Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0217361**
Facility Type	**Municipal**	APS ID	**1126584**
Major / Minor	**Minor**	Authorization ID	**1508031**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Municipal Authority of Westmoreland County**	Facility Name	**Iron Bridge STP**
Applicant Address	124 Park and Pool Road	Facility Address	214 Sewage Plt Lane
	New Stanton, PA 15672		Mt Pleasant, PA 15666
Applicant Contact	Katelyn Warheit	Facility Contact	Katelyn Warheit
Applicant Phone	(724) 755-5800	Facility Phone	(724) 755-5800
Client ID	64197	Site ID	487047
Ch 94 Load Status	Not Overloaded	Municipality	East Huntingdon Township
Connection Status	No Limitations	County	Westmoreland
Date Application Received	November 26, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES permit renewal application.

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES renewal application from Gibson Thomas Engineering (consultant) on behalf of Municipal Authority of Westmoreland County (MAWC/permittee) on November 26, 2024, for permittee's Iron Bridge STP (facility). The facility is in East Huntingdon Township, Westmoreland County and the treated effluent is discharged into Jacobs Creek in state watershed 19-D. The current permit will expire on May 31, 2025. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001. This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: More stringent: CBOD5, Ammonia, TRC. New monitoring: E. Coli, Total Zinc.

Sludge use and disposal description and location(s): Aerobically digested biosolids are sent to Mt. Pleasant Borough STP for further treatment and ultimate disposal.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, P.E. / Environmental Engineer	May 27, 2025
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	05/28/2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.25
Latitude	40º 6' 46"	Longitude	-79º 33' 11.7"
Quad Name	Connellsville	Quad Code	1809
Wastewater Description:	Sewage Effluent		
Receiving Waters	Jacobs Creek (WWF)	Stream Code	37868
NHD Com ID	69914951	RMI	17.02
Drainage Area	48.8 mi^2	Yield (cfs/mi^2)	0.023
Q_{7-10} Flow (cfs)	1.12	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1029.38	Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	**WWF**	Existing Use Qualifier	Ch. 93
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Aquatic Life, Recreational,		
Cause(s) of Impairment	**Habitat Alterations, Aluminum, Siltation, Iron, E. Coli**		
Source(s) of Impairment	**Highway/Road/Bridge Runoff, AMD, Urban Runoff/Storm Sewers, CSOs**		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°C)	25	Default
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake	MAWC McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI	1.66	Distance from Outfall (mi)	42.13

Changes Since Last Permit Issuance: The permit was transferred from East Huntingdon Township to MAWC on June 13, 2024. The Part II WQM permit 6598407 was amended on October 29, 2024, to replace existing gas chlorination with liquid chlorination system to meet the TRC limit in the NPDES permit.

Streamflow:
There's no nearby StreamGage from this discharge point. The USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on May 20, 2025) was utilized to determine the drainage area at discharge point and at confluence with UNT 37940 (node 2). The drainage area at Outfall 001 was found to be 48.8 mi^2 and 50 mi^2 at node 2. The Q_{7-10} at discharge point was found to be 1.12 cfs. The resulting yield is 1.12 cfs/48.8 mi2 or 0.023 cfs/mi^2. The default Q_{1-10}:Q_{7-10} of 0.64 and default Q_{30-10}:Q_{7-10} of 1.36 will be used for modeling, as appropriate.

PWS Intake:
The nearest downstream public water supply is MAWC's McKeesport facility in McKeesport City, Allegheny County, on Youghiogheny River at RMI 1.66. Its approximately 42.13 miles downstream of Outfall 001. Discharge from this facility is expected not to impact the PWS intake.

Wastewater Characteristics:
Default discharge pH of 7.0 S.U., temperature of 25°C and hardness of 100 mg/l will be used for modeling, as appropriate.

Background data:
There's no nearby WQN station to collect the stream data from. In absence of site-specific data, a default pH of 7.0, temperature of 25°C, and hardness of 100 mg/l will be used for modeling, as appropriate.

Jacobs Creek Impairment:
The receiving stream, Jacobs Creek, is Aquatic Life impaired (Siltation, Habitat Alterations) from urban runoff/storm sewer (May 16, 2025), and Recreational use impaired (E. Coli) from CSO and Urban Runoff/Storm sewers (1/31/2024). The terms, conditions, and effluent limits will be set to avoid addition to the existing impairment.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving streams are designated as Warm Water Fishes (WWF). No High-Quality stream or Exceptional Value water is impacted by this discharge; therefore, no Antidegradation Analysis is performed for the discharge.

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

Treatment Facility Summary

Treatment Facility Name: Iron Bridge STP

WQM Permit No.	Issuance Date
6598407	11/17/1998
6598407 T-1	6/13/2024
6598407 A-1	10/29/2024

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorine With Dechlorination	0.25

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.25	438	Not Overloaded	Combination	Landfill

Other Comments: None

Facility Information

Municipal Authority of Westmoreland County (MAWC) owns and operates a minor sewage treatment plant named Iron Bridge STP. The ownership of the facility was transferred to MAWC from East Huntingdon Township on June 6, 2024. Per the transferred WQM permit (June 13, 2024), the facility consists of the following treatment units:

- One (1) 2.3 MGD comminutor
- One (1) one-inch Bypass manually cleaned bar screen
- One (1) 77,120-gallon aerated flow equalization tank with emergency overflow to the aeration basin
- Two (2) Goulds 45D 1.5 HP pump
- Three (3) 190-cfm blowers
- Three (3) 1170-cfm blowers
- Two (2) 45,300-gallon extended aeration tank
- Forty-four (44) removeable Sanitaire D-24 type coarse air diffusers
- Two (2) 31,760-gallon clarifiers with airlock return activated sludge pumps
- Two (2) aerobic sludge digesters with emergency overflow
- Two (2) 2,594-gallon chlorine contact tanks

- Two (2) Gas Chlorination vacuum fed submerged chemical induction units with a dosage rate of 2.6 ppd
- One (1) polishing clarifier
- One (1) post treatment aeration and dechlorination tank
- One (1) Control Building with gas chlorine storage, office space, electrical storage, and laboratory.

Biosolids management: Aerobically digested biosolids are sent to Mt. Pleasant Borough STP for further treatment and ultimate disposal.

Existing Limits

The following limits were applied in the current permit for the period of June 1, 2020, to May 31, 2025 at Outfall 001:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5 Nov 1 - Apr 30	52	79	XXX	25.0	37.5	50	1/week	8-Hr Composite
CBOD5 May 1 - Oct 31	31	48	XXX	15	23	30	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	8-Hr Composite
TSS	63	94	XXX	30	45	60	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/week	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	37	56	XXX	18	27	36	1/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	13	19	XXX	6	9	12	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/week	8-Hr Composite

Compliance History

DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	0.149	0.337	0.137	0.152	0.139	0.096	0.106	0.109	0.117	0.107	0.154	0.296
Flow (MGD) Weekly Average	0.167	0.444	0.218	0.22	0.176	0.132	0.106	0.132	0.144	0.121	0.195	0.533
pH (S.U.) IMIN	7.1	7.1	7.1	7.0	7.2	7.3	7.3	7.2	7.0	7.0	7.1	7.0
pH (S.U.) IMAX	7.6	7.5	7.4	7.5	7.8	7.8	7.8	7.8	7.7	7.7	7.4	7.4
DO (mg/L) IMIN	7.0	5.2	6.7	5.2	5.9	6.4	5.7	5.4	5.9	5.2	6.3	5.1
TRC (mg/L) Average Monthly	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.1
TRC (mg/L) IMAX	0.44	0.35	0.91	0.68	1.36	0.35	0.64	0.35	0.84	0.27	0.55	0.74
CBOD5 (lbs/day) Average Monthly	28	13	8	11	4	5	3	3	6	4	4	< 33
CBOD5 (lbs/day) Weekly Average	43	22	10	25	6	8	4	3	10	5	5	158
CBOD5 (mg/L) Average Monthly	23.7	6.4	8.1	7.2	4.8	5.3	3.6	3.4	5.3	4.5	3.5	< 8.5
CBOD5 (mg/L) Weekly Average	34.2	8.3	11.0	12.9	7.4	11.0	4.4	4.3	6.8	6.9	4.3	23.1
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	312	330	306	313	237	325	274	273	335	295	414	319
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	481	433	413	471	302	387	321	334	615	379	725	378
BOD5 (mg/L) Raw Sewage Influent Average Monthly	252	172	302	221	259	387	346	322	273	323	372	190
BOD5 (mg/L) Raw Sewage Influent Weekly Average	345	233	372	344	388	534	370	378	335	369	731	304
TSS (lbs/day) Average Monthly	33	13	< 6	< 11	8	< 5	< 4	< 4	< 6	< 5	< 6	< 90
TSS (lbs/day) Raw Sewage Influent Average Monthly	234	258	163	246	161	169	151	157	310	217	205	321
TSS (lbs/day) Raw Sewage Influent Weekly Average	263	323	189	336	182	245	215	226	730	253	216	655

TSS (lbs/day) Weekly Average	58	20	8	18	12	< 6	< 4	< 4	< 13	6	< 7	505
TSS (mg/L) Average Monthly	28	6	< 6	< 7	8	< 5	< 5	< 5	< 5	< 6	< 5	< 17
TSS (mg/L) Raw Sewage Influent Average Monthly	193	130	165	164	184	197	190	187	219	238	178	153
TSS (mg/L) Raw Sewage Influent Weekly Average	244	178	202	202	240	316	248	274	290	247	218	246
TSS (mg/L) Weekly Average	46	7	10	9	12	7	< 5	< 5	< 5	6	< 5	74
Fecal Coliform (No./100 ml) Geometric Mean	< 5	< 6	< 5	< 8	< 5	< 9	< 5	< 6	< 5	< 33	< 7	< 19
Fecal Coliform (No./100 ml) IMAX	< 5	10	< 5	60	5	16	5	10	< 5	1494	26	1049
Total Nitrogen (mg/L) Daily Maximum	GG	GG	4.6	GG	GG	GG	GG	GG	GG	GG	GG	GG
Ammonia (lbs/day) Average Monthly	< 4	4	2	5	2	0.5	< 0.2	< 0.4	< 2	< 0.9	< 0.3	< 8
Ammonia (lbs/day) Weekly Average	7	7	5	11	5	0.9	0.2	0.5	7	2	1	34
Ammonia (mg/L) Average Monthly	< 3.1	2.0	2.3	3.2	2.8	0.6	< 0.2	< 0.4	< 0.8	< 1.0	< 0.3	< 1.6
Ammonia (mg/L) Weekly Average	6.3	3.9	5.4	5.8	6.6	1.3	0.3	0.6	2.7	2.4	1.0	5.0
Total Phosphorus (mg/L) Daily Maximum	GG	GG	1.09	GG	GG	GG	GG	GG	GG	GG	GG	GG

Compliance History

Effluent Violations for Outfall 001, from: May 1, 2024 To: March 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	03/31/25	Wkly Avg	46	mg/L	45	mg/L
Fecal Coliform	06/30/24	IMAX	1494	No./100 ml	1000	No./100 ml
Fecal Coliform	06/30/24	IMAX	1494	No./100 ml	1000	No./100 ml

Summary of Inspections:

10/03/2023: RTPT conducted. No violation noted.

07/12/2023: CEI conducted. Review of the DMR data indicated violations including effluent violations for DO, Fecal Coliform, TRC, and TSS; and SSO. The plant appeared to be operating properly, effluent from the CCT appeared clear and in good visual condition, and no offensive odors were detected during the inspection.

08/26/2020: CEI conducted. Violations noted including no samples collected for April and May of 2020 and TRC effluent violation. The effluent after CCT appeared clear.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.25
Latitude 40º 6' 45.00" **Longitude** -79º 33' 12.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

Model input data

The following data will be used for modeling, as needed:

- Discharge pH 7.0 (Default)
- Discharge Temperature 25°C (Default)
- Discharge Hardness 100 mg/l (Default)
- Stream pH 7.0 (Default)
- Stream Temperature 25.0°C (Default)
- Stream Hardness 100 mg/l (Default)

The following two nodes were used in modeling:

Node 1: At the outfall 001 on Jacobs Creek (37868)
Elevation: 1029.15 ft (National Map-Advanced Viewer, 5/20/2025)
Drainage Area: 48.8 mi^2 (StreamStat Version 3.0, 5/20/2025)
River Mile Index: 17.02 (PA DEP eMapPA)
Low Flow Yield: 0.023 cfs/mi^2
Q_{7-10}: 1.12 cfs
Discharge Flow: 0.25 MGD

Node 2: At confluence with UNT 37940 with Jacobs Creek
Elevation: 1025.38 ft (National Map-Advanced Viewer, 5/20/2025)
Drainage Area: 50 mi^2 (StreamStat Version 3.0, 5/20/2025)
River Mile Index: 16.26 (PA DEP eMapPA)

Low Flow Yield: 0.023 cfs/mi^2
Discharge Flow: 0.0 MGD

WQM 7.0 Model

WQM 7.0 version 1.11 is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and DO. The model simulates two basic processes. In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model was utilized for this permit renewal by using Q_{7-10} and current background water quality levels of the stream.

NH_3-N

WQM 7.0 suggested NH_3-N limit of 3.29 mg/l as monthly average and 6.58 mg/l as IMAX limit during summer to protect water quality standards. The current permit has summer limit of 6 mg/l as AML (Average Monthly Limit) and 12 mg/l IMAX. The proposed limits are more stringent than existing limits. The reasons for more stringent limit might be that the original modeling was conducted in 2008 using WQM 6.3 version that utilized a LFY of 0.043 cfs/mi2, resulting a Q7-10 of 1.5656 cfs, whereas StreamStats produced a Q7-10 of 1.12 cfs (resulting LFY is 0.023 cfs/mi2) during this renewal. Therefore, even though StreamStats provided higher drainage area (48.8 mi2) compared to 2008 permit (36.41 mi2), due to lower yield, the ultimate available flow is lower, which could have resulted in more stringent ammonia limit. The winter limits are calculated by multiplying the summer limits with a factor of 3, resulting in AML of 9.87 mg/l and IMAX of 19.74 mg/l. A review of the past 12 months DMR data indicated that the facility is discharging at much lower concentration, therefore, a compliance schedule isn't needed.

CBOD5

WQM 7.0 suggests CBOD5 limit of 10.96 mg/l as AML during summer season. The current permit has summer AML of 15 mg/l. The probable reason for more stringent model output might be less available dilution. The winter limits are calculated by multiplying summer limits with a factor of 3 (391-2000-013), which resulted in AML of 32.88 mg/l, 49.32 mg/l as Weekly Average, and 65.76 mg/l as IMAX. The current permit has winter AML of 25 mg/l, Weekly Average of 37.5 mg/l, and IMAX of 50 mg/l. More stringent limits will be applied. A review of the past 12 months DMR data indicated that the facility is discharging at a concentration below 10 mg/l (except for 1 winter month-23.7 mg/l). Since the facility is meeting more stringent proposed limits, a compliance schedule isn't needed.

DO

WQM 7.0 suggests minimum DO of 5.0 mg/l which is the model input and same as existing limit. Existing limit will be carried over.

Toxics Management Spreadsheet (TMS)

The facility provided 1 sample result for **Total Copper, Total Lead, and Total Zinc**. These toxics are modeled through TMS and the model recommended monitoring requirement for **Total Zinc**, based on an input value of 0.0504 mg/l. Since there's only 1 sample result to analyze, it is recommended that the permittee should collect more data during this permit term to evaluate on the next renewal. With this consideration, it is recommended that a 1/6 month monitoring is needed that will provide sufficient (10) data points for next renewal.

Other Requirements/BPJ based limits

Total Phosphorus:

PADEP's SOP BCW-PMT-033 recommends monitoring for Total Phosphorus for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Current monitoring requirement will be continued. The minimum sampling frequency is changed from 1/week to 1/year, based on an email confirmation during last permit term and frequencies applied to facilities of similar size.

Total Nitrogen:

PADEP's SOP BCW-PMT-033 recommends monitoring for Total Nitrogen for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Current monitoring requirement will be continued. The minimum sampling frequency is changed from 1/week to 1/year and sampling type is changed from 8-hr composite to calculation.

Fecal Coliform:
The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. These are existing requirements and will be carried over in this renewal.

E. Coli:
Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends quarterly E. Coli monitoring for minor sewage dischargers with a design flow between ≥0.05 MGD and 1.0 MGD. This requirement will be applied from this permit term.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
The existing limits of 30 mg/L average monthly, 45 mg/l as weekly average, and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The mass based average monthly and weekly average limit is calculated to be 63 lbs./day and 94 lbs./day which are the same as were in existing permit and will be carried over.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The model recommends AML of 0.432 mg/l and IMAX of 1.414 mg/l, which are more stringent than current limits of 0.5 mg/l AML and 1.6 mg/l IMAX. A review of past 12 months DMR data indicated that the facility is discharging around 0.1 mg/l as monthly average, which is much lower than proposed AML. The proposed limits will be applied without a compliance schedule.

Flow and Influent BOD_5 and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Anti-Backsliding
Anti-backsliding prohibition is justified in sections where an exception is justified for the affected pollutant(s). For remaining pollutants, this prohibition isn't applicable since the proposed limits are at least as stringent as were in current permit.

Rounding of numbers:
Rounding of numbers followed the guidelines as provided in 362-0400-001, Chapter 5, page 9; unless the lab can't report at that number. In those cases, BPJ was applied to round up/down the numbers that were most appropriate to the specific pollutant and the number.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.43	XXX	1.41	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	52	79	XXX	25.0	37.5	50	1/week	8-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	22.94	34.4	XXX	11.0	16.5	22.0	1/week	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	8-Hr Composite
Total Suspended Solids	63	94	XXX	30	45	60	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	Grab

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

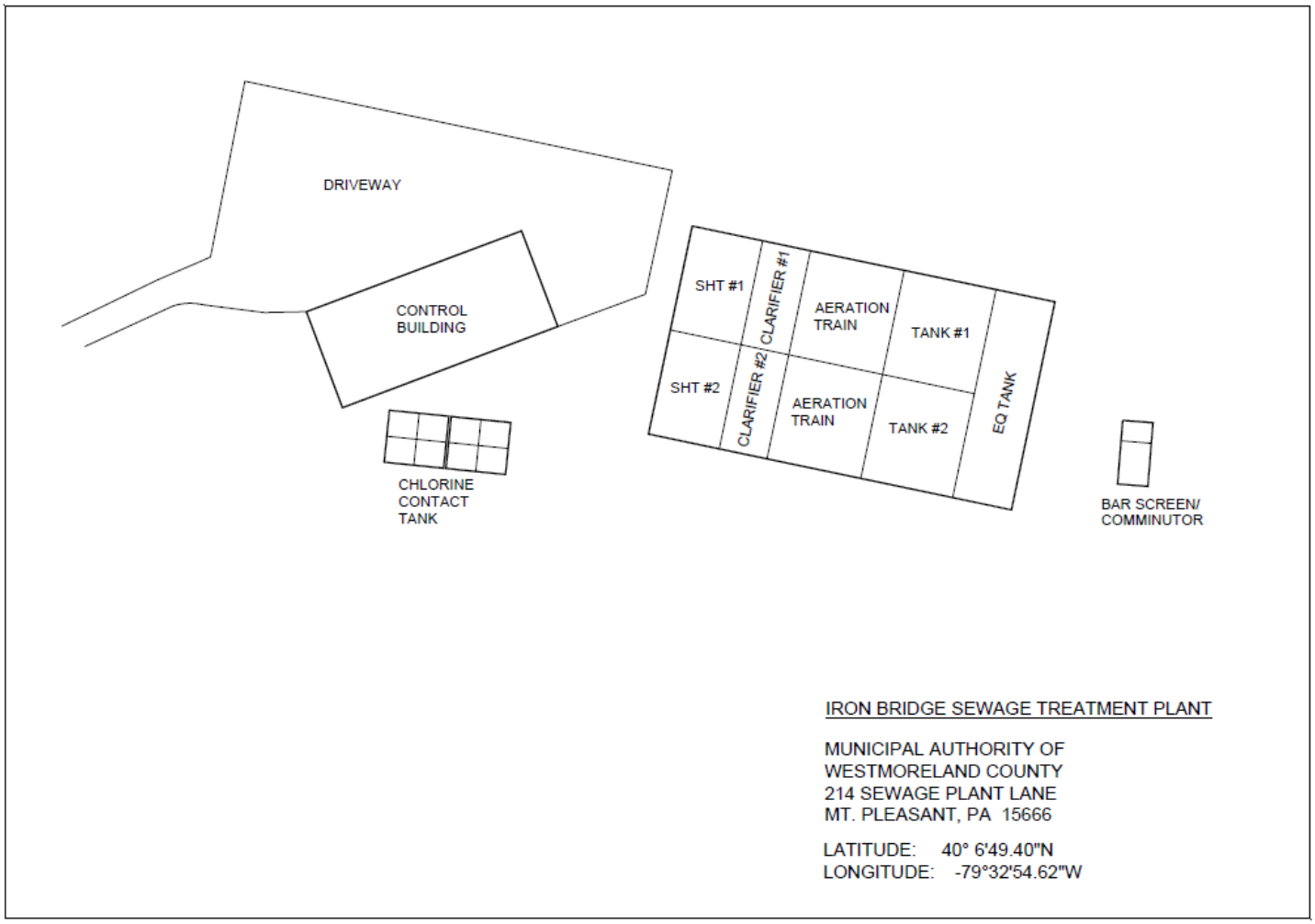
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	20.6	31	XXX	9.9	14.8	19.8	1/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	6.9	10.3	XXX	3.3	5.0	6.6	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Zinc, Total	XXX	XXX	XXX	Report SEMI AVG	Report Daily Max	XXX	1/6 months	8-Hr Composite

Compliance Sampling Location: At Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

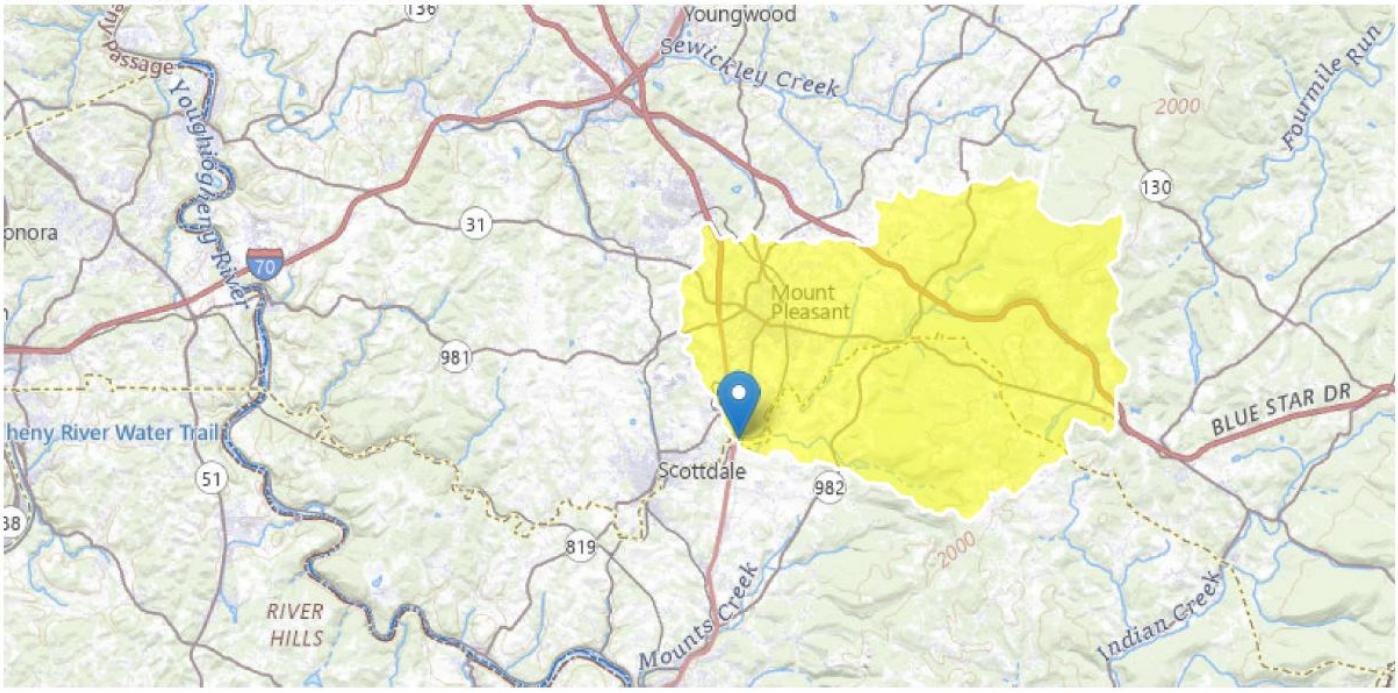
Treatment Plant Schematic



StreamStats at Outfall 001

PA0217361 at outfall 001

Region ID: PA
Workspace ID: PA20250521013330205000
Clicked Point (Latitude, Longitude): 40.11253, -79.55357
Time: 2025-05-20 21:33:52 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	48.8	square miles
ELEV	Mean Basin Elevation	1498	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	48.8	square miles	2.26	1400
ELEV	Mean Basin Elevation	1498	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	2.83	ft^3/s	43	43
30 Day 2 Year Low Flow	4.62	ft^3/s	38	38
7 Day 10 Year Low Flow	1.12	ft^3/s	66	66
30 Day 10 Year Low Flow	1.84	ft^3/s	54	54
90 Day 10 Year Low Flow	3.27	ft^3/s	41	41

Low-Flow Statistics Citations

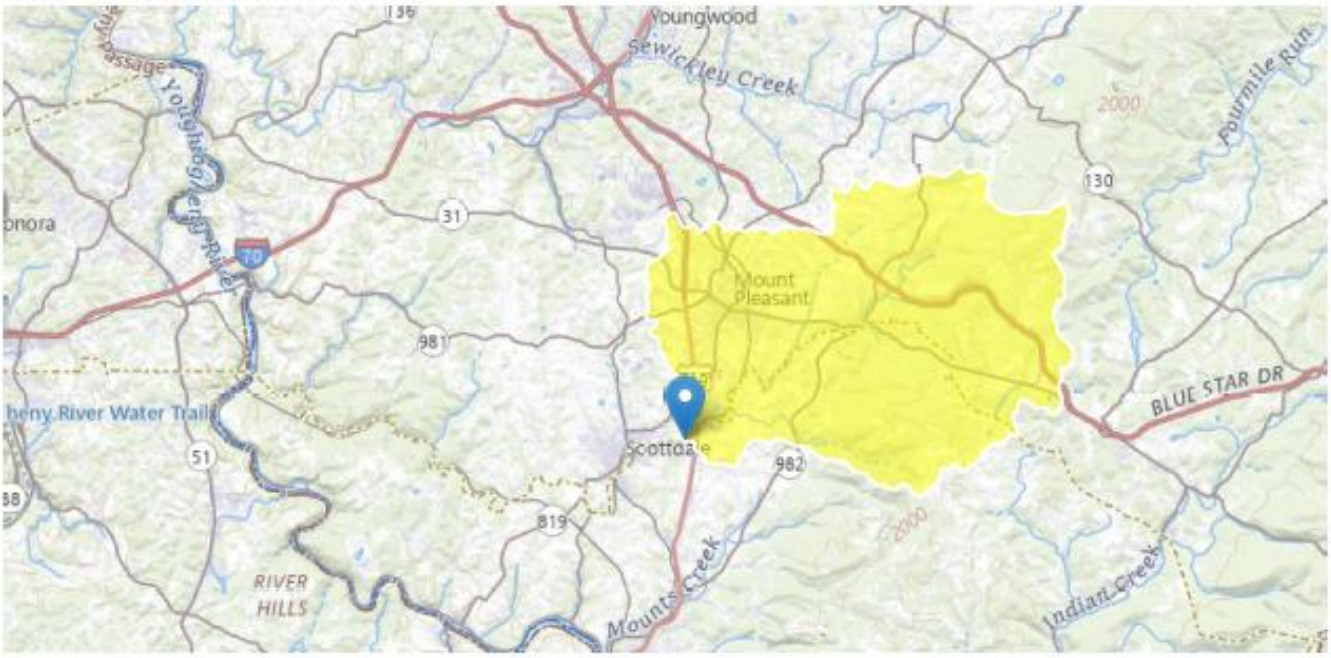
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.29.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats at node 2

PA0217361 at node 2

Region ID: PA
Workspace ID: PA20250521013544123000
Clicked Point (Latitude, Longitude): 40.10596, -79.56069
Time: 2025-05-20 21:36:05 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	50	square miles
ELEV	Mean Basin Elevation	1489	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	50	square miles	2.26	1400
ELEV	Mean Basin Elevation	1489	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

P|L: Lower 90% Prediction |nterval, P|U: Upper 90% Prediction |nterval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	2.9	ft^3/s	43	43
30 Day 2 Year Low Flow	4.72	ft^3/s	38	38
7 Day 10 Year Low Flow	1.16	ft^3/s	66	66
30 Day 10 Year Low Flow	1.88	ft^3/s	54	54
90 Day 10 Year Low Flow	3.34	ft^3/s	41	41

Low-Flow Statistics Citations

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

Application Version: 4.29.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

WQM 7.0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19D	37868	JACOBS CREEK	**17.020**	1029.15	48.80	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.023	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Iron Bridge STP	PA0217361	0.2500	0.2500	0.2500	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	15.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	6.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19D	37868	JACOBS CREEK	**16.260**	1025.38	50.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.023	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19D	37868	JACOBS CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
17.020	1.12	0.00	1.12	.3868	0.00094	.616	25.04	40.66	0.10	0.474	25.00	7.00
Q1-10 Flow												
17.020	0.72	0.00	0.72	.3868	0.00094	NA	NA	NA	0.08	0.565	25.00	7.00
Q30-10 Flow												
17.020	1.53	0.00	1.53	.3868	0.00094	NA	NA	NA	0.11	0.415	25.00	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37868	JACOBS CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
17.020	0.250	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
25.037	0.616	40.664	0.098
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.30	0.631	0.84	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.412	0.984	Tsivoglou	5
Reach Travel Time (days)			
0.474			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.047	4.14	0.80	7.04
0.095	3.98	0.76	6.71
0.142	3.84	0.73	6.41
0.190	3.70	0.69	6.14
0.237	3.56	0.66	5.89
0.285	3.43	0.63	5.67
0.332	3.30	0.60	5.47
0.380	3.18	0.57	5.30
0.427	3.06	0.54	5.15
0.474	2.95	0.52	5.01

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19D	37868	JACOBS CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
17.020	Iron Bridge STP	11.07	12	11.07	12	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
17.020	Iron Bridge STP	1.37	6	1.37	6	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
17.02	Iron Bridge STP	10.96	10.96	3.29	3.29	5	5	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	37868	JACOBS CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
17.020	Iron Bridge STP	PA0217361	0.250	CBOD5	10.96		
				NH3-N	3.29	6.58	
				Dissolved Oxygen			5

TMS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Iron Bridge STP NPDES Permit No.: PA0217361 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated sewage

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
0.25	100	7						

					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											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L		0.00181									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	mg/L	<	0.001									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.0504									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

Group 3	Chlorobenzene	µg/L												
	Chlorodibromomethane	µg/L	<											
	Chloroethane	µg/L	<											
	2-Chloroethyl Vinyl Ether	µg/L	<											
	Chloroform	µg/L	<											
	Dichlorobromomethane	µg/L	<											
	1,1-Dichloroethane	µg/L	<											
	1,2-Dichloroethane	µg/L	<											
	1,1-Dichloroethylene	µg/L	<											
	1,2-Dichloropropane	µg/L	<											
	1,3-Dichloropropylene	µg/L	<											
	1,4-Dioxane	µg/L	<											
	Ethylbenzene	µg/L	<											
	Methyl Bromide	µg/L	<											
	Methyl Chloride	µg/L	<											
	Methylene Chloride	µg/L	<											
	1,1,2,2-Tetrachloroethane	µg/L	<											
	Tetrachloroethylene	µg/L	<											
	Toluene	µg/L	<											
	1,2-trans-Dichloroethylene	µg/L	<											
	1,1,1-Trichloroethane	µg/L	<											
	1,1,2-Trichloroethane	µg/L	<											
	Trichloroethylene	µg/L	<											
	Vinyl Chloride	µg/L	<											
Group 4	2-Chlorophenol	µg/L	<											
	2,4-Dichlorophenol	µg/L	<											
	2,4-Dimethylphenol	µg/L	<											
	4,6-Dinitro-o-Cresol	µg/L	<											
	2,4-Dinitrophenol	µg/L	<											
	2-Nitrophenol	µg/L	<											
	4-Nitrophenol	µg/L	<											
	p-Chloro-m-Cresol	µg/L	<											
	Pentachlorophenol	µg/L	<											
	Phenol	µg/L	<											
	2,4,6-Trichlorophenol	µg/L	<											
Group 5	Acenaphthene	µg/L	<											
	Acenaphthylene	µg/L	<											
	Anthracene	µg/L	<											
	Benzidine	µg/L	<											
	Benzo(a)Anthracene	µg/L	<											
	Benzo(a)Pyrene	µg/L	<											
	3,4-Benzofluoranthene	µg/L	<											
	Benzo(ghi)Perylene	µg/L	<											
	Benzo(k)Fluoranthene	µg/L	<											
	Bis(2-Chloroethoxy)Methane	µg/L	<											
	Bis(2-Chloroethyl)Ether	µg/L	<											
	Bis(2-Chloroisopropyl)Ether	µg/L	<											
	Bis(2-Ethylhexyl)Phthalate	µg/L	<											
	4-Bromophenyl Phenyl Ether	µg/L	<											
	Butyl Benzyl Phthalate	µg/L	<											
	2-Chloronaphthalene	µg/L	<											
	4-Chlorophenyl Phenyl Ether	µg/L	<											
	Chrysene	µg/L	<											
	Dibenzo(a,h)Anthrancene	µg/L	<											
	1,2-Dichlorobenzene	µg/L	<											
	1,3-Dichlorobenzene	µg/L	<											
	1,4-Dichlorobenzene	µg/L	<											
	3,3-Dichlorobenzidine	µg/L	<											
	Diethyl Phthalate	µg/L	<											
	Dimethyl Phthalate	µg/L	<											
	Di-n-Butyl Phthalate	µg/L	<											
	2,4-Dinitrotoluene	µg/L	<											
	2,6-Dinitrotoluene	µg/L	<											
	Di-n-Octyl Phthalate	µg/L	<											

	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

Stream / Surface Water Information

Iron Bridge STP, NPDES Permit No. PA0217361, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Jacobs Creek

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037868	17.02	1029.38	48.8			Yes
End of Reach 1	037868	16.26	1025.38	50			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	17.02	0.023										100	7		
End of Reach 1	16.26	0.023										100	7		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	17.02														
End of Reach 1	16.26														

Model Results

Iron Bridge STP, NPDES Permit No. PA0217361, Outfall 001

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.695 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	13.439	14.0	42.2	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	246	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	361	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 31.081 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	8.956	9.33	36.4	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	12.4	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	468	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 31.081 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

☑ *CRL* CCT (min): 16.245 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

☑ *Recommended WQBELs & Monitoring Requirements*

No. Samples/Month: 4

Pollutants	Mass Limits AML (lbs/day)	Mass Limits MDL (lbs/day)	Concentration Limits AML	Concentration Limits MDL	Concentration Limits IMAX	Concentration Limits Units	Governing WQBEL	WQBEL Basis	Comments
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.23	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ *Other Pollutants without Limits or Monitoring*

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

Pollutants	Governing WQBEL	Units	Comments
Total Copper	0.027	mg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	N/A	N/A	Discharge Conc < TQL

TRC

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1.12	= Q stream (cfs)	0.5	= CV Daily
0.25	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.943	1.3.2.iii	WLA cfc =	0.912
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.351	5.1d	LTA_cfc =	0.530

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.432	AFC
		INST MAX LIMIT (mg/l) =	1.414	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_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	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_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)