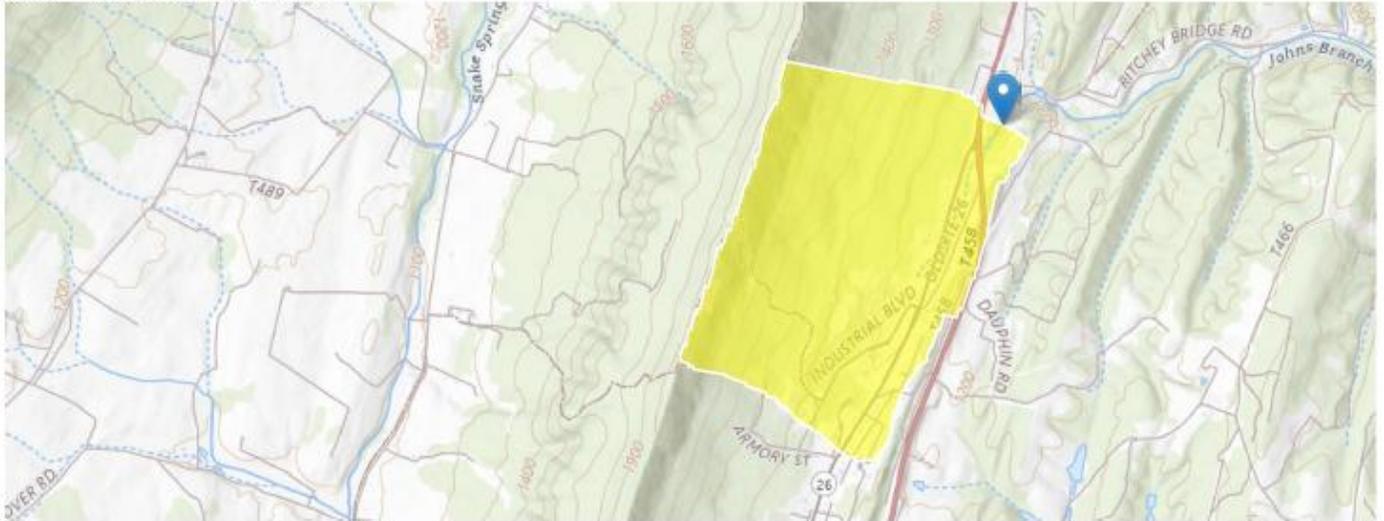
Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: [redacted]
<input type="checkbox"/>	Other: [redacted]

Attachment A

Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
 Workspace ID: PA20250919163649726000
 Clicked Point (Latitude, Longitude): 40.05272, -78.35889
 Time: 2025-09-19 12:37:14 -0400



Everett Borough Area MA PA0009423 Modeling Point #1 September 2025

[Collapse All](#)

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	21.32	percent
DRNAREA	Area that drains to a point on a stream	1.01	square miles
PRECIP	Mean Annual Precipitation	37	inches
ROCKDEP	Depth to rock	4.8	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	0.63	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
CARBON	Percent Carbonate	21.32	percent	0	99
DRNAREA	Drainage Area	1.01	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	37	inches	35	50.4
ROCKDEP	Depth to Rock	4.8	feet	3.32	5.65
STRDEN	Stream Density	0.63	miles per square mile	0.51	3.1

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	0.213	ft ³ /s
30 Day 2 Year Low Flow	0.271	ft ³ /s
7 Day 10 Year Low Flow	0.107	ft ³ /s
30 Day 10 Year Low Flow	0.137	ft ³ /s
90 Day 10 Year Low Flow	0.216	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: 4.29.3

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
 Workspace ID: PA20250919164032766000
 Clicked Point (Latitude, Longitude): 40.05612, -78.34228
 Time: 2025-09-19 12:40:57 -0400



Everett Borough Area MA PA0009423 Modeling Point #2 September 2025

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	11.71	percent
DRNAREA	Area that drains to a point on a stream	4.11	square miles
PRECIP	Mean Annual Precipitation	37	inches
ROCKDEP	Depth to rock	4.8	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.57	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
CARBON	Percent Carbonate	11.71	percent	0	99
DRNAREA	Drainage Area	4.11	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	37	inches	35	50.4
ROCKDEP	Depth to Rock	4.8	feet	3.32	5.65
STRDEN	Stream Density	1.57	miles per square mile	0.51	3.1

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	0.385	ft ³ /s
30 Day 2 Year Low Flow	0.514	ft ³ /s
7 Day 10 Year Low Flow	0.187	ft ³ /s
30 Day 10 Year Low Flow	0.247	ft ³ /s
90 Day 10 Year Low Flow	0.391	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: 4.29.3

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Attachment B

Modeling Input Values

Toxics Management Spreadsheet Output Values



Run #1

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions Discharge Stream

Facility: Everett Borough Water System NPDES Permit No.: PA0009423 Outfall No.: 001
 Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Water Treatment Plant filter backwash

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
0.028	75	7.55						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank		
			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	160								
	Chloride (PWS)	mg/L	16.2								
	Bromide	mg/L	< 0.011								
	Sulfate (PWS)	mg/L	18.3								
	Fluoride (PWS)	mg/L	0.4								
Group 2	Total Aluminum	µg/L	< 30.5								
	Total Antimony	µg/L	< 5.4								
	Total Arsenic	µg/L	< 3.94								
	Total Barium	µg/L	7.41								
	Total Beryllium	µg/L	< 0.4								
	Total Boron	µg/L	< 23.8								
	Total Cadmium	µg/L	< 1.6								
	Total Chromium (III)	µg/L	< 1.99								
	Hexavalent Chromium	µg/L	< 1								
	Total Cobalt	µg/L	< 7.1								
	Total Copper	µg/L	< 9.8								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	6								
	Dissolved Iron	µg/L	< 185								
	Total Iron	µg/L	209								
	Total Lead	µg/L	< 4.2								
	Total Manganese	µg/L	166								
	Total Mercury	µg/L	< 0.0932								
	Total Nickel	µg/L	< 5.6								
	Total Phenols (Phenolics) (PWS)	µg/L	< 5								
Total Selenium	µg/L	< 5.55									
Total Silver	µg/L	< 2.9									
Total Thallium	µg/L	< 4.9									
Total Zinc	µg/L	< 10.1									
Total Molybdenum	µg/L	< 6.73									
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	<									



Stream / Surface Water Information

Everett Borough Water System, NPDES Permit No. PA0009423, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: **Johns Branch**

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	014086	2.07	1097	1.01			Yes
End of Reach 1	014086	1.02	983	4.11			Yes

Q₇₋₁₀

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	2.07	0.11										129	8		
End of Reach 1	1.02	0.045										129	8		

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	2.07														
End of Reach 1	1.02														



Model Results

Everett Borough Water System, NPDES Permit No. PA0009423, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	2,674	
Total Antimony	0	0		0	1,100	1,100	3,921	
Total Arsenic	0	0		0	340	340	1,212	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	74,862	
Total Boron	0	0		0	8,100	8,100	28,875	
Total Cadmium	0	0		0	2,284	2,43	8.68	Chem Translator of 0.939 applied
Total Chromium (III)	0	0		0	633.634	2,005	7,148	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	58.1	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	339	
Total Copper	0	0		0	15.186	15.8	56.4	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	74.358	96.3	343	Chem Translator of 0.772 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	5.87	Chem Translator of 0.85 applied
Total Nickel	0	0		0	522.552	524	1,867	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.021	4.73	16.9	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	232	
Total Zinc	0	0		0	130.796	134	477	Chem Translator of 0.978 applied

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	784	
Total Arsenic	0	0		0	150	150	535	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	14,616	
Total Boron	0	0		0	1,600	1,600	5,704	
Total Cadmium	0	0		0	0.269	0.3	1.06	Chem Translator of 0.904 applied
Total Chromium (III)	0	0		0	82.423	95.8	342	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	37.1	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	67.7	
Total Copper	0	0		0	10.006	10.4	37.2	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	5,347	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.898	3.75	13.4	Chem Translator of 0.772 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	3.23	Chem Translator of 0.85 applied
Total Nickel	0	0		0	58.039	58.2	208	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4,600	4,99	17.8	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	46.3	
Total Zinc	0	0		0	131.866	134	477	Chem Translator of 0.986 applied

THH CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	20.0	
Total Arsenic	0	0		0	10	10.0	35.6	
Total Barium	0	0		0	2,400	2,400	8,556	
Total Boron	0	0		0	3,100	3,100	11,051	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	1,069	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	

Total Manganese	0	0	0	1,000	1,000	3,565	
Total Mercury	0	0	0	0.050	0.05	0.18	
Total Nickel	0	0	0	610	610	2,175	
Total Phenols (Phenolics) (PWS)	0	0	0	5	5.0	N/A	
Total Selenium	0	0	0	N/A	N/A	N/A	
Total Silver	0	0	0	N/A	N/A	N/A	
Total Thallium	0	0	0	0.24	0.24	0.86	
Total Zinc	0	0	0	N/A	N/A	N/A	

CRL CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	0	N/A	N/A	N/A	
Chloride (PWS)	0	0	0	0	N/A	N/A	N/A	
Sulfate (PWS)	0	0	0	0	N/A	N/A	N/A	
Fluoride (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Aluminum	0	0	0	0	N/A	N/A	N/A	
Total Antimony	0	0	0	0	N/A	N/A	N/A	
Total Arsenic	0	0	0	0	N/A	N/A	N/A	
Total Barium	0	0	0	0	N/A	N/A	N/A	
Total Boron	0	0	0	0	N/A	N/A	N/A	
Total Cadmium	0	0	0	0	N/A	N/A	N/A	
Total Chromium (III)	0	0	0	0	N/A	N/A	N/A	
Hexavalent Chromium	0	0	0	0	N/A	N/A	N/A	
Total Cobalt	0	0	0	0	N/A	N/A	N/A	
Total Copper	0	0	0	0	N/A	N/A	N/A	
Dissolved Iron	0	0	0	0	N/A	N/A	N/A	
Total Iron	0	0	0	0	N/A	N/A	N/A	
Total Lead	0	0	0	0	N/A	N/A	N/A	
Total Manganese	0	0	0	0	N/A	N/A	N/A	
Total Mercury	0	0	0	0	N/A	N/A	N/A	
Total Nickel	0	0	0	0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Selenium	0	0	0	0	N/A	N/A	N/A	
Total Silver	0	0	0	0	N/A	N/A	N/A	
Total Thallium	0	0	0	0	N/A	N/A	N/A	
Total Zinc	0	0	0	0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Antimony	Report	Report	Report	Report	Report	µg/L	20.0	THH	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	Report	Report	Report	Report	Report	µg/L	35.6	THH	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	0.0002	0.0004	1.06	1.66	2.66	µg/L	1.06	CFC	Discharge Conc ≥ 50% WQBEL (RP)

Total Cobalt	Report	Report	Report	Report	Report	µg/L	67.7	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	36.1	AFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	1,069	THH	Discharge Conc > 10% WQBEL (no RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	13.4	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	17.8	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Silver	Report	Report	Report	Report	Report	µg/L	10.8	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Thallium	0.0002	0.0003	0.86	1.33	2.14	µg/L	0.86	THH	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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,714	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	8,556	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	5,704	µg/L	Discharge Conc < TQL
Total Chromium (III)	342	µg/L	Discharge Conc < TQL
Hexavalent Chromium	37.1	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Total Iron	5,347	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	3,565	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.18	µg/L	Discharge Conc < TQL
Total Nickel	208	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Zinc	306	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS



RUN #2

Discharge Information

Instructions Discharge Stream

Facility: Everett Borough Water System NPDES Permit No.: PA0009423 Outfall No.: 001
 Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Water Treatment Plant filter backwash

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
0.028	75	7.55						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	160								
	Chloride (PWS)	mg/L	16.2								
	Bromide	mg/L	< 0.011								
	Sulfate (PWS)	mg/L	18.3								
	Fluoride (PWS)	mg/L	0.4								
Group 2	Total Aluminum	µg/L	< 30.5								
	Total Antimony	µg/L	< 0.5								
	Total Arsenic	µg/L	< 2.5								
	Total Barium	µg/L	7.41								
	Total Beryllium	µg/L	< 0.4								
	Total Boron	µg/L	< 23.8								
	Total Cadmium	µg/L	< 0.114								
	Total Chromium (III)	µg/L	< 1.99								
	Hexavalent Chromium	µg/L	< 1								
	Total Cobalt	µg/L	< 0.4								
	Total Copper	µg/L	1.95								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	6								
	Dissolved Iron	µg/L	73.9								
	Total Iron	µg/L	209								
	Total Lead	µg/L	0.345								
	Total Manganese	µg/L	166								
	Total Mercury	µg/L	< 0.0932								
	Total Nickel	µg/L	< 5.6								
	Total Phenols (Phenolics) (PWS)	µg/L	< 5								
Total Selenium	µg/L	< 2.5									
Total Silver	µg/L	< 0.5									
Total Thallium	µg/L	< 0.1									
Total Zinc	µg/L	< 10.1									
Total Molybdenum	µg/L	< 6.73									
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	<									



Stream / Surface Water Information

Everett Borough Water System, NPDES Permit No. PA0009423, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: Johns Branch 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	014086	2.07	1097	1.01			Yes
End of Reach 1	014086	1.02	983	4.11			Yes

Q₇₋₁₀

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	2.07	0.11										129	8		
End of Reach 1	1.02	0.045										129	8		

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	2.07														
End of Reach 1	1.02														



Model Results

Everett Borough Water System, NPDES Permit No. PA0009423, Outfall 001

All
 Inputs
 Results
 Limits

Hydrodynamics

Wasteload Allocations

AFC
 CCT (min):
 PMF:
 Analysis Hardness (mg/l):
 Analysis pH:

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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	2,674	
Total Antimony	0	0		0	1,100	1,100	3,921	
Total Arsenic	0	0		0	340	340	1,212	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	74,862	
Total Boron	0	0		0	8,100	8,100	28,875	
Total Cadmium	0	0		0	2.284	2.43	8.68	Chem Translator of 0.939 applied
Total Chromium (III)	0	0		0	633.634	2,005	7,148	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	58.1	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	339	
Total Copper	0	0		0	15.186	15.8	56.4	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	74.358	96.3	343	Chem Translator of 0.772 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	5.87	Chem Translator of 0.85 applied
Total Nickel	0	0		0	522.552	524	1,867	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.021	4.73	16.9	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	232	
Total Zinc	0	0		0	130.796	134	477	Chem Translator of 0.978 applied

CFC
 CCT (min):
 PMF:
 Analysis Hardness (mg/l):
 Analysis pH:

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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	784	
Total Arsenic	0	0		0	150	150	535	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	14,616	
Total Boron	0	0		0	1,600	1,600	5,704	
Total Cadmium	0	0		0	0.269	0.3	1.06	Chem Translator of 0.904 applied
Total Chromium (III)	0	0		0	82.423	95.8	342	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	37.1	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	67.7	
Total Copper	0	0		0	10.006	10.4	37.2	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	5,347	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2,898	3.75	13.4	Chem Translator of 0.772 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	3.23	Chem Translator of 0.85 applied
Total Nickel	0	0		0	58.039	58.2	208	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4,600	4.99	17.8	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	46.3	
Total Zinc	0	0		0	131.866	134	477	Chem Translator of 0.986 applied

THH CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	20.0	
Total Arsenic	0	0		0	10	10.0	35.6	
Total Barium	0	0		0	2,400	2,400	8,556	
Total Boron	0	0		0	3,100	3,100	11,051	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	1,069	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	

Total Manganese	0	0	0	1,000	1,000	3,565	
Total Mercury	0	0	0	0.050	0.05	0.18	
Total Nickel	0	0	0	610	610	2,175	
Total Phenols (Phenolics) (PWS)	0	0	0	5	5.0	N/A	
Total Selenium	0	0	0	N/A	N/A	N/A	
Total Silver	0	0	0	N/A	N/A	N/A	
Total Thallium	0	0	0	0.24	0.24	0.86	
Total Zinc	0	0	0	N/A	N/A	N/A	

CRL CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	0	N/A	N/A	N/A	
Chloride (PWS)	0	0	0	0	N/A	N/A	N/A	
Sulfate (PWS)	0	0	0	0	N/A	N/A	N/A	
Fluoride (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Aluminum	0	0	0	0	N/A	N/A	N/A	
Total Antimony	0	0	0	0	N/A	N/A	N/A	
Total Arsenic	0	0	0	0	N/A	N/A	N/A	
Total Barium	0	0	0	0	N/A	N/A	N/A	
Total Boron	0	0	0	0	N/A	N/A	N/A	
Total Cadmium	0	0	0	0	N/A	N/A	N/A	
Total Chromium (III)	0	0	0	0	N/A	N/A	N/A	
Hexavalent Chromium	0	0	0	0	N/A	N/A	N/A	
Total Cobalt	0	0	0	0	N/A	N/A	N/A	
Total Copper	0	0	0	0	N/A	N/A	N/A	
Dissolved Iron	0	0	0	0	N/A	N/A	N/A	
Total Iron	0	0	0	0	N/A	N/A	N/A	
Total Lead	0	0	0	0	N/A	N/A	N/A	
Total Manganese	0	0	0	0	N/A	N/A	N/A	
Total Mercury	0	0	0	0	N/A	N/A	N/A	
Total Nickel	0	0	0	0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Selenium	0	0	0	0	N/A	N/A	N/A	
Total Silver	0	0	0	0	N/A	N/A	N/A	
Total Thallium	0	0	0	0	N/A	N/A	N/A	
Total Zinc	0	0	0	0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,714	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	8,556	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	5,704	µg/L	Discharge Conc < TQL
Total Cadmium	1.06	µg/L	Discharge Conc < TQL
Total Chromium (III)	342	µg/L	Discharge Conc < TQL
Hexavalent Chromium	37.1	µg/L	Discharge Conc < TQL
Total Cobalt	67.7	µg/L	Discharge Conc < TQL
Total Copper	36.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,069	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	5,347	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	13.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	3,565	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.18	µg/L	Discharge Conc < TQL
Total Nickel	208	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	17.8	µg/L	Discharge Conc < TQL
Total Silver	10.8	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.86	µg/L	Discharge Conc < TQL
Total Zinc	306	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment C

TRC Evaluation

Everett MA
 PA0009423

September 2025

1A	B	C	D	E	F	G
2	TRC EVALUATION					
3	Input appropriate values in B4:B8 and E4:E7					
4	0.107	= Q stream (cfs)		0.5	= CV Daily	
5	0.028	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	= Decay Coefficient (K)	
10	Source	Reference	AFC Calculations	Reference	CFC Calculations	
11	TRC	1.3.2.ii	WLA_afc = 0.807	1.3.2.iii	WLA_cfc = 0.779	
12	PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c	LTAMULT_cfc = 0.581	
13	PENTOXSD TRG	5.1b	LTA_afc = 0.301	5.1d	LTA_cfc = 0.453	
14						
15	Source	Effluent Limit Calculations				
16	PENTOXSD TRG	5.1f	AML_MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG_MON_LIMIT (mg/l) = 0.370	AFC		
18			INST_MAX_LIMIT (mg/l) = 1.210			
	WLA_afc	$(.019k(-k^2AFC_{tc})) + [(AFC_{Yc}Qs^*.019/Qd^*e(-k^2AFC_{tc}))... + Xd + (AFC_{Yc}Qs^*Xs/Qd)]^*(1-FOS/100)$				
	LTAMULT_afc	$EXP((0.5^*LN(cvh^2+1))-2.326^*LN(cvh^2+1)^0.5)$				
	LTA_afc	wla_afc*LTAMULT_afc				
	WLA_cfc	$(.011k(-k^2CFC_{tc})) + [(CFC_{Yc}Qs^*.011/Qd^*e(-k^2CFC_{tc}))... + Xd + (CFC_{Yc}Qs^*Xs/Qd)]^*(1-FOS/100)$				
	LTAMULT_cfc	$EXP((0.5^*LN(cvd^2/no_samples+1))-2.326^*LN(cvd^2/no_samples+1)^0.5)$				
	LTA_cfc	wla_cfc*LTAMULT_cfc				
	AML_MULT	$EXP(2.326^*LN((cvd^2/no_samples+1)^0.5)-0.5^*LN(cvd^2/no_samples+1))$				
	AVG_MON_LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)^AML_MULT)				
	INST_MAX_LIMIT	$1.5^*((av_mon_limit/AML_MULT)^LTAMULT_afc)$				

Attachment D

Re-sampling results

Summary of Re-Sampling Results								
Pollutant	10/7/2025		10/14/2025		10/27/2025		Max Concen	
	<	ug/l	<	ug/l	<	ug/l	<	ug/l
Total Antimony	<	0.5	<	0.5	<	0.5	<	0.5
Total Arsenic	<	2.5	<	2.5	<	2.5	<	2.5
Total Cadmium	<	0.5	<	0.5	<	0.5	<	0.5
Total Cobalt	<	0.4	<	0.4	<	0.4	<	0.4
Total Copper		1.95	<	1.85	<	1.85		1.95
Dissolved Iron		73.9		57.3	<	20		73.9
Total Lead		0.345	<	0.097	<	0.097		0.345
Total Selenium	<	2.5	<	2.5	<	2.5	<	2.5
Total Silver	<	0.5	<	0.5	<	0.5	<	0.5
Total Thallium	<	0.1	<	0.1	<	0.1	<	0.1