pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0052647**
Facility Type	**Industrial**	APS ID	**1064325**
Major / Minor	**Minor**	Authorization ID	**1397802**

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

Applicant and Facility Information

Applicant Name	**Pottstown Borough Authority**	Facility Name	**Pottstown Borough Water Treatment Plant**
Applicant Address	100 East High Street	Facility Address	668 Old Reading Pike
	Pottstown, PA 19464		Stowe, PA 19464
Applicant Contact	Brent Wagner	Facility Contact	Brent Wagner
Applicant Phone	(610) 970-6530	Facility Phone	(610) 970-6530
Client ID	52334	Site ID	481617
SIC Code	4941	Municipality	Pottstown Borough
SIC Description	Trans. & Utilities - Water Supply	County	Montgomery
Date Application Received	May 26, 2022	EPA Waived?	Yes
Date Application Accepted	June 2, 2022	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Herbert, Rowland & Grubic, Inc. (consultant) on behalf of Pottstown Borough Authority (permittee/authority) on May 26, 2022 for permittee's Pottstown Borough Water Treatment Plant (facility). The facility is in Pottstown Borough, Montgomery County. The treated effluent is discharged through Outfall 001 and 002 into Schuylkill River in State Watershed 3-D, classified as WWF/MF. The facility is a minor industrial waste facility without ELG (MIIW1). The current permit will expire on November 30, 2022. The terms and conditions of the permit will be 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: Mass limits recalculated, TRC average monthly limit for outfall 002 revised.

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, E.I.T. / Project Manager	June 21, 2022
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	06/21/2022

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.22
Latitude	40º 14' 28"	Longitude	-75º 41' 46.00"
Quad Name	Pottstown	Quad Code	1740
Wastewater Description:	Water Treatment Effluent		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	00833
NHD Com ID	25990574	RMI	57.04
Drainage Area	1,050 mi^2	Yield (cfs/mi^2)	0.26
Q_{7-10} Flow (cfs)	273	Q_{7-10} Basis	Please see below
Elevation (ft)	124.79	Slope (ft/ft)	
Watershed No.	3-D	Chapter 93 Class.	WWF, MF
Existing Use	**WWF**	Existing Use Qualifier	Ch. 93
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

Background/Ambient Data		Data Source
pH (SU)	7.3	WQN0111, median July-Sep, 1999-2019
Temperature (°C)	22.87	WQN0111, median July-Sep, 1999-2019
Hardness (mg/L)	149	WQN0111, median July-Sep, 1999-2019
Other:		

Nearest Downstream Public Water Supply Intake		PA American Royersford in Phoenixville, Chester County	
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	46.5	Distance from Outfall (mi)	10.54

Other Comments: Changes Since Last Permit Issuance: None

Drainage Area:
The drainage area upstream of the point of discharge is 1,050 mi^2 according to USGS PA StreamStats, accessible at https://streamstats.usgs.gov/ss/

Stream Flow:
Streamflow data was collected from the nearest downstream USGS stream gage 01472000 located in Schuylkill River at Pottstown, PA. Q_{7-10}, Q_{1-10}, and Q_{30-10} values at this gage are 301 cfs, 276 cfs, and 349 cfs respectively for the reporting years of 1980-2008. The drainage area was found to be 1,147 mi^2. These values were obtained from the latest USGS streamflow report (1). The drainage area at the discharge point was found to be 1,050 mi^2 from USGS StreamStats Version 3.0 Flow Statistics Ungaged Site Report on June 16, 2022.

Q_{7-10} runoff rate = 301 cfs/1147 mi^2 = 0.26 cfs/mi^2
Q_{7-10} at Outfall 001 = 0.26 cfs/mi^2 * 1050 mi^2 = 273 cfs
Q_{1-10}/Q_{7-10} = 276 cfs/301 cfs = 0.917
Q_{30-10}/Q_{7-10} = 349 cfs/301 cfs = 1.159

(1) Stuckey, M.H., Roland, M.A., 2011, Selected streamflow statistics for streamgage locations in and near Pennsylvania: U.S. Geological Survey Scientific Investigations Report 2011-1070, 10p, 22p.

PWS Intake:
The nearby PWS intake is PA American Water Royersford in Phoenixville, Chester County, PA, on Schuylkill River at approximate RMI 46.5. The intake is approximately 10.54 miles downstream of the Outfall 001. Due to the distance, dilution of the Schuylkill River, and effluent limitations, the discharge is not expected to impact the PWS intake.

Wastewater Characteristics:
The median pH of 7.38 was calculated from daily eDMR for the months of July-September 2021. Default discharge temperature of 20°C and maximum hardness of 123 mg/l out of 3 samples from application data will be used for modeling, if needed.

Background/Ambient Stream Data:
The nearby WQN station is WQN0111, on SR 4038 Hanover St. Br. The station provided a historical (1999-2019) low flow (July-September) median pH of 7.3, temperature of 22.87°C, and hardness of 149 mg/l, which will be used for modeling, if needed.

Schuylkill River PCB TMDL:
On April 7, 2007, The U.S. EPA Region III established a Total Maximum Daily Load (TMDL) for Polychlorinated Biphenyl (PCB) for the Schuylkill River, which was listed on Pennsylvania's 1996 303(d) list of impaired streams as impaired due to the presence of elevated PCB concentrations found in fish tissue. PCBs are a group of synthetic chemicals that consist of 209 individual compounds (knowns as Congeners). This facility withdraws the water from Schuylkill River and not adding any PCBs prior to discharge. The facility doesn't have any WLA in the TMDL.

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. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.0098
Latitude	40º 14' 28"	Longitude	75º 41' 53"
Quad Name	Pottstown	Quad Code	1740
Wastewater Description:	Water Treatment Effluent		
Receiving Waters	Unnamed Tributary to Schuylkill River (WWF, MF)	Stream Code	01710
NHD Com ID	25990228	RMI	0.19
Drainage Area	0.96 mi^2	Yield (cfs/mi^2)	0.26
Q_{7-10} Flow (cfs)	0.25	Q_{7-10} Basis	
Watershed No.	3-D	Chapter 93 Class.	WWF, MF
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Nearest Downstream Public Water Supply Intake	PA American Royersford in Phoenixville, Chester County		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	46.5	Distance from Outfall (mi)	10.73

Treatment Facility Summary

Treatment Facility Name: Pottstown Borough Water Filtration Plant

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Biological (Industrial Waste)	Holding or Detention Pond	No Disinfection	0.22

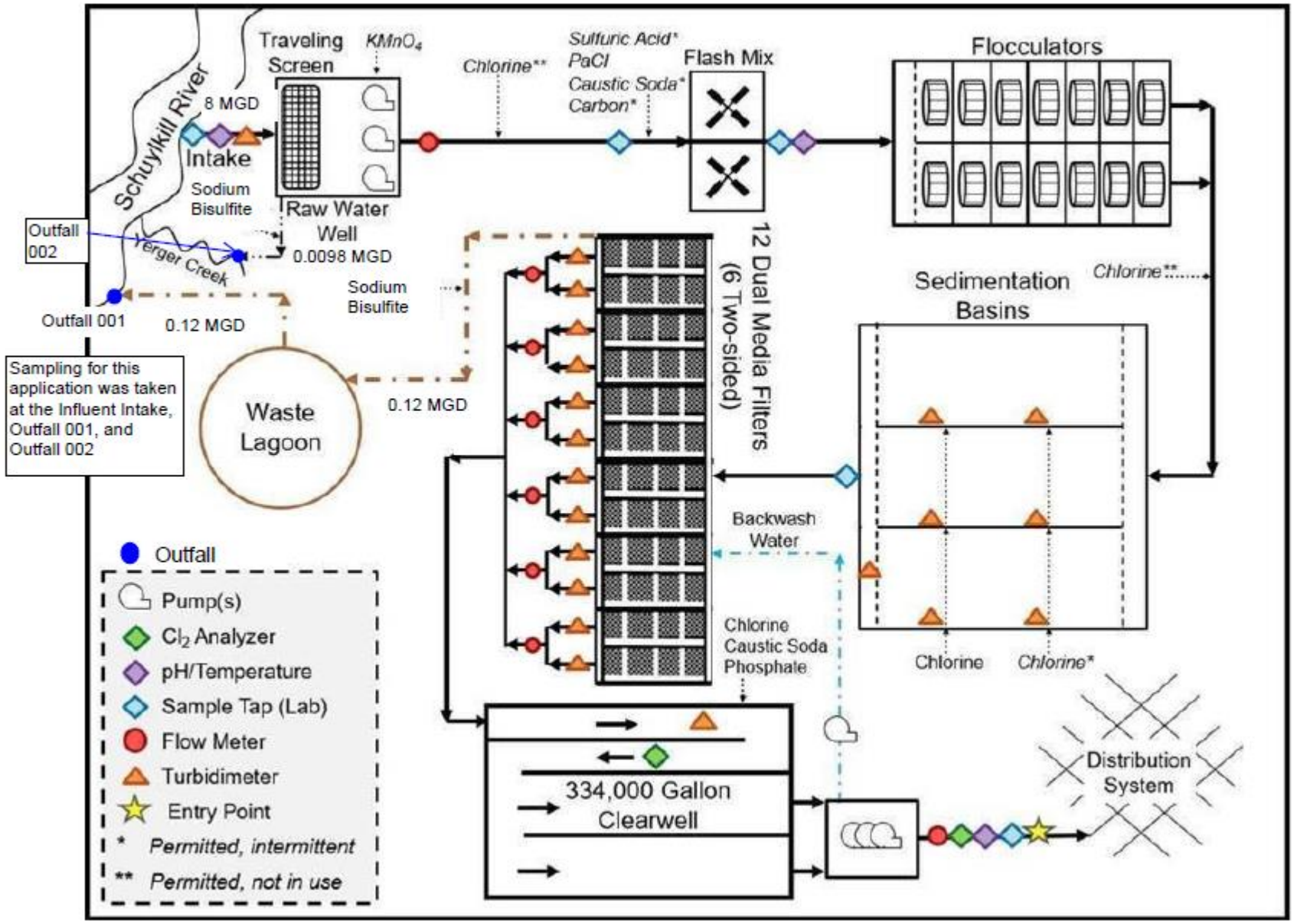
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
		Not Overloaded	Drying	Landfill

Changes Since Last Permit Issuance: None

Other Comments:
Pottstown Borough Authority owns and operates a Water Treatment Plant. The facility is a potable water treatment plant currently permitted for 8 MGD, serving Pottstown Borough, and Lower Pottsgrove, Upper Pottsgrove, West Pottsgrove, Douglass and North Coventry Townships. Raw water is withdrawn from the Schuylkill River and dosed with potassium permanganate at the mechanical screen chamber. Chlorine is added seasonally for algae control. Alum, carbon, caustic soda and other chemicals are added, as needed, in the flash-mixing chamber. The water then goes to flocculation basins and then to sedimentation basins. The supernatant goes to mixed media for filtration. The filtered water then goes to a clear well where it is treated with chlorine, caustic soda, fluoride, and poly phosphates prior to the distribution system.

There are three sedimentation basins that are cleaned twice per year, during spring and fall. Settled materials drawn from sedimentation basins during cleaning, and filter backwash water are sent to two on-site 245,000-gallon lagoons, where solids are removed before discharge into the Schuylkill River through outfall 001.

In addition, the intake screen is continuously washed during use with clear well water and wastewater is discharged through Outfall 002 to an unnamed tributary to Schuylkill River.


Traveling Screen
$KMnO_4$
Chlorine**
Sulfuric Acid*
PaCl
Caustic Soda*
Carbon*
Flash Mix
Flocculators
Schuylkill River
8 MGD
Intake
Sodium Bisulfite
Raw Water Well
0.0098 MGD
Outfall 002
Yerger Creek
Outfall 001
0.12 MGD
Sodium Bisulfite
0.12 MGD
Waste Lagoon
Sampling for this application was taken at the Influent Intake, Outfall 001, and Outfall 002
12 Dual Media Filters (6 Two-sided)
Sedimentation Basins
Chlorine**
Backwash Water
Chlorine Caustic Soda Phosphate
Chlorine
Chlorine*
334,000 Gallon Clearwell
Distribution System
Outfall
Pump(s)
Cl_2 Analyzer
pH/Temperature
Sample Tap (Lab)
Flow Meter
Turbidimeter
Entry Point
* Permitted, intermittent
** Permitted, not in use

Existing Limits

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	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Daily when Discharging	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	1.0	1.2	Daily when Discharging	Grab
Total Suspended Solids	55	110	XXX	30	60	75	2/month	8-Hr Composite
Aluminum, Total	7.4	14.8	XXX	4.0	8.0	10	2/month	8-Hr Composite
Iron, Total	3.7	7.4	XXX	2.0	4.0	5	2/month	8-Hr Composite
Manganese, Total	1.8	3.6	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

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	Instant. Minimum	Average Monthly	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.4	XXX	1.0	1/week	Grab

Compliance History

DMR Data for Outfall 001 (from May 1, 2021 to April 30, 2022)

Parameter	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21
Flow (MGD) Average Monthly	0.146	0.130	0.137	0.113	0.151	0.137	0.128	0.140	0.085	0.101	0.108	0.086
Flow (MGD) Daily Maximum	0.272	0.201	0.245	0.197	0.288	0.292	0.248	0.240	0.281	0.183	0.179	0.155
pH (S.U.) Instantaneous Minimum	6.74	6.54	6.62	6.53	6.74	7.1	6.95	6.91	7.24	6.57	6.74	6.62
pH (S.U.) Instantaneous Maximum	7.48	7.40	6.81	7.39	7.60	7.37	7.83	7.61	7.79	8.34	7.87	7.43
TRC (mg/L) Average Monthly	0.14	0.12	0.15	0.21	0.14	0.16	0.15	0.23	0.22	0.14	0.13	0.09
TRC (mg/L) Instantaneous Maximum	0.25	0.40	0.59	0.76	0.48	0.46	0.63	0.75	0.47	0.44	0.96	0.47
TSS (lbs/day) Average Monthly	3.6	2.8	3.6	1.19	5.2	9.53	2.8	3.2	1.1	0.74	3.32	0.57
TSS (lbs/day) Daily Maximum	5.5	3.2	4.9	1.58	6.5	10.73	4.6	3.4	1.6	0.74	4.20	0.62
TSS (mg/L) Average Monthly	5.0	4.0	5.0	1	7.0	6	3	3.5	2.0	1.0	5.0	1.0
TSS (mg/L) Daily Maximum	8.0	4.0	6.0	1	8.0	11	5	4.0	2.0	1.0	6.0	1.0
Total Aluminum (lbs/day) Average Monthly	0.32	0.12	0.25	0.38	0.42	0.36	0.25	0.22	0.17	0.11	0.38	0.20
Total Aluminum (lbs/day) Daily Maximum	0.38	0.14	0.30	0.52	0.44	0.43	0.31	0.29	0.25	0.12	0.53	0.27
Total Aluminum (mg/L) Average Monthly	0.43	0.15	0.31	0.31	0.53	0.40	0.26	0.23	0.23	0.15	0.57	0.37
Total Aluminum (mg/L) Daily Maximum	0.55	0.15	0.37	0.33	0.55	0.44	0.31	0.26	0.31	0.16	0.76	0.54
Total Iron (lbs/day) Average Monthly	0.02	0.02	0.03	0.036	0.03	0.03	0.02	0.03	0.02	0.015	0.03	0.02
Total Iron (lbs/day) Daily Maximum	0.02	0.02	0.03	0.047	0.03	0.03	0.02	0.04	0.02	0.015	0.04	0.02

Total Iron (mg/L) Average Monthly	0.03	0.02	0.03	0.03	0.04	0.03	0.02	0.03	0.03	0.02	0.05	0.04
Total Iron (mg/L) Daily Maximum	0.03	0.02	0.37	0.03	0.04	0.03	0.02	0.04	0.03	0.02	0.06	0.04
Total Manganese (lbs/day) Average Monthly	0.33	0.13	0.21	0.305	0.17	0.57	0.17	0.20	0.14	0.10	0.22	0.20
Total Manganese (lbs/day) Daily Maximum	0.48	0.15	0.23	0.467	0.19	0.96	0.19	0.22	0.21	0.11	0.28	0.22
Total Manganese (mg/L) Average Monthly	0.46	0.16	0.27	0.238	0.20	0.603	0.172	0.223	0.19	0.131	0.33	0.35
Total Manganese (mg/L) Daily Maximum	0.71	0.18	0.28	0.296	0.229	0.987	0.192	0.247	0.26	0.149	0.40	0.43

DMR Data for Outfall 002 (from May 1, 2021 to April 30, 2022)

Parameter	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21
pH (S.U.) Instantaneous Minimum	6.71	6.73	6.73	6.82	6.87	6.79	6.94	6.87	6.87	6.69	6.73	6.57
pH (S.U.) Instantaneous Maximum	6.87	6.95	6.81	6.91	7.60	6.94	6.98	6.92	6.97	6.94	6.94	6.78
TRC (mg/L) Average Monthly	0.04	0.04	0.03	0.038	0.03	0.02	0.03	0.06	0.03	0.03	0.03	0.03
TRC (mg/L) Instantaneous Maximum	0.06	0.07	0.04	0.06	0.04	0.03	0.04	0.08	0.06	0.03	0.03	0.04

Compliance History

No eDMR violation noted.

03/11/2022: FUI conducted for a TRC IMAX violation on December 17, 2021. The permittee provided a response and corrective action. An NOV was issued on December 23, 2021.

12/17/2021: CEI conducted. TRC IMAX violation noted.

11/16/2020: CEI conducted. No violation noted. Recommended that staged PACL totes should be contained to avoid any possible compliance issues.

12/16/2019: CEI conducted. No violation noted. Recommended that the pipe in the lagoon splitter box should be investigated.

01/17/2019: CEI conducted. No violation noted.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.12
Latitude 40º 14' 28.00" **Longitude** -75º 41' 46.00"
Wastewater Description: Filter backwash water sedimentation basin cleaning water

Technology-Based Limitations

The industrial wastewaters discharged through Outfall 001 is generated from Filter backwash. DEP's technical guidance no. 362-2183-003 addresses technology-based control requirements along with the following recommended Best Practicable Control Technology Currently Available (BPT) effluent requirements for WTP sludge and filter backwash:

Parameter	Limit (mg/l)	SBC
Suspended Solids	30	Average Monthly
	60	Daily Maximum
Iron, Total	2.0	Average Monthly
	4.0	Daily Maximum
Aluminum, Total	4.0	Average Monthly
	8.0	Daily Maximum
Manganese, Total	1.0	Average Monthly
	2.0	Daily Maximum
Flow	Monitor	Average Monthly
pH	6.0	Minimum
	9.0	Maximum
Total Residual Chlorine	0.5	Average Monthly
	1.0	Daily Maximum

Water Quality-Based Limitations

DEP's SOP no. BCW-PMT-037 recommends the average monthly flow during production or operation as a design flow in water quality modeling unless a different flow is determined to be more representative of site-specific conditions. The volume of effluent discharged from facilities such as water treatment plants is heavily depended upon the quality of source water as more backwashing is needed to maintain acceptable filter performance if the intake water quality is poor. Past five-year effluent flow data were analyzed (June 1, 2017 through May 31, 2022). The average of the data was 0.14 MGD with the 90th percentile of 0.2 MGD and maximum of 0.24 MGD. The existing permit indicated the effluent limitations for Outfall 001 was determined using effluent discharge rate of 0.12 MGD. The 90th percentile flow appears to be the most appropriate flow during the last 5 years period and will be used to determine the WQBELs.

Model input values:

Since the facility injects ammonia prior to filtration, the WQM 7.0 was utilized. The following data were used in the attached computer model of the stream:

- Discharge pH 7.38 (median July-Sep, 2021, daily eDMR data)
- Discharge Temperature 20°C (Default data)
- Discharge Hardness 123 mg/l (Application data)
- Stream pH 7.3 (WQN0111, median Jul-Sep, 1999-2019)
- Stream Temperature 22.8°C (WQN0111, median Jul-Sep, 1999-2019)
- Stream Hardness 149 mg/l (WQN0111, median Jul-Sep, 1999-2019)

The following three nodes were used in modeling:

Node 1: Outfall 001 at Schuylkill River (00833)
Elevation: 124.79 ft (USGS TNM viewer, 06/15/2022)
Drainage Area: 1050 mi^2 (StreamStat Version 3.0, 06/15/2022)
River Mile Index: 57.04 mile (PA DEP eMapPA)
Low Flow Yield: 0.26 cfs/mi^2
Discharge Flow: 0.14 MGD

Node 2: At the confluence with Manatawny Creek at Schuylkill RMI 54.61

Elevation:	119.82 ft (USGS TNM 2.0 viewer, 06/15/2022)
Drainage Area:	1150 mi^2 (StreamStat Version 3.0, 06/15/2022)
River Mile Index:	54.61 (PA DEP eMapPA)
Low Flow Yield:	0.26 cfs/mi^2
Discharge Flow:	0.00 MGD

Total Residual Chlorine

25 Pa Code §92a.48(b) regulates TRC. DEP's TRC_CALC worksheet was utilized to determine if existing TBELs are still appropriate at discharge flow of 0.14 MGD. The spreadsheet indicated an average monthly and IMAX limit of 0.5 mg/l and 1.6 mg/l. The BPT IMAX limit is 1.0 mg/l which is more stringent compared to WQBEL. The existing limits are still protective and will be carried over.

Toxics

Based on the available data, PADEP utilizes Toxics Management Spreadsheet (TMS) to (1) evaluate reasonable potential for toxic pollutants to cause or contribute to an excursion above the water quality standards and (2) develop WQBELs for those such toxic pollutants (i.e., 40 CFR § 122.44(d)(1)(i)). It is noteworthy that some of these pollutants that may be reported as "non-detect", but still exceeded the criteria, were determined to be candidates for modeling because the method detection levels used to analyze those pollutants were higher than target QLs and/or the most stringent Chapter 93 criteria. The model then recommended the appropriate action for the Pollutants of Concerns based on the following logic:

1. In general, establish limits in the draft permit where the effluent concentration determined in B.1 or B.2 equals or exceeds 50% of the WQBEL (i.e., RP is demonstrated). Use the average monthly, maximum daily and instantaneous maximum (IMAX) limits for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).

2. For non-conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 25% - 50% of the WQBEL.

3. For conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 10% - 50% of the WQBEL.

NOTE 4 – If the effluent concentration determined in B.1 or B.2 is "non-detect" at or below the target quantitation limit (TQL) for the pollutant as specified in the TMS and permit application, the pollutant may be eliminated as a candidate for WQBELs or monitoring requirements unless 1) a more sensitive analytical method is available for the pollutant under 40 CFR Part 136 where the quantitation limit for the method is less than the applicable water quality criterion and 2) a detection at the more sensitive method may lead to a determination that an effluent limitation is necessary, considering available dilution at design conditions.

NOTE 5 – If the effluent concentration determined in B.1 or B.2 is a detection below the TQL but above or equal to the applicable water quality criterion, WQBELs or monitoring may be established for the pollutant.

4. Application managers may, on a site- and pollutant-specific basis, deviate from these guidelines where there is specific rationale that is documented in the fact sheet.

TMS model was utilized and output file recommended no limits or monitoring requirements for the analyzed parameters. Model output screenshot is provided below:

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

No. Samples/Month: 4

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

Therefore, no new toxic parameters will be introduced during this renewal. The BPT based TBEL for Total Aluminum, Total Iron, and Total Manganese will prevail.

Additional Considerations

Flow Monitoring
Flow monitoring will remain in the permit and is required by 40 CFR § 122.44(i)(1)(ii).

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)) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly, 60 mg/l daily max, and 70 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 current permit has these mass loads as 55 lbs./day and 110 lbs./day which were based on an approved average annual design flow of 0.22 MGD. The current limits will be carried over.

Anti-Degradation requirements
The effluent limits for this discharge have been developed to ensure the existing in-stream uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality stream is impacted by this discharge. No Exceptional-Value stream is impacted by this discharge.

Anti-Backsliding Requirements
Unless stated otherwise in this fact sheet, all proposed effluent limits have developed for this permit renewal are at least as stringent as effluent limits developed for the previous permit renewal. Therefore, anti-backsliding provision is not applicable.

Mass-based limit calculation:
The mass-based limits, where applicable, were calculated by the following formula:

Mass limit (lbs./day) = Concentration (mg/l) * 8.34 * Flow (mgd)

The flow used in the calculations was the 90th percentile flow, or 0.2 MGD. Please note that the mass limits may change in next renewal depending on the appropriate flow number for the renewal.

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	.0098
Latitude	40º 14' 28.00"	**Longitude**	-75º 41' 53.00"
Wastewater Description:	Water Treatment Effluent		

The source of wastewater from this outfall is the continuous washing operation of the influent screen with finished water. Since the finished water has TRC, the generated wastewater is treated with Sodium Bisulfite prior to discharging at Outfall 002. pH limit will be continued per Pa Code 25 §95.2 and DRBC 4.30.5.C. TRC limits will be revised to reflect the BAT requirement as stated in Pa Code 25 § 92(a)48(b)(2).

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" (362-0400-001), 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	Daily when Discharging	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	Daily when Discharging	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.0	Daily when Discharging	Grab
TSS	50	100	XXX	30	60	75	2/month	8-Hr Composite
Total Aluminum	6.67	13.34	XXX	4.0	8.0	10	2/month	8-Hr Composite
Total Iron	3.34	6.67	XXX	2.0	4.0	5	2/month	8-Hr Composite
Total Manganese	1.67	3.34	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

Compliance Sampling Location: At Outfall 001

Other Comments: See Part C.II. Sedimentation Basin Cleaning for additional requirements

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" (362-0400-001), SOPs and/or BPJ.

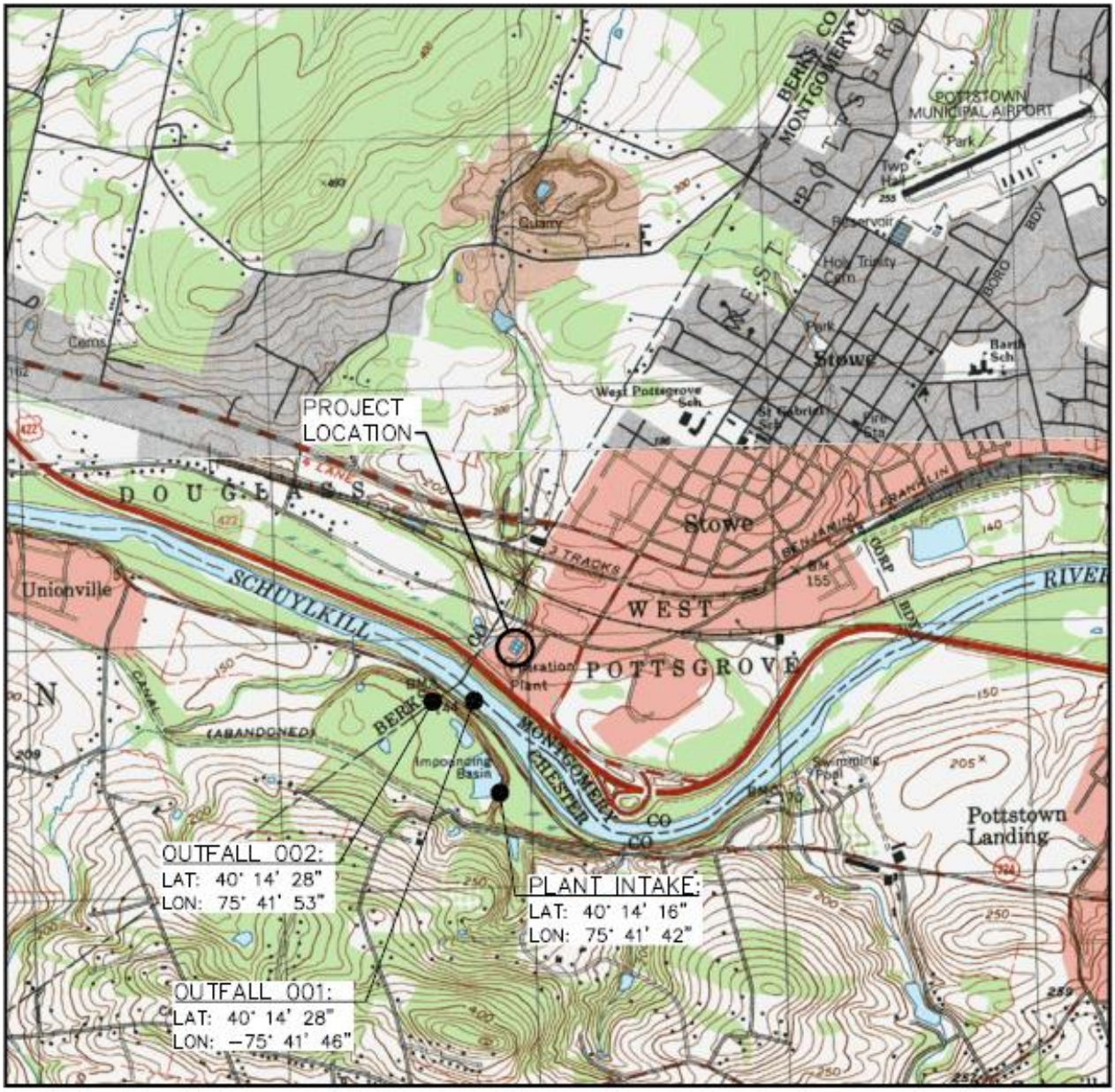
Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

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	Average Monthly	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.0	1/week	Grab

Compliance Sampling Location: At Outfall 002

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, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:



LOCATION MAP

USGS QUADRANGLES:
BOYERTOWN & POTTSTOWN

2,000' 1,000' 0' 2,000'

SCALE IN FEET

HRG
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

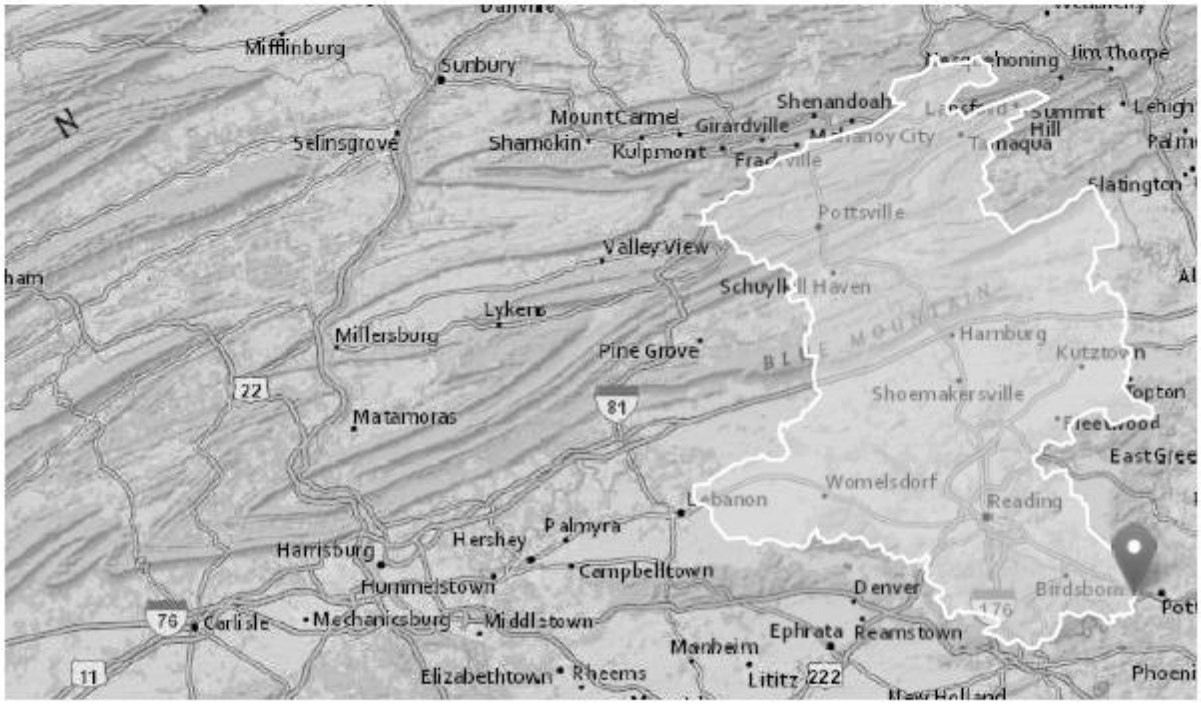
LOCATION MAP
FOR
PBA WTP NPDES RENEWAL PROJECT
WEST POTTSGROVE TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA

PROJ. MGR. – JTF
DESIGN– MNR
CADD– KRB
CHECKED–
SCALE– 1" = 2000'
DATE– FEB. 2022

DRAWING NO. LOC
SHEET NO. 1 OF 1
PROJECT 007010.0462

PA0052647 at Outfall 001

Region ID: PA
Workspace ID: PA20220616122320862000
Clicked Point (Latitude, Longitude): 40.24116, -75.69602
Time: 2022-06-16 08:23:42 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	6.5303	degrees
CARBON	Percentage of area of carbonate rock	18.38	percent
DRNAREA	Area that drains to a point on a stream	1050	square miles
PRECIP	Mean Annual Precipitation	47	inches
ROCKDEP	Depth to rock	4.4	feet

Parameter Code	Parameter Description	Value	Unit
STRDEN	Stream Density -- total length of streams divided by drainage area	1.36	miles per square mile
URBAN	Percentage of basin with urban development	6.5759	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [13.8 Percent (145 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1050	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	6.5303	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.4	feet	4.13	5.21
URBAN	Percent Urban	6.5759	percent	0	89

Low-Flow Statistics Parameters [86.2 Percent (905 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1050	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	47	inches	35	50.4
STRDEN	Stream Density	1.36	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.4	feet	3.32	5.65
CARBON	Percent Carbonate	18.38	percent	0	99

Low-Flow Statistics Disclaimers [13.8 Percent (145 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [13.8 Percent (145 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	271	ft^3/s
30 Day 2 Year Low Flow	328	ft^3/s
7 Day 10 Year Low Flow	168	ft^3/s
30 Day 10 Year Low Flow	200	ft^3/s
90 Day 10 Year Low Flow	254	ft^3/s

Low-Flow Statistics Flow Report [86.2 Percent (905 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	451	ft^3/s	38	38
30 Day 2 Year Low Flow	529	ft^3/s	33	33
7 Day 10 Year Low Flow	292	ft^3/s	51	51
30 Day 10 Year Low Flow	345	ft^3/s	46	46
90 Day 10 Year Low Flow	419	ft^3/s	36	36

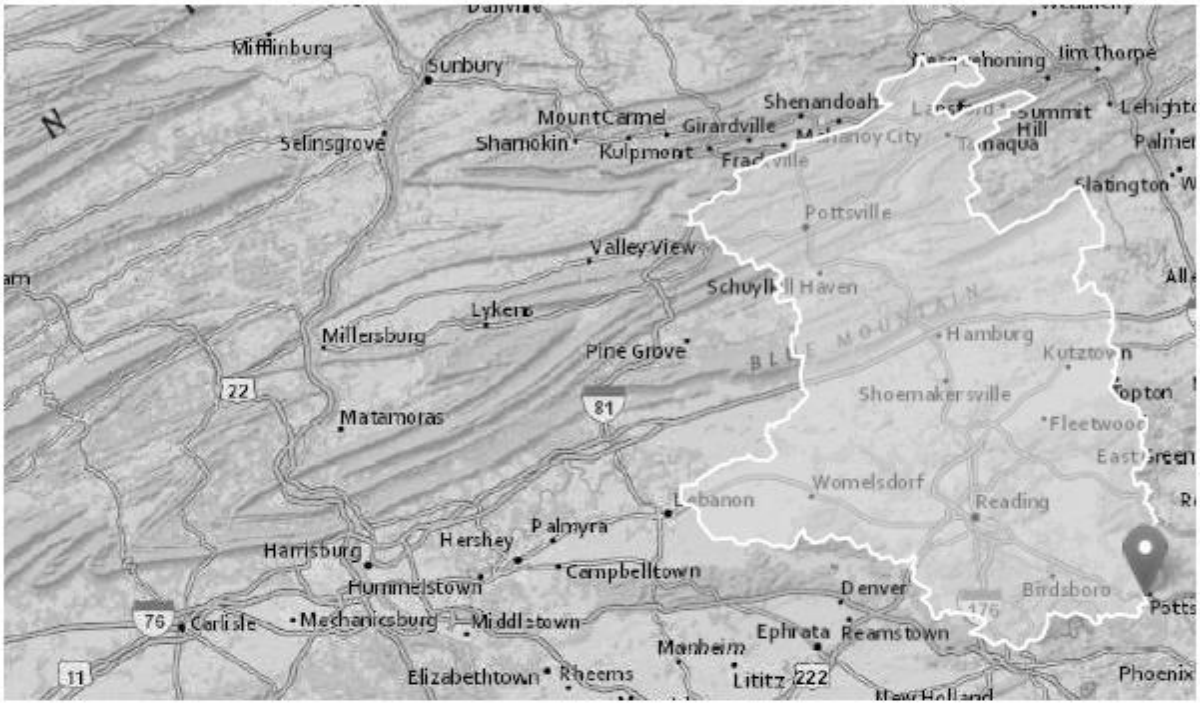
Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	426	ft^3/s
30 Day 2 Year Low Flow	501	ft^3/s
7 Day 10 Year Low Flow	275	ft^3/s
30 Day 10 Year Low Flow	325	ft^3/s
90 Day 10 Year Low Flow	396	ft^3/s

Low-Flow Statistics Citations

PA0052647 at node 2

Region ID: PA
Workspace ID: PA20220616122850455000
Clicked Point (Latitude, Longitude): 40.24193, -75.65868
Time: 2022-06-16 08:29:12 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	6.4976	degrees
CARBON	Percentage of area of carbonate rock	18.83	percent
DRNAREA	Area that drains to a point on a stream	1150	square miles
PRECIP	Mean Annual Precipitation	47	inches
ROCKDEP	Depth to rock	4.4	feet

Parameter Code	Parameter Description	Value	Unit
STRDEN	Stream Density -- total length of streams divided by drainage area	1.38	miles per square mile
URBAN	Percentage of basin with urban development	6.5198	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [21.1 Percent (242 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1150	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	6.4976	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.4	feet	4.13	5.21
URBAN	Percent Urban	6.5198	percent	0	89

Low-Flow Statistics Parameters [78.9 Percent (905 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1150	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	47	inches	35	50.4
STRDEN	Stream Density	1.38	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.4	feet	3.32	5.65
CARBON	Percent Carbonate	18.83	percent	0	99

Low-Flow Statistics Disclaimers [21.1 Percent (242 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [21.1 Percent (242 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	294	ft^3/s
30 Day 2 Year Low Flow	357	ft^3/s
7 Day 10 Year Low Flow	184	ft^3/s
30 Day 10 Year Low Flow	218	ft^3/s
90 Day 10 Year Low Flow	278	ft^3/s

Low-Flow Statistics Flow Report [78.9 Percent (905 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	494	ft^3/s	38	38
30 Day 2 Year Low Flow	579	ft^3/s	33	33
7 Day 10 Year Low Flow	322	ft^3/s	51	51
30 Day 10 Year Low Flow	379	ft^3/s	46	46
90 Day 10 Year Low Flow	459	ft^3/s	36	36

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	452	ft^3/s
30 Day 2 Year Low Flow	532	ft^3/s
7 Day 10 Year Low Flow	293	ft^3/s
30 Day 10 Year Low Flow	345	ft^3/s
90 Day 10 Year Low Flow	421	ft^3/s

Low-Flow Statistics Citations

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

273	= Q stream (cfs)	0.5	= CV Daily
0.2	= 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 = 281.490	1.3.2.iii	WLA cfc = 274.423
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 104.890	5.1d	LTA_cfc = 159.537

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Pottstown Boro PWS** NPDES Permit No.: **PA0052647** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Filter backwash/basin cleaning**

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
0.2	123	7.38						

					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	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		270									
	Chloride (PWS)	mg/L		47.9									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		61									
	Fluoride (PWS)	mg/L	<	0.13									
Group 2	Total Aluminum	µg/L		390									
	Total Antimony	µg/L		0.4									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		36									
	Total Beryllium	µg/L	<	0.1									
	Total Boron	µg/L	<	200									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L		0.27									
	Total Cobalt	µg/L	<	0.3									
	Total Copper	µg/L	<	1									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	4									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		60									
	Total Lead	µg/L	<	0.6									
	Total Manganese	µg/L		2550									
	Total Mercury	µg/L	<	0.09									
	Total Nickel	µg/L		1.7									
	Total Phenols (Phenolics) (PWS)	µg/L		2									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.3									
	Total Thallium	µg/L	<	0.2									
	Total Zinc	µg/L	<	5									
	Total Molybdenum	µg/L	<	3									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	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												

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Pottstown Boro PWS, NPDES Permit No. PA0052647, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Schuylkill River**

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	000833	57.04	124.79	1050			Yes
End of Reach 1	000833	54.61	119.82	1150			Yes

$Q_{7\text{-}10}$

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	57.04	0.26										149	7.3		
End of Reach 1	54.61	0.26										149	7.3		

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	57.04														
End of Reach 1	54.61														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Pottstown Boro PWS, NPDES Permit No. PA0052647, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ *AFC* CCT (min): 15 PMF: 0.059 Analysis Hardness (mg/l): 148.51 Analysis pH: 7.30

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	39,521	
Total Antimony	0	0		0	1,100	1,100	57,963	
Total Arsenic	0	0		0	340	340	17,916	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,106,575	
Total Boron	0	0		0	8,100	8,100	426,822	
Total Cadmium	0	0		0	2.957	3.19	168	Chem Translator of 0.927 applied
Hexavalent Chromium	0	0		0	16	16.3	859	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	5,006	
Total Copper	0	0		0	19.507	20.3	1,071	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	99.058	135	7,117	Chem Translator of 0.733 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	86.8	Chem Translator of 0.85 applied
Total Nickel	0	0		0	654.277	656	34,546	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	6.351	7.47	394	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	3,425	
Total Zinc	0	0		0	163.823	168	8,827	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 720 PMF: 0.406 Analysis Hardness (mg/l): 148.93 Analysis pH: 7.30

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	79,012	
Total Arsenic	0	0		0	150	150	53,872	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,472,502	
Total Boron	0	0		0	1,600	1,600	574,635	
Total Cadmium	0	0		0	0.324	0.36	131	Chem Translator of 0.892 applied
Hexavalent Chromium	0	0		0	10	10.4	3,733	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	6,824	
Total Copper	0	0		0	12.587	13.1	4,709	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	1,325,029	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.872	5.28	1,897	Chem Translator of 0.733 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	325	Chem Translator of 0.85 applied
Total Nickel	0	0		0	72.844	73.1	26,240	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	1,792	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	4,669	
Total Zinc	0	0		0	165.560	168	60,305	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.406 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	2,011	
Total Arsenic	0	0		0	10	10.0	3,591	
Total Barium	0	0		0	2,400	2,400	861,952	
Total Boron	0	0		0	3,100	3,100	1,113,355	
Total Cadmium	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	107,744	
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	359,147	
Total Mercury	0	0		0	0.050	0.05	18.0	
Total Nickel	0	0		0	610	610	219,080	
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	86.2	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 720 PMF: 0.622 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	
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

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

☑ ***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 Aluminum	25,331	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	2,011	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	709,270	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	273,575	µg/L	Discharge Conc < TQL
Total Cadmium	108	µg/L	Discharge Conc < TQL
Hexavalent Chromium	550	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	3,209	µg/L	Discharge Conc < TQL
Total Copper	686	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	107,744	µg/L	Discharge Conc < TQL
Total Iron	1,325,029	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,897	µg/L	Discharge Conc < TQL
Total Manganese	359,147	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	18.0	µg/L	Discharge Conc < TQL
Total Nickel	22,142	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	1,792	µg/L	Discharge Conc < TQL
Total Silver	252	µg/L	Discharge Conc < TQL
Total Thallium	86.2	µg/L	Discharge Conc < TQL
Total Zinc	5,658	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS