Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0101621**
Facility Type	**Industrial**	APS ID	**1095002**
Major / Minor	**Minor**	Authorization ID	**1451132**

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

Applicant and Facility Information

Applicant Name	**Bradford City Water Authority**	Facility Name	**Bradford City WTP**
Applicant Address	28 Kennedy Street	Facility Address	West Corydon Street Ext
	Bradford, PA 16701-2006		Bradford, PA 16701
Applicant Contact	Stephen Disney	Facility Contact	
Applicant Phone	(814) 362-3001	Facility Phone	(814) 362-3004
Client ID	69782	Site ID	451017
Ch 94 Load Status		Municipality	Bradford Township
Connection Status		County	McKean
Date Application Received	July 27, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Renewal of a NPDES Permit for an existing discharge of filter backwash wastewater and sewage.

Summary of Review

1.0 General Discussion

This factsheet supports the renewal of an existing NPDES permit for a discharge of treated industrial wastewater from Bradford City Water Authority (Authority) Water Treatment Plant. The Authority owns and operates the water treatment plant that treats raw water withdrawn from three reservoirs to supply potable water. The water treatment system consists of two clarifiers with tube settlers, mixed media gravity filters, sludge holding tanks, and a dewatering centrifuge permitted under public water supply Permit No. 4208501. The treatment process include coagulation, flocculation, sedimentation and filtration. Clarifier residual waste and filter backwash are processed via storage tanks and a centrifuge. Centrate and decanted water from the sludge storage tanks are discharged to two sludge lagoons. Effluent from the sludge lagoons flow to a recycle basin and discharged to outfall 001 on the West Branch of Tunungwant Creek. The existing discharge for outfall 001 was based on a wastewater flow of 0.1mgd and will continue for the current permit renewal. The facility also has a small treatment facility onsite to treat sewage and discharge to Kissem Run via outfall 002. The West Branch Tunungwant Creek (001) and Kissem Run (Tributary to West Branch Tunungwant Creek) (002) are in State Water Plan 16-C and are classified for High Quality - Cold water fishes, aquatic life, water supply and recreation. The facility is not covered by ELG, but technology-based treatment limits developed by the Department are applicable. See details at technology limits section of the report. The existing permit was issued on January 11, 2019, with effective date of February 1, 2019, and expiration date of January 31, 2024. The permittee submitted a timely renewal application to the Department and has been operating under the terms and conditions in the existing permit pending permit renewal. Topographical map showing discharge location is attached as attachment A and process flow diagram is presented in attachment B.

1.1 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*,

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	May 13, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	May 19, 2025

Summary of Review
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.

1.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.1
Latitude	41º 53' 54 "	Longitude	78º 42' 58"
Quad Name	Bradford	Quad Code	0316
Wastewater Description:	Treated water treatment plant filter backwash.		
Receiving Waters	West Branch Tunungwant Creek (HQ-CWF)	Stream Code	56990
NHD Com ID	112369171	RMI	6.7
Drainage Area	6.94	Yield (cfs/mi^2)	0.0706 (accrued flow)
Q_{7-10} Flow (cfs)	1.06	Q_{7-10} Basis	See comment below
Elevation (ft)	1635	Slope (ft/ft)	
Watershed No.	16-C	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Nutrients		
Source(s) of Impairment	Other, Upstream Impoundment		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)		
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake	PA/NY state line		
PWS Waters	Tunungwant Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	10.5

Changes Since Last Permit Issuance: None

1.3.1 Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.00062
Latitude	41º 53' 58"	Longitude	78º 42' 46"
Quad Name	Bradford	Quad Code	0316
Wastewater Description:	Sewage Effluent		
Receiving Waters	Kissem Run (HQ-CWF)	Stream Code	57019
NHD Com ID	112369199	RMI	0.2
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	16-C	Chapter 93 Class.	HQ-CWF
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	

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	PA/NY state line		
PWS Waters	Tunungwant Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	10.4

Changes Since Last Permit Issuance: None

1.3.2 Potable Water Supply

The nearest downstream potable water supply is the PA/NY state line located on Tunungwant Creek and is approximately 10.5 miles below the point of discharge.

2.0 Treatment Facility Summary				
Treatment Facility Name: Bradford City WTP				
WQM Permit No.	**Issuance Date**			
4283201 (IW)				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Settling	3-cell lagoon		0.1
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.1				Land Application

Changes Since Last Permit Issuance: None

2.1 Industrial Wastewater Treatment System

The treatment system for the industrial wastewater consists of 3-cell lagoon treatment system.

2.2 Treatment Facility Summary				
Treatment Facility Name: Bradford City Water Authority				
WQM Permit No.	**Issuance Date**			
4283402 A-1	9/22/2020			
4283402	7/28/1983			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Ecoflo biofilter system	Hypochlorite	0.00062
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.00062				Landfill

Changes Since Last Permit Issuance: Permit was amended on 9/22/2020 to install Premier Tech EcoFlo Package System Model Number EC7-1350-P-G/P

2.3 Sewage Treatment System

Sewage treatment plant consists of the existing 900-gallon septic tank followed by a Premier Tech EcoFlo Package System Model Number EC7-1350-P-G/P with an inlet filter, a Norweco LF 4600 tablet chlorinator, and a 500-gallon chlorine contact tank discharging through a 6-inch diameter discharge pipe.

3.0 Existing Effluent Limitations and Monitoring Requirements

3.1 Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.25	1/day	Grab
TSS	Report	Report	XXX	30	60	75	1/week	8-Hr Composite
Total Aluminum	1.9	3.7	XXX	1.5	3.0	3.8	1/week	8-Hr Composite
Total Iron	Report	Report	XXX	2.0	4.0	5	1/week	8-Hr Composite
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	1/week	8-Hr Composite

3.2 Outfall 002

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	Annual Average	Maximum	Instant. Maximum		
Flow (MGD)	Report Annl Avg	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/month	Grab
TRC	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.2	1/month	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	1/year	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200	XXX	1000	1/year	Grab

3.3 Compliance History

3.3.1 DMR Data for Outfall 001 (from March 1, 2024 to February 28, 2025)

Parameter	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24
Flow (MGD) Average Monthly	0.28	0.27	0.29	0.30	0.31	0.31	0.31	0.29	0.29	0.25	0.27	0.28
Flow (MGD) Daily Maximum	0.44	0.39	0.46	0.39	0.43	0.41	0.4	0.4	0.39	0.38	0.4	0.39
pH (S.U.) Daily Minimum	6.3	6.4	6.4	6.4	6.4	6.3	6.1	6.0	6.1	6.1	6.5	6.5
pH (S.U.) Daily Maximum	6.9	7.0	7.1	7.2	7.4	6.8	6.6	6.6	6.7	6.7	6.9	7.0
TRC (mg/L) Average Monthly	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
TRC (mg/L) Instantaneous Maximum	0.04	0.06	0.07	0.03	0.06	0.05	0.05	0.07	0.04	0.04	0.04	0.11
TSS (lbs/day) Average Monthly	< 13	< 7.0	< 10	< 8	< 18	< 8	< 9	< 9.0	< 8	< 6	< 11	< 11
TSS (lbs/day) Daily Maximum	31	< 8.0	15	< 10	57	13	< 9	17	< 10	< 9	21	20
TSS (mg/L) Average Monthly	< 7.0	< 3.0	< 4	< 3.0	< 7	< 4.0	< 3	< 3.0	< 3	< 3	< 5.0	< 5
TSS (mg/L) Daily Maximum	17	3.0	4	< 3.0	22	5	4	5.0	< 3	< 3	9.0	9.0
Total Aluminum (lbs/day) Average Monthly	< 1.5	< 0.6	< 0.7	0.9	< 1.3	< 0.7	< 0.5	1.0	< 0.8	< 0.4	1.5	< 1.3
Total Aluminum (lbs/day) Daily Maximum	5.0	1.2	1.5	1.4	3.2	1.8	0.9	2.2	1.8	0.9	3.6	4.2
Total Aluminum (mg/L) Average Monthly	< 0.8	< 0.2	< 0.2	0.3	< 0.5	< 0.3	< 0.2	0.4	< 0.3	< 0.2	0.6	< 0.6
Total Aluminum (mg/L) Daily Maximum	2.7	0.52	0.46	0.44	1.25	0.68	0.31	0.65	0.54	0.31	1.56	1.88
Total Iron (lbs/day) Average Monthly	0.3	0.2	0.2	0.3	1	2	0.9	0.4	0.3	0.2	0.3	< 0.2
Total Iron (lbs/day) Daily Maximum	0.5	0.4	0.4	0.5	2	4	3	1.0	0.6	0.4	0.5	0.3

Total Iron (mg/L) Average Monthly	0.1	0.1	0.1	0.1	0.4	0.6	0.3	0.1	0.1	0.1	0.1	< 0.1
Total Iron (mg/L) Daily Maximum	0.26	0.15	0.14	0.15	0.95	1.57	0.88	0.35	0.17	0.17	0.19	0.14
Total Manganese (lbs/day) Average Monthly	0.5	0.3	0.7	0.6	1	2	2	2.0	0.5	0.2	0.5	0.5
Total Manganese (lbs/day) Daily Maximum	0.8	0.5	3	0.8	3	3	4	3.0	1	0.5	0.8	0.9
Total Manganese (mg/L) Average Monthly	0.2	0.1	0.2	0.2	0.4	0.6	0.8	0.6	0.2	0.1	0.2	0.2
Total Manganese (mg/L) Daily Maximum	0.43	0.17	0.8	0.28	1.25	1.1	1.35	0.9	0.31	0.16	0.34	0.4

3.3.2 DMR Data for Outfall 002 (from March 1, 2024 to February 28, 2025)

Parameter	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24
Flow (MGD) Annual Average			13884									
pH (S.U.) Daily Minimum	6.89	6.31	6.69	6.56	7.04	6.52	6.20	6.00	6.48	6.4	6.98	6.91
pH (S.U.) Daily Maximum	6.89	6.31	6.69	6.56	7.04	6.52	6.20	6.00	6.48	6.4	6.98	6.91
TRC (mg/L) Average Monthly	0.04	0.08	0.09	0.03	0.07	0.04	0.03	0.05	0.06	0.04	0.07	0.6
TRC (mg/L) Instantaneous Maximum	0.04	0.08	0.09	0.03	0.07	0.04	0.03	0.05	0.06	0.04	0.07	0.6
CBOD5 (mg/L) Annual Average			< 3.0									
TSS (mg/L) Annual Average			< 3.0									
Fecal Coliform (No./100 ml) Annual Average			> 2420									
Fecal Coliform (No./100 ml) Instantaneous Maximum			> 2420									

3.3.3 Effluent Violations for Outfall 001, from: April 1, 2024 To: February 28, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Aluminum	02/28/25	Daily Max	5.0	lbs/day	3.7	lbs/day

3.3.4 Effluent Violations for Outfall 002, from: April 1, 2024 To: February 28, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	12/31/24	Annl Avg	> 2420	No./100 ml	200	No./100 ml
Fecal Coliform	12/31/24	IMAX	> 2420	No./100 ml	1000	No./100 ml

3.3.5 Summary of DMRs:

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on the table above indicate permit limits have been met most of the time. One Total Aluminum violation was noted on DMR for outfall 001 and two Fecal Coliform violation occurred at outfall 002 for the period reviewed and presented in section 3.3.3 and 3.3.4. The permittee reported higher flows on DMR for the period reviewed. The explanation for the higher flows and the current 12-month revised flows are presented in attachment D.

3.3.6 Summary of Inspections:

The industrial portion of the facility was last inspected on 03/14/2023 and the sewage portion was inspected on 05/04/2023. No permit limit violations found during these inspections. Noncompliance with composite samples collection was observed during inspection on 3/14/2023. It was recommended equipment/operational modifications be utilized to allow compliant with collection of composite samples. A violation was noted for non-compliance with annual monitoring reports (AMRs) submission during inspection on 5/08/2023. No AMRs have been submitted or permit required sampling has been conducted on the SFTF's Outfall 002 since the permit's effective date of February 1, 2019. The permittee stated all permit required monitoring will be conducted and reported properly in the future. The inspection report indicated the SFTF appeared as described in WQ Permit #4283402 and all units appeared to be functioning properly and well maintained.

4.0 Development of Effluent Limitations for Industrial Waste Discharge

Outfall No. 001 **Design Flow (MGD)** .1
Latitude 41º 53' 54.00" **Longitude** -78º 42' 58.00"
Wastewater Description: IW Process Effluent without ELG

4.1 Technology-Based Limitations

Technology based (BPT) effluent limits for water treatment plant wastewater discharges are presented in the Department's October 1997 guidance document entitled "Technology-based control requirements for water treatment plant wastes DEP Document number 362-2183-003, 10-01-1997 as follows:

Parameter	Monthly Average (mg/l)	Daily Max (mg/l)
Suspended Solids	30	60
Iron (total)	2	4
Aluminum (total)	4	8
Manganese (total)	1	2
Flow	Monitor	
pH	6-9 at all time	
Total Residual Chlorine*	0.5	1.0

*See TRC section of the report for details

4.2 Water Quality-Based Limitations

4.2.1 Stream flows

Q_{7-10} of 1.06 cfs is taken from the previous factsheet was based on minimum release rate for the Bradford City Dam #5 (PA No. D42-031) under Permit No. 41-57-56-78-38-5. The drainage area taken from the previous factsheet is 6.94sqmi. The previous factsheet indicated that the accrued flow below the discharge was found by calculating a yield from the USGS StreamStats and multiplying that yield by the accrued drainage area.

4.2.2 The following input data were used for TMS model:

- Discharge pH = 6.6 (DMR median July – Sept.)
- Stream pH = 7.0 (Default)
- Discharge Hardness = 12.8 mg/l
- Stream Hardness = 100 mg/l (Default)

4.2.3 Toxics

A reasonable potential (RP) analysis was done for pollutant Groups 1 and 2 submitted with the application. DEP Toxics Management Spreadsheet (TMS) was used to calculate WQBELs. WQBELs recommended by the TMS are presented in attachment C. The results of the TMS indicate discharge levels for all pollutants except Total Aluminum and Total Manganese were well below DEP's target quantitation limits and the calculated WQBELs, therefore, no monitoring or limitation was recommended. Monitoring was recommended for Total Aluminum and Total Manganese, but the existing TBELs for Total Manganese and Total Aluminum are more stringent and will remain in the permit in addition to the existing Aluminum mass load and the existing Total Iron limitation. The facility is complying with the limits in the permit.

4.2.4 Total Residual Chlorine (TRC) Limitation

The existing TRC limit of 0.1mg/L AML and 0.25mg/L IMAX based on non-degrading and detection capabilities of lab testing equipment will be carried forward in the current permit.

4.2.5 Flow and pH

The existing technology limit for pH limit between 6 - 9 S.U, and flow monitoring based on the TBEL referenced in section 4.1 will remain in the permit.

4.2.6 Total Suspended Solids (TSS):

There is no water quality criteria for TSS. The existing TBEL referenced in section 4.1 will remain in the permit.

4.2.8 Chemical Additive Reporting Requirement

Currently chemical additives usage are not proposed. Chemical additive reporting requirement are in PART C.II of the permit incase the permittee decides to use chemical additives in the future.

4.2.9 Cleaning of Sedimentation Basin

Reporting requirements during basin cleaning are in PART C. III of the permit.

4.3 .0 Development of Effluent Limitations for Sewage discharge outfall 002

Outfall No.	002	**Design Flow (MGD)**	.00062
Latitude	41º 53' 58.00"	**Longitude**	-78º 42' 46.00"
Wastewater Description:	Sewage Effluent		

4.3.1 Technology-Based Limitations

The existing secondary treatment limits in the permit are less stringent than the technology limits recommended in DEP's Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Applications SOP No. BCW-PMT-003 Final, November 9, 2012, Revised, November 9, 2023 Version 1.8, and the existing general permit for Small Flow Treatment Facilities. The treatment facility is a Premier Tech's Ecoflo biofilter system which can meet the technology limits recommended in the SOP. The technology limits recommended in the SOP are: annual average limit of 10 mg/Land 20 mg/L IMAX for $CBOD_5$, and TSS, and 200CFU/100ml Geometric Mean for Fecal Coliform with yearly monitoring requirements at a minimum, annual average flow estimation and monthly monitoring for Total Residual Chlorine. The permit will be revised to be consistent with the technology limits recommended in the SOP. Limitation on pH is not required in the SOP; however, the existing pH limit of 6-9 S.U with 1/month monitoring will remain in the permit due to the discharge going to high quality waters. The existing annual monitoring frequency for $CBOD_5$, TSS, and Fecal Coliform are consistent with the requirement in the SOP and will continue with the current permit cycle.

4.3.2 TRC Limitation

Per the SOP referenced above, Water quality modeling using the TMS and WQM models will not be conducted, but the "TRC Spreadsheet" will be used to determine TRC limits for nonSRSTPs, unless UV disinfection is used or proposed. This facility is nonSRSTPs, but TRC Spreadsheet analysis was not conducted because the discharge goes to high quality water which requires non-detect for TRC. However, the existing TRC limit of 0.5mg/L AML and 1.2mg/L IMAX does not appear to be impacting the receiving stream negatively and will be retained for the current permit cycle.

5.0 Other Requirements

5.1 The following conditions are listed in Part C of the permit for sewage discharge (outfall 002)

- Annual Maintenance Report Requirement
- Measurement requirement of depth of septage and scum in all treatment units
- Septic & Treatment tank pumping requirement
- Chlorine Minimization
- Abandonment of the treatment facility for public sewers

5.2 Anti-Backsliding

Not applicable to this discharge

5.3 Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The facility discharge to a stream segment designated as High-Quality Waters. The discharge is not expected to impact the stream negatively. No Exceptional Value Waters are impacted by this discharge.

5.4 Class A Wild Trout Fisheries:

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

5.5 303d Listed stream:

The receiving streams are West Branch Tunungwant Creek and Kissem Run. West Branch Tunungwant Creek is impaired for aquatic life due to upstream impoundment and nutrients. Kissem Run is not on the 303 listed stream as impaired. No TMDLs have been developed for West Branch Tunungwant Creek. The effluent limits have been developed to ensure the facility does not contribute significantly to the impairment.

6.0 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.25	1/day	Grab
TSS	Report	Report	XXX	30	60	75	1/week	8-Hr Composite
Total Aluminum	1.9	3.7	XXX	1.5	3.0	3.8	1/week	8-Hr Composite
Total Iron	Report	Report	XXX	2.0	4.0	5	1/week	8-Hr Composite
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	1/week	8-Hr Composite

Compliance Sampling Location: At Outfall 001

6.1 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 002, Effective Period: Permit Effective Date through Permit Expiration Date.

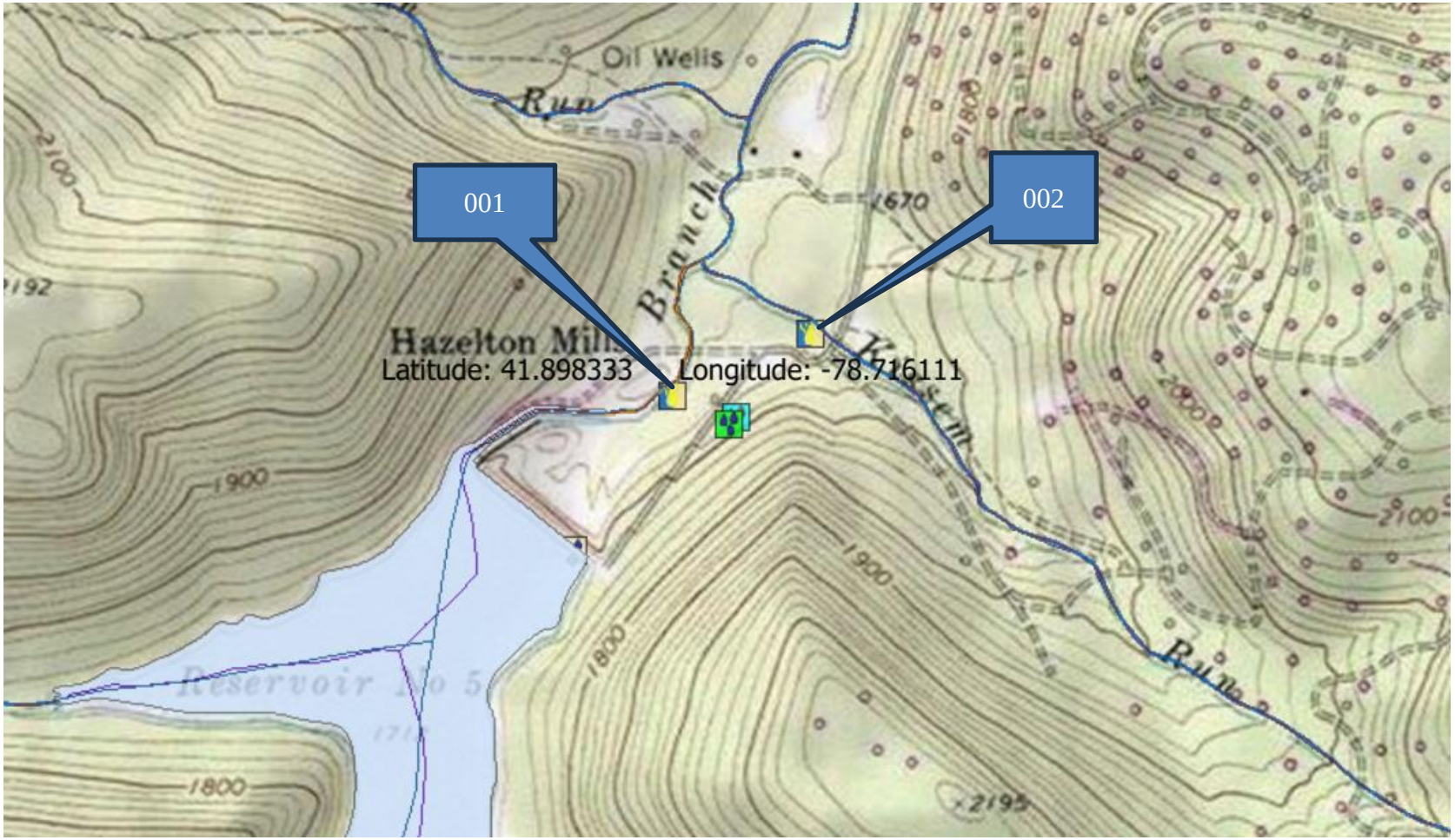
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
Flow (MGD)	Report Annl Avg	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/month	Grab
TRC	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.2	1/month	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20	1/year	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200	XXX	XXX	1/year	Grab

Compliance Sampling Location: At Outfall 002

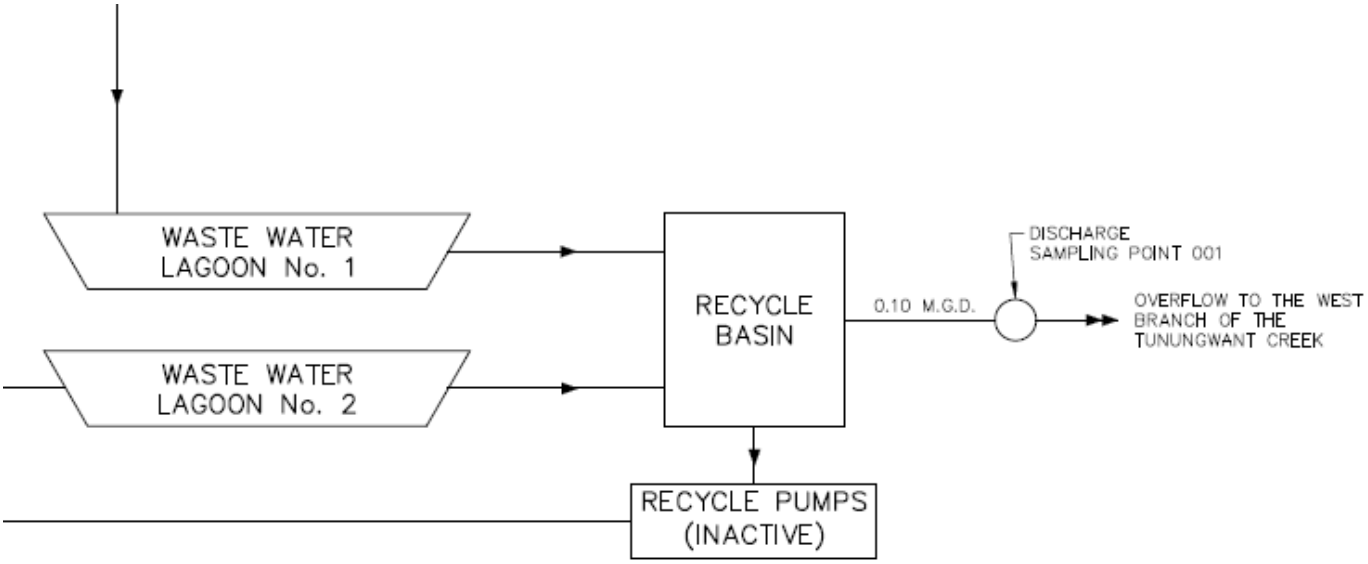
7.0 Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **C**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	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: Establishing effluent limitation for individual industrial permit and New and Reissuance of Small Flow Treatment Facility Individual NPDES Permit
☐	Other:

Attachments

A. Topographical Map



B. Pocess flow Diagram



C. TMS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Bradford City Water Authority** NPDES Permit No.: **PA0101621** Outfall No.: **001**

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

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
0.1	12.8	6.6						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		14									
	Chloride (PWS)	mg/L		3.08									
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L		5.45									
	Fluoride (PWS)	mg/L	<	0.1									
Group 2	Total Aluminum	µg/L		1840									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		19.1									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	1.4									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L		5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L	<	150									
	Total Iron	µg/L		340									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		1990									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L	<	2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	µg/L	<	5									
	Total Molybdenum	µg/L	<	2									

Stream / Surface Water Information

Bradford City Water Authority, NPDES Permit No. PA0101621, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **West Br Tunungwant Creek**

No. Reaches to Model: **1**

- ○ Statewide Criteria
- ◉ Great Lakes Criteria
- ○ ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	056990	6.7	1635	6.94			Yes
End of Reach 1	056990	4.49	1543	16			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	6.7	0.0706	1.06									100	7		
End of Reach 1	4.49	0.0706													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	6.7														
End of Reach 1	4.49														

Model Results

Bradford City Water Authority, NPDES Permit No. PA0101621, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 6.726 PMF: 1 Analysis Hardness (mg/l): 88.895 Analysis pH: 6.92

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	5,889	
Total Antimony	0	0		0	1,100	1,100	8,637	
Total Arsenic	0	0		0	340	340	2,670	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	164,891	
Total Boron	0	0		0	8,100	8,100	63,601	
Total Cadmium	0	0		0	1.796	1.89	14.9	Chem Translator of 0.949 applied
Total Chromium (III)	0	0		0	517.396	1,637	12,856	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	15.730	16.0	126	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	746	
Total Copper	0	0		0	12.028	12.5	98.4	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	56.799	70.3	552	Chem Translator of 0.808 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	12.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	423.851	425	3,335	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	2.627	3.09	24.3	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	510	
Total Zinc	0	0		0	106.056	108	851	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 6.726 PMF: 1 Analysis Hardness (mg/l): 88.895 Analysis pH: 6.92

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
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	1,727	
Total Arsenic	0	0		0	148	148	1,162	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	32,193	
Total Boron	0	0		0	1,600	1,600	12,563	
Total Cadmium	0	0		0	0.227	0.25	1.95	Chem Translator of 0.914 applied
Total Chromium (III)	0	0		0	67.303	78.3	614	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	81.6	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	149	
Total Copper	0	0		0	8.099	8.44	66.2	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	11,778	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.213	2.74	21.5	Chem Translator of 0.808 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	7.11	Chem Translator of 0.85 applied
Total Nickel	0	0		0	47.077	47.2	371	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	39.2	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	102	
Total Zinc	0	0		0	106.924	108	851	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 6.726 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
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	44.0	
Total Arsenic	0	0		0	10	10.0	78.5	
Total Barium	0	0		0	2,400	2,400	18,845	
Total Boron	0	0		0	3,100	3,100	24,341	
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	2,356	
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	7,852	
Total Mercury	0	0		0	0.003	0.003	0.024	
Total Nickel	0	0		0	610	610	4,790	
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	1.88	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 2.453 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
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	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
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	N/A	N/A	N/A	
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	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	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	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Model Results 5/7/2025 Page

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	3,775	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	7,852	THH	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	18,845	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	12,563	µg/L	Discharge Conc < TQL
Total Cadmium	1.95	µg/L	Discharge Conc < TQL
Total Chromium (III)	614	µg/L	Discharge Conc < TQL
Hexavalent Chromium	80.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	149	µg/L	Discharge Conc < TQL
Total Copper	63.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	2,356	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	11,778	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	21.5	µg/L	Discharge Conc < TQL
Total Mercury	0.003	µg/L	Discharge Conc < TQL
Total Nickel	371	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	39.2	µg/L	Discharge Conc < TQL
Total Silver	15.6	µg/L	Discharge Conc < TQL
Total Thallium	1.88	µg/L	Discharge Conc < TQL
Total Zinc	546	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS

D. Revised Flow Data with Explanation

From Steve Disney <SDISNEY@BRADFORDWATER.COM>
Date Wed 5/7/2025 8:34 AM
To Kwedza, John <jkwedza@pa.gov>
Cc rkrause@banksonengineers.com <rkrause@banksonengineers.com>; Olesnanik, Adam <aolesnanik@pa.gov>

John,

Below is 2024 and YTD 2025 revisions after the programming error was corrected.

Month/Year	Avg MGD
Jan-24	0.11
Feb-24	0.11
Mar-24	0.10
Apr-24	0.10
May-24	0.09
Jun-24	0.12
Jul-24	0.12
Aug-24	0.13
Sep-24	0.13
Oct-24	0.13
Nov-24	0.11
Dec-24	0.12
Jan-25	0.12
Feb-25	0.12
Mar-25	0.12
Apr-25	0.11

Steve Disney
Executive Director
Bradford Water and Sanitary Authorities
28 Kennedy St. Bradford, PA 16701-2006
t:814-362-3004, cell:814-331-8738
email: sdisney@bradfordwater.com

-----Original Message-----
From: Kwedza, John <jkwedza@pa.gov>
Sent: Wednesday, May 7, 2025 7:47 AM
To: Steve Disney <SDISNEY@BRADFORDWATER.COM>
Cc: rkrause@banksonengineers.com; Olesnanik, Adam <aolesnanik@pa.gov>
Subject: Re: [External] RE: Flow values

From: Steve Disney <SDISNEY@BRADFORDWATER.COM>
Sent: Wednesday, May 7, 2025 7:42 AM
To: Kwedza, John <jkwedza@pa.gov>
Cc: rkrause@banksonengineers.com <rkrause@banksonengineers.com>; Olesnanik, Adam <aolesnanik@pa.gov>
Subject: RE: [External] RE: Flow values

John,

This is from our SCADA provider.....

"Upon further investigation, using the tag history table and the trends on the ignition scada and some calculations, I discovered that the backwash totals report has not been handling the rollover of the totalizer value. The register used for the totalizer value in the modicon PLCs only allows for a maximum value of 65535. When the flow total goes over 65535 it starts back over at zero. Ignitions scada native report module can report on the change in a value over a set period of time, but it doesn't seem to be able to handle when that value rolls over. All the revised data have now been logged to ignitions historian."

Now when we look at the calculated numbers for NPDES reporting, they are all back within the average range of 0.1 MGD.

Steve Disney
Executive Director
Bradford Water and Sanitary Authorities
28 Kennedy St. Bradford, PA 16701-2006
t:814-362-3004, cell:814-331-8738
email: sdisney@bradfordwater.com

-----Original Message-----
From: Kwedza, John <jkwedza@pa.gov>
Sent: Tuesday, May 6, 2025 9:06 AM
To: Steve Disney <SDISNEY@BRADFORDWATER.COM>
Cc: rkrause@banksonengineers.com; Olesnanik, Adam <aolesnanik@pa.gov>
Subject: Re: [External] RE: Flow values

Noted, thanks

J. Pascal Kwedza, P.E.| Environmental Engineer