

Application Type Renewal
Facility Type Municipal
Major / Minor Major

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0026131 A-1
APS ID 1158590
Authorization ID 1562708

Applicant and Facility Information

Applicant Name	<u>Upper Merion Sanitary and Stormwater Authority</u>	Facility Name	<u>Trout Run STP</u>
Applicant Address	<u>175 W Valley Forge Road King of Prussia, PA 19406-1851</u>	Facility Address	<u>900 Mancill Mill Road King Of Prussia, PA 19406</u>
Applicant Contact	<u>Anthony Hamaday</u>	Facility Contact	<u>Richard Hoy</u>
Applicant Phone		Facility Phone	<u>(610) 783-0848</u>
Client ID	<u>72994</u>	Site ID	<u>457789</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Upper Merion Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Montgomery</u>
Date Application Received	<u>December 20, 2017</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u>May 8, 2018</u>	If No, Reason	<u>Major Facility, Pretreatment</u>
Purpose of Application	<u>Permit Renewal.</u>		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application for Trout Run WPCC (facility) from Upper Merion Municipal Utility Authority (new name is Upper Merion Sanitary and Stormwater Authority, UMSSA) on December 20, 2017. The final permit was issued on November 4, 2021, with an effective date of December 1, 2021. The 2021 permit was revoked and reissued on June 28, 2024, with an effective date of July 1, 2024. The current fact sheet is being prepared to accompany the upcoming draft permit modification, in an attempt to resolve the appeal on July 2024 final permit, based on new sampling data provided by the permittee since the appeal was filed. This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in the permit: Total Copper limits revised, Total Zinc monitoring added.

Sludge use and disposal description and location(s): Sludge is handled through gravity thickener units prior to being dewatered by a rotary press. The dewatered cake is stabilized with lime prior to being hauled to one of two Waste Management owned landfills. The landfills are Fairless Landfill and GROWS North landfill in Morrisville, PA.

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 	March 17, 2026
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	March 17, 2026

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002	Design Flow (MGD)	6.0
Latitude	40° 6' 38"	Longitude	-75° 24' 30"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description: Sewage Effluent			
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	00833
NHD Com ID	26003394	RMI	27.7
Drainage Area	1720 mi ²	Yield (cfs/mi ²)	0.151
Q ₇₋₁₀ Flow (cfs)	259	Q ₇₋₁₀ Basis	Please see below
Elevation (ft)	58.04	Slope (ft/ft)	
Watershed No.	3-F	Chapter 93 Class.	WWF, MF
Existing Use	WWF/MF	Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	
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)	7.0	Default per 391-2000-013	
Temperature (°C)	25	Default per 391-2000-013 for WWF	
Hardness (mg/L)	206	Application data	
Other:			
Nearest Downstream Public Water Supply Intake	PA American Water Co Norristown Dist		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	25.07	Distance from Outfall (mi)	2.63

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

Streamflow will be correlated with the USGS's web-based GIS application (<https://streamstats.usgs.gov/ss/>) accessed on October 28, 2020. Q₇₋₁₀ and Q₃₀₋₁₀ values at Outfall 002 were found to be 259 cfs and 311 cfs respectively. The drainage area at Outfall 002 was found to be 1720 mi² from StreamStats.

$$Q_{7-10} \text{ runoff rate} = 259 \text{ cfs} / 1720 \text{ mi}^2 = 0.151 \text{ cfs/mi}^2$$

$$Q_{30-10} / Q_{7-10} = 311 \text{ cfs} / 259 \text{ cfs} = 1.2$$

Default Q₁₋₁₀: Q₇₋₁₀ of 0.64 from 391-2000-007 will be used in modeling, if needed.

PWS Intake:

The nearest downstream public water supply intake is PA American Co. Norristown District, on Schuylkill River at RMI 25.07. Its approximately 2.63 miles downstream of Outfall 002.

Wastewater Characteristics:

The 90th percentile pH of 7.5 from daily DMR for months October 1, 2024 through September 30, 2025 and a default temperature of 25°C (per 391-2000-007) will be used for modeling, if needed. The application data indicated an average Total Hardness of 191 mg/l out of 3 samples.

Background data:

There are currently no nearby WQN stations from Outfall 002. In absence of site-specific temperature data, a default temperature of 25°C and default pH of 7.0 (per 391-2000-013, WWF) will be used in modeling, if needed. The application data indicated stream hardness of 206 mg/l.

303d Listed Streams:

Schuylkill River is impaired for Fish Consumption and Aquatic Life due to PCB but supporting Potable Water Use. A TMDL has been finalized by EPA on 04/07/2007 for PCB.

Schuylkill River PCB TMDL:

A review of eDMR data for years 2022, 2023, and 2024 indicated the following effluent concentrations:

PCB	Dry Weather (pg/l)
2024	1590
2023	3570
2022	4230
Avg	3130

The PCB results indicate that there are PCB concentrations that are above natural background and statewide surface water criteria levels (44 pg/l). Current annual sampling for Dry weather will be continued along with implementation of PMP with annual reporting will be carried over.

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) and Migratory Fishes (MF.) No High-Quality stream or Exceptional Value water is impacted by this discharge, therefore, no Antidegradation Analysis is performed for the discharge.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	003	Design Flow (MGD)	0
Latitude	40° 6' 35"	Longitude	-75° 24' 24"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description:	Stormwater		

Other Comments: Per Phase II stormwater regulations, major POTWs are required to have a permit for the discharge of stormwater. Therefore, stormwater monitoring requirements are included in Part A and Part C of the permit for this outfall.

Treatment Facility Summary	
Treatment Facility Name: Trout Run STP	
WQM Permit No.	Issuance Date
4612404	8/27/2012
4611401	3/21/2011
4610403	9/23/2010

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Trickling Filter With Settling	Gas Chlorine	6
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
6	12510	Not Overloaded	Gravity Thickening	Landfill

Changes Since Last Permit Issuance: None

Treatment Plant Description

Trout WPCF is a 6.0 MGD Major Sewer Facility (MASF2) located in Upper Merion Township, Montgomery County which discharges treated sewage through outfall 002 to Schuylkill River in watershed 3-F. This is a trickling filter, alternative to secondary treatment facility, and chlorine disinfection system. The treatment train consists of influent screening and grit removal, primary clarifier, secondary biological treatment through oxidation towers, reaeration, secondary clarifier, and disinfection by sodium hypochlorite. The effluent is dechlorinated using sodium bisulfite.

The facility receives flows mostly from Upper Merion Township and small contributions from few other townships as listed in the next page.

Municipalities served	Flow contribution (%)	Type of Sewer System	
		Separate (%)	Combined (%)
Upper Merion Township	60.0	100	0
Tredyffrin Township	39.8	100	0
Eastown Township	0.2	100	0

Per the renewal application, there is no significant or categorical industrial facility that discharges into the collection system.

Per PADEP's most recent inspection on September 3, 2020, the treatment train consists of the following treatment units:

- Four primary clarifiers
- Four trickling filters
- Four secondary clarifiers
- Two chlorine contact tanks
- Two grit removal

Sodium Hypochlorite is used at a maximum rate of 90 GPD and Sodium Bisulfite is used at maximum rate of 9.6 GPD.

Biosolids Management:

Sludge is handled through gravity thickener units prior to being dewatered by a rotary press. The dewatered cake is stabilized with lime prior to being hauled to one of two Waste Management owned landfills. The landfills are Fairless Landfill and GROWS North landfill in Morrisville, PA.

Pre-treatment Program implementation:

Facilities greater than 5.0 MGD or less than 5.0 MGD with categorical and significant industrial users are required to develop or implement an EPA administered pre-treatment program. The facility is implementing an approved pretreatment program for which most recent local limits were approved by EPA in March 2017. The Part C of the permit will require continuation of the pre-treatment program implementation.

Compliance History

Monthly DMR Data for Outfall 002 from October 1, 2024 to September 30, 2025

MONITORING START DATE	MONITORING END DATE	REPORT FREQUENCY	OUTFALL	PARAMETER	LOAD UNITS	LOAD 1 VALUE	LOAD 1 LIMIT	LOAD 1 SBC	LOAD 2 VALUE	LOAD 2 LIMIT	LOAD 2 SBC	CONC UNITS	CONC 1 VALUE	CONC 1 LIMIT	CONC 1 SBC	CONC 2 VALUE	CONC 2 LIMIT	CONC 2 SBC	CONC 3 VALUE	CONC 3 LIMIT	CONC 3 SBC	SAMPLE FREQUENCY
10/01/2024	10/31/2024	Monthly	002	NH3-N	lbs/day	6	750	AML				mg/L				0.36	15.0	AML				1/day
11/01/2024	11/30/2024	Monthly	002	NH3-N	lbs/day	10	1000	AML				mg/L				0.53	20.0	AML				1/day
12/01/2024	12/31/2024	Monthly	002	NH3-N	lbs/day	41	1000	AML				mg/L				2.18	20.0	AML				1/day
01/01/2025	01/31/2025	Monthly	002	NH3-N	lbs/day	< 81	1000	AML				mg/L				< 4.13	20.0	AML				1/day
02/01/2025	02/28/2025	Monthly	002	NH3-N	lbs/day	246	1000	AML				mg/L				8.89	20.0	AML				1/day
03/01/2025	03/31/2025	Monthly	002	NH3-N	lbs/day	27	1000	AML				mg/L				1.51	20.0	AML				1/day
04/01/2025	04/30/2025	Monthly	002	NH3-N	lbs/day	19	1000	AML				mg/L				0.84	20.0	AML				1/day
04/01/2025	04/30/2025	Monthly	002	NH3-N	lbs/day	19	1000	AML				mg/L				0.84	20.0	AML				1/day
05/01/2025	05/31/2025	Monthly	002	NH3-N	lbs/day	< 11	750	AML				mg/L				< 0.51	15.0	AML				1/day
06/01/2025	06/30/2025	Monthly	002	NH3-N	lbs/day	10	750	AML				mg/L				0.46	15.0	AML				1/day
07/01/2025	07/31/2025	Monthly	002	NH3-N	lbs/day	9	750	AML				mg/L				0.39	15.0	AML				1/day
08/01/2025	08/31/2025	Monthly	002	NH3-N	lbs/day	0.51	750	AML				mg/L				10.0	15.0	AML				1/day
09/01/2025	09/30/2025	Monthly	002	NH3-N	lbs/day	6	750	AML				mg/L				0.31	15.0	AML				1/day
10/01/2024	10/31/2024	Monthly	002	BOD5	lbs/day	4158	M&R	AML				mg/L				240	M&R	AML				1/week
11/01/2024	11/30/2024	Monthly	002	BOD5	lbs/day	4354	M&R	AML				mg/L				255	M&R	AML				1/week
12/01/2024	12/31/2024	Monthly	002	BOD5	lbs/day	4750	M&R	AML				mg/L				224	M&R	AML				1/week
01/01/2025	01/31/2025	Monthly	002	BOD5	lbs/day	5610	M&R	AML				mg/L				299	M&R	AML				1/week
02/01/2025	02/28/2025	Monthly	002	BOD5	lbs/day	7648	M&R	AML				mg/L				274	M&R	AML				1/week
03/01/2025	03/31/2025	Monthly	002	BOD5	lbs/day	6199	M&R	AML				mg/L				324	M&R	AML				1/week
04/01/2025	04/30/2025	Monthly	002	BOD5	lbs/day	4610	M&R	AML				mg/L				225	M&R	AML				1/week
04/01/2025	04/30/2025	Monthly	002	BOD5	lbs/day	4610	M&R	AML				mg/L				225	M&R	AML				1/week
05/01/2025	05/31/2025	Monthly	002	BOD5	lbs/day	5464	M&R	AML				mg/L				283	M&R	AML				1/week
06/01/2025	06/30/2025	Monthly	002	BOD5	lbs/day	6116	M&R	AML				mg/L				287	M&R	AML				1/week
07/01/2025	07/31/2025	Monthly	002	BOD5	lbs/day	5215	M&R	AML				mg/L				243	M&R	AML				1/week
08/01/2025	08/31/2025	Monthly	002	BOD5	lbs/day	5261	M&R	AML				mg/L				279	M&R	AML				1/week
09/01/2025	09/30/2025	Monthly	002	BOD5	lbs/day	8023	M&R	AML				mg/L				445	M&R	AML				1/week
10/01/2024	10/31/2024	Monthly	002	CBOD5	lbs/day	< 98	1251	AML	109	2000	Wkly Avg	mg/L				< 5.6	25.0	AML	6.4	40.0	Wkly Avg	1/day
11/01/2024	11/30/2024	Monthly	002	CBOD5	lbs/day	136	1251	AML	166	2000	Wkly Avg	mg/L				7.6	25.0	AML	8.9	40.0	Wkly Avg	1/day
12/01/2024	12/31/2024	Monthly	002	CBOD5	lbs/day	217	1251	AML	247	2000	Wkly Avg	mg/L				11.3	25.0	AML	11.9	40.0	Wkly Avg	1/day
01/01/2025	01/31/2025	Monthly	002	CBOD5	lbs/day	< 271	1251	AML	445	2000	Wkly Avg	mg/L				< 14.4	25.0	AML	18.0	40.0	Wkly Avg	1/day
02/01/2025	02/28/2025	Monthly	002	CBOD5	lbs/day	457	1251	AML	550	2000	Wkly Avg	mg/L				16.5	25.0	AML	18	40.0	Wkly Avg	1/day
03/01/2025	03/31/2025	Monthly	002	CBOD5	lbs/day	221	1251	AML	248	2000	Wkly Avg	mg/L				12.1	25.0	AML	13.9	40.0	Wkly Avg	1/day
04/01/2025	04/30/2025	Monthly	002	CBOD5	lbs/day	258	1251	AML	347	2000	Wkly Avg	mg/L				11.7	25.0	AML	15.6	40.0	Wkly Avg	1/day
04/01/2025	04/30/2025	Monthly	002	CBOD5	lbs/day	258	1251	AML	347	2000	Wkly Avg	mg/L				11.7	25.0	AML	15.6	40.0	Wkly Avg	1/day
05/01/2025	05/31/2025	Monthly	002	CBOD5	lbs/day	233	1251	AML	256	2000	Wkly Avg	mg/L				10.8	25.0	AML	11	40.0	Wkly Avg	1/day
06/01/2025	06/30/2025	Monthly	002	CBOD5	lbs/day	233	1251	AML	264	2000	Wkly Avg	mg/L				10.6	25.0	AML	11.6	40.0	Wkly Avg	1/day
07/01/2025	07/31/2025	Monthly	002	CBOD5	lbs/day	< 160	1251	AML	211	2000	Wkly Avg	mg/L				< 7.2	25.0	AML	8.9	40.0	Wkly Avg	1/day
08/01/2025	08/31/2025	Monthly	002	CBOD5	lbs/day	99	1251	AML	111	2000	Wkly Avg	mg/L				5.2	25.0	AML	5.9	40.0	Wkly Avg	1/day
09/01/2025	09/30/2025	Monthly	002	CBOD5	lbs/day	95	1251	AML	102	2000	Wkly Avg	mg/L				5.1	25.0	AML	5.5	40.0	Wkly Avg	1/day
10/01/2024	10/31/2024	Monthly	002	Copper, Total	lbs/day	0.4	M&R	AML	0.4	AML	MDL	mg/L				0.022	M&R	AML	0.24	M&R	MDL	1/week
11/01/2024	11/30/2024	Monthly	002	Copper, Total	lbs/day	0.4	M&R	AML	0.5	AML	MDL	mg/L				0.025	M&R	AML	0.028	M&R	MDL	1/week
12/01/2024	12/31/2024	Monthly	002	Copper, Total	lbs/day	0.6	M&R	AML	0.8	AML	MDL	mg/L				0.028	M&R	AML	0.033	M&R	MDL	1/week
01/01/2025	01/31/2025	Monthly	002	Copper, Total	lbs/day	0.6	M&R	AML	0.8	AML	MDL	mg/L				0.033	M&R	AML	0.037	M&R	MDL	1/week
02/01/2025	02/28/2025	Monthly	002	Copper, Total	lbs/day	1	M&R	AML	1	AML	MDL	mg/L				0.034	M&R	AML	0.036	M&R	MDL	1/week
03/01/2025	03/31/2025	Monthly	002	Copper, Total	lbs/day	0.7	M&R	AML	1	AML	MDL	mg/L				0.037	M&R	AML	0.041	M&R	MDL	1/week
04/01/2025	04/30/2025	Monthly	002	Copper, Total	lbs/day	0.6	M&R	AML	0.9	AML	MDL	mg/L				0.03	M&R	AML	0.034	M&R	MDL	1/week
04/01/2025	04/30/2025	Monthly	002	Copper, Total	lbs/day	0.6	M&R	AML	0.9	AML	MDL	mg/L				0.03	M&R	AML	0.034	M&R	MDL	1/week
05/01/2025	05/31/2025	Monthly	002	Copper, Total	lbs/day	0.6	M&R	AML	0.8	AML	MDL	mg/L				0.03	M&R	AML	0.036	M&R	MDL	1/week
06/01/2025	06/30/2025	Monthly	002	Copper, Total	lbs/day	0.7	M&R	AML	0.9	AML	MDL	mg/L				0.035	M&R	AML	0.04	M&R	MDL	1/week
07/01/2025	07/31/2025	Monthly	002	Copper, Total	lbs/day	0.6	M&R	AML	0.7	AML	MDL	mg/L				0.028	M&R	AML	0.032	M&R	MDL	1/week
08/01/2025	08/31/2025	Monthly	002	Copper, Total	lbs/day	0.5	M&R	AML	0.5	AML	MDL	mg/L				0.025	M&R	AML	0.028	M&R	MDL	1/week
09/01/2025	09/30/2025	Monthly	002	Copper, Total	lbs/day	0.4	M&R	AML	0.5	AML	MDL	mg/L				0.023	M&R	AML	0.024	M&R	MDL	1/week
10/01/2024	10/31/2024	Monthly	002	DO								mg/L	8.0	5.0	IMIN							1/day
11/01/2024	11/30/2024	Monthly	002	DO								mg/L	8.6	5.0	IMIN							1/day
12/01/2024	12/31/2024	Monthly	002	DO								mg/L	9.0	5.0	IMIN							1/day
01/01/2025	01/31/2025	Monthly	002	DO								mg/L	9.2	5.0	IMIN							1/day
02/01/2025	02/28/2025	Monthly	002	DO								mg/L	9.8	5.0	IMIN							1/day

NPDES Permit Fact Sheet
Upper Merion Municipal Authority Sewer System & STP Trout Run

NPDES Permit No. PA0026131 A-1

06/01/2025	06/30/2025	Monthly	002	TSS	lbs/day	5153	M&R	AML							236	M&R	AML					1/day
07/01/2025	07/31/2025	Monthly	002	TSS	lbs/day	356	1500	AML	508	2250	Wkly Avg	mg/L			16.0	30.0	AML	22.0	45.0	Wkly Avg		1/day
07/01/2025	07/31/2025	Monthly	002	TSS	lbs/day	4793	M&R	AML				mg/L			215	M&R	AML					1/day
08/01/2025	08/31/2025	Monthly	002	TSS	lbs/day	164	1500	AML	158	2250	Wkly Avg	mg/L			9.0	30.0	AML	9.0	45.0	Wkly Avg		1/day
08/01/2025	08/31/2025	Monthly	002	TSS	lbs/day	4363	M&R	AML				mg/L			231	M&R	AML					1/day
09/01/2025	09/30/2025	Monthly	002	TSS	lbs/day	5038	M&R	AML				mg/L			269	M&R	AML					1/day
09/01/2025	09/30/2025	Monthly	002	TSS	lbs/day	< 156	1500	AML	198	2250	Wkly Avg	mg/L			< 8.0	30.0	AML	11.0	45.0	Wkly Avg		1/day

Quarterly DMR Data for Outfall 002 from October 1, 2024 to September 30, 2025

MONITORING START DATE	MONITORING END DATE	REPORT FREQUENCY	OUTFALL	PARAMETER	LOAD UNITS	LOAD 1 VALUE	LOAD 1 LIMIT	LOAD 1 SBC	CONC UNITS	CONC 2 VALUE	CONC 2 LIMIT	CONC 2 SBC	CONC 3 VALUE	CONC 3 LIMIT	CONC 3 SBC	SAMPLE FREQUENCY
10/01/2024	12/31/2024	Quarterly	002	Total Dissolved Solids	lbs/day	9899.9	M&R	Average Quarterly	mg/L	569.0	1000.0	Average Quarterly				1/quarter
01/01/2025	03/31/2025	Quarterly	002	Total Dissolved Solids	lbs/day	10724.27	M&R	Average Quarterly	mg/L	581.0	1000.0	Average Quarterly				1/quarter
04/01/2025	06/30/2025	Quarterly	002	Total Dissolved Solids	lbs/day	11918.76	M&R	Average Quarterly	mg/L	569	1000.0	Average Quarterly				1/quarter
07/01/2025	09/30/2025	Quarterly	002	Total Dissolved Solids	lbs/day	12230.94	M&R	Average Quarterly	mg/L	552.00	1000.0	Average Quarterly				1/quarter
10/01/2024	12/31/2024	Quarterly	002	Toxicity, Chronic - Ceriodaphnia					TUc				6.67	M&R	MDL	1/year
01/01/2025	03/31/2025	Quarterly	002	Toxicity, Chronic - Ceriodaphnia					TUc				GG	M&R	MDL	
04/01/2025	06/30/2025	Quarterly	002	Toxicity, Chronic - Ceriodaphnia					TUc				GG	M&R	MDL	
07/01/2025	09/30/2025	Quarterly	002	Toxicity, Chronic - Ceriodaphnia					TUc				GG	M&R	MDL	
10/01/2024	12/31/2024	Quarterly	002	Toxicity, Chronic - Ceriodaphnia Survival					TUc				6.67	M&R	MDL	1/year
01/01/2025	03/31/2025	Quarterly	002	Toxicity, Chronic - Ceriodaphnia Survival					TUc				GG	M&R	MDL	
04/01/2025	06/30/2025	Quarterly	002	Toxicity, Chronic - Ceriodaphnia Survival					TUc				GG	M&R	MDL	
07/01/2025	09/30/2025	Quarterly	002	Toxicity, Chronic - Ceriodaphnia Survival					TUc				GG	M&R	MDL	
10/01/2024	12/31/2024	Quarterly	002	Toxicity, Chronic - Pimephales Growth					TUc				6.67	M&R	MDL	1/year
01/01/2025	03/31/2025	Quarterly	002	Toxicity, Chronic - Pimephales Growth					TUc				GG	M&R	MDL	
04/01/2025	06/30/2025	Quarterly	002	Toxicity, Chronic - Pimephales Growth					TUc				GG	M&R	MDL	
07/01/2025	09/30/2025	Quarterly	002	Toxicity, Chronic - Pimephales Growth					TUc				GG	M&R	MDL	
10/01/2024	12/31/2024	Quarterly	002	Toxicity, Chronic - Pimephales Survival					TUc				6.67	M&R	MDL	1/year
01/01/2025	03/31/2025	Quarterly	002	Toxicity, Chronic - Pimephales Survival					TUc				GG	M&R	MDL	
04/01/2025	06/30/2025	Quarterly	002	Toxicity, Chronic - Pimephales Survival					TUc				GG	M&R	MDL	
07/01/2025	09/30/2025	Quarterly	002	Toxicity, Chronic - Pimephales Survival					TUc				GG	M&R	MDL	

Annual DMR Data from January 1, 2024 to December 31, 2024

MONITORING START DATE	MONITORING END DATE	REPORT FREQUENCY	OUTFALL	PARAMETER	CONC UNITS	CONC 2 VALUE	CONC 2 LIMIT	CONC 2 SBC	CONC 3 VALUE	CONC 3 LIMIT	CONC 3 SBC	SAMPLE FREQUENCY
01/01/2024	12/31/2024	Annually	003	CBOD5	mg/L	4.0	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	003	COD	mg/L	< 25	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	003	Fecal Coliform	No./100 ml	1180	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	003	Iron, Dissolved	mg/L	< 0.02	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	003	Oil and Grease	mg/L	< 5	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	002	PCBs Dry Weather	pg/L				1590	M&R	MDL	1/year
01/01/2024	12/31/2024	Annually	003	pH	S.U.	7.32	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	003	TKN	mg/L	1.10	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	003	TP	mg/L	0.08	M&R	Annual Average				1/year
01/01/2024	12/31/2024	Annually	003	TSS	mg/L	9	M&R	Annual Average				1/year

Summary of Inspections:

April 9, 2025: CEI conducted. No violation noted.

June 4, 2024: CEI conducted, no violations noted. One SSO was reported at King of Prussia Mall on January 3, 2024.

February 3, 2023: RTPT conducted. No violation noted. Inspection was a quick visit to see the update on the installation of the sodium hypochlorite and the sodium bisulfite tanks. They were not installed during the time of inspection and the permittee were hoping the work will be done in the next month or so. All treatment units were online and facility looked good. Final effluent was clear.

10/17/2022: CEI conducted. No violation noted. The facility was operating well. The final effluent looked clear.

4/5/2022: RTPT conducted. No violation noted. Final effluent looked good.

10/5/2021: CEI conducted. No violation noted. SSO overflows reported due to Hurricane Ida.

Existing Effluent Limitations and Monitoring Requirements

The table below summarizes effluent limitations and monitoring requirements specified in the existing final NPDES permit that was in effect between July 1, 2024, to June 30, 2029

For Outfall 002:

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	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	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	0.5	XXX	1.2	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	1251	2000	XXX	25.0	40.0 Wkly Avg	50	1/day	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	1500	2250	XXX	30.0	45.0 Wkly Avg	60	1/day	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Dissolved Solids	Report Avg Qrtly	XXX	XXX	1000.0 Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200	XXX	1000*	1/day	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	1000	XXX	XXX	20.0	XXX	40	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	750	XXX	XXX	15.0	XXX	30	1/day	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Copper, Total (interim)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Copper, Total (final)	1.33	1.56 Daily Max	XXX	0.0266	0.0312 Daily Max	0.0312	1/week	24-Hr Composite
PCBs Dry Weather Analysis (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Pimephales Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Pimephales Growth (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite

For Outfall 003:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Iron, Dissolved	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

DRAFT

Development of Effluent Limitations

Outfall No. <u>002</u>	Design Flow (MGD) <u>6</u>
Latitude <u>40° 6' 38.00"</u>	Longitude <u>-75° 24' 30.00"</u>
Wastewater Description: <u>Sewage Effluent</u>	

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)
Fecal Coliform	200 / 100 ml	Geo Mean	DRBC	92a.47(a)(5)
Fecal Coliform	1,000 / 100 ml	IMAX	DRBC	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments: These standards apply, subject to Water Quality Analysis and BPJ where applicable.

Water Quality-Based Limitations

WQM 7.0:

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate effluent limits for CBOD₅, NH₃-N and DO. The model simulates two basic processes. In the NH₃-N module, the model simulates the mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to NH₃-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 CBOD₅ and NH₃-N and compares calculated instream D.O. concentrations to D.O. water quality criteria. Since WQM 7.0 assumes immediate and complete mix between the discharge and stream flow, Q₇₋₁₀, to examine allowable wasteload allocations under appropriate mixing conditions. The model was utilized for this permit renewal by using current Q₇₋₁₀ and historic background water quality levels of the river. The following data were used in the attached computer model of the stream:

- Discharge pH 7.5 (90th percentile, Oct 24-Sep 25, DMR data)
- Discharge Temperature 25°C (Default per 391-2000-013)
- Discharge Hardness 191 mg/l (Application data)
- Stream pH 7.0 (Default per 391-2000-013)
- Stream Temperature 25°C (Default per 391-2000-013, WWF)
- Stream Hardness 206 mg/l (Application data)

The following nodes were considered in modeling:

Node 1: Trout Run WPCC (PA0026131) Outfall 002 at Schuylkill River (00833)
 Elevation: 28.04 ft (USGS National Map viewer, 10/8/2020)
 Drainage Area: 1720 mi² (StreamStat Version 3.0, 10/28/2020)
 River Mile Index: 27.7 (PA DEP eMapPA)
 Low Flow Yield: 0.151 cfs/mi²
 Discharge Flow: 6.0 MGD

Node 2: At confluence with Crow Creek (00973) with Schuylkill River (00833)
Elevation: 57.91 ft (USGS National Map viewer, 10/28/2020)
Drainage Area: 1740 mi² (StreamStat Version 3.0, 10/28/2020)
River Mile Index: 26.72 (PA DEP eMapPA)
Low Flow Yield: 0.151 cfs/mi²
Discharge Flow: 0.0 MGD

Ammonia (NH₃-N), Carbonaceous Biochemical Oxygen Demand (CBOD₅), & Dissolved Oxygen (DO):

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate effluent limits for CBOD₅, NH₃-N and DO. The model simulates two basic processes. In the NH₃-N module, the model simulates the mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to NH₃-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 CBOD₅ and NH₃-N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model was utilized for this permit renewal by using Q₇₋₁₀ and current background water quality levels of the stream.

NH₃-N:

WQM 7.0 suggested NH₃-N limit of 15.0 mg/l as monthly average and 30.0 mg/l as IMAX limit during summer to protect water quality standards. These values are the same as existing permitted limits. Recent DMR data show that the plant is meeting the permit limits. The average monthly mass loading is calculated to be 750.6 lbs./day. The existing winter season limits of 20.0 mg/l as average monthly and 40.0 mg/l as IMAX limit will be carried over in this renewal. Winter average monthly mass limit was calculated as 1000 lbs./day. Summer average monthly mass loading is rounded down to 750 lbs./day.

CBOD₅:

The WQM 7.0 model suggests a monthly average CBOD₅ limit of 25 mg/l. The average monthly and average weekly mass loadings were calculated as 1251 lbs/day and 2001.6 lbs/day respectively. These values are rounded down to 1250 lbs/day and 2000 lbs/day, respectively (362-0400-001).

Dissolved Oxygen (DO):

The existing permit has a minimum DO of 5.0 mg/l. This limit, which is supported by Pa Code 25 Ch.93.7, 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.

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	1.54	2.4	0.031	0.048	0.077	mg/L	0.031	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	246	AFC	Discharge Conc > 10% WQBEL (no RP)

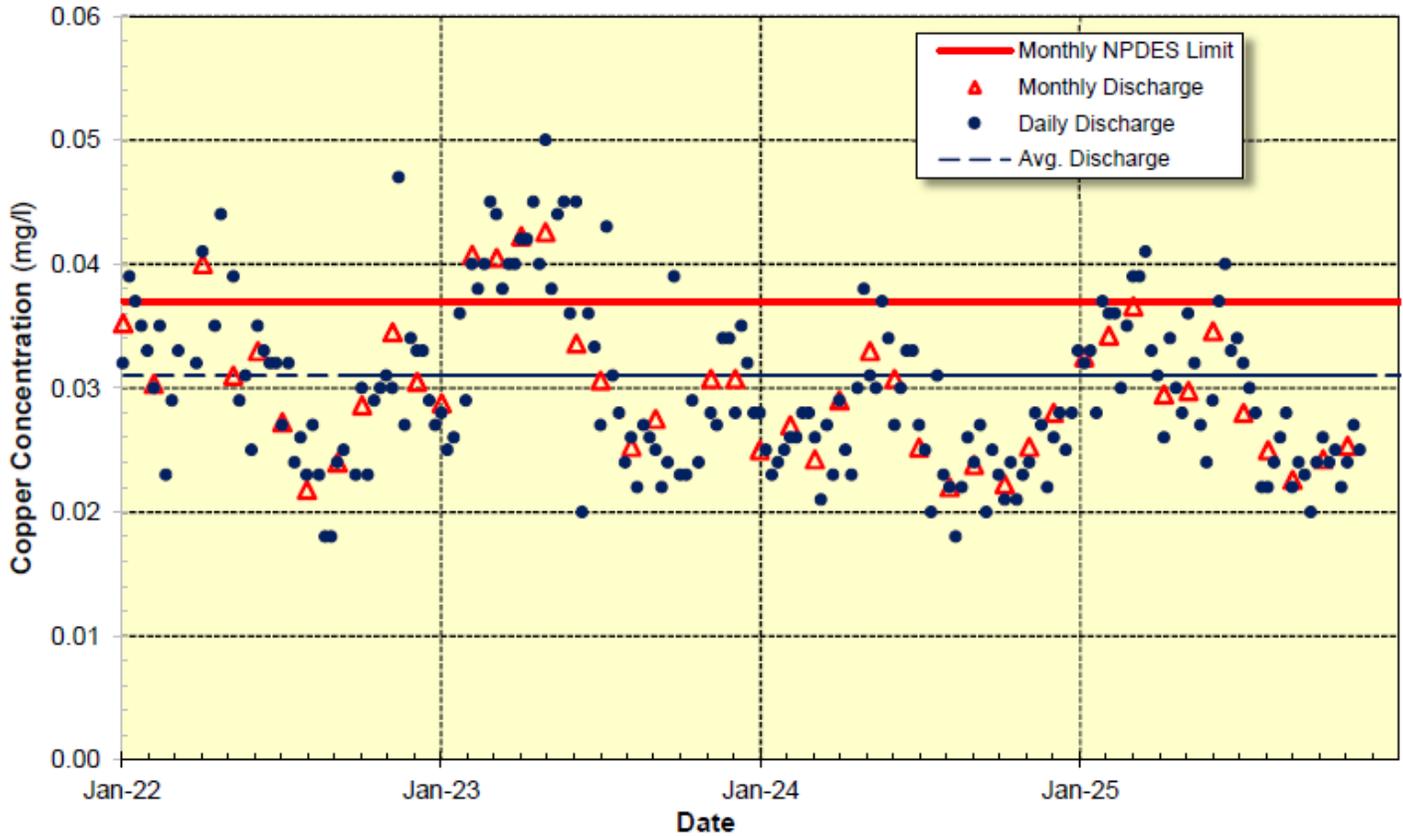
Each of the pollutants are discussed below:

Total Copper: The 90th percentile of DMR data (weekly data from May 2024 through September 2025) was the input of TMS modeling. The input value was 36 ug/l. The model shows RP for Total Copper with AML of 31 ug/l. It is recommended that the performance-based limits of 41 ug/l as AML will be applied, which the facility can meet 100% of the time.

Summary of Weekly Copper discharge data from DMRs:

Date	Copper (mg/l)	Date	Copper (mg/l)	Date	Copper (mg/l)	Date	Copper (mg/l)
5/6/2024	0.031	9/30/2024	0.023	2/17/2025	0.03	7/14/2025	0.03
5/13/2024	0.03	10/7/2024	0.021	2/24/2025	0.035	7/21/2025	0.028
5/20/2024	0.037	10/14/2024	0.024	3/3/2025	0.039	7/28/2025	0.022
5/27/2024	0.034	10/21/2024	0.021	3/10/2025	0.039	8/4/2025	0.022
6/3/2024	0.027	10/28/2024	0.023	3/17/2025	0.041	8/11/2025	0.024
6/10/2024	0.03	11/4/2024	0.024	3/24/2025	0.033	8/18/2025	0.026
6/17/2024	0.033	11/11/2024	0.028	3/31/2025	0.031	8/25/2025	0.028
6/24/2024	0.029	11/18/2024	0.027	4/7/2025	0.026	9/1/2025	0.022
7/1/2024	0.027	11/25/2024	0.022	4/14/2025	0.034	9/8/2025	0.024
7/8/2024	0.025	12/2/2024	0.026	4/21/2025	0.03	9/15/2025	0.023
7/15/2024	0.02	12/9/2024	0.028	4/28/2025	0.028	9/22/2025	0.02
7/22/2024	0.031	12/16/2024	0.025	5/5/2025	0.036	9/29/2025	0.024
7/29/2024	0.023	12/23/2024	0.028	5/12/2025	0.032		
8/5/2024	0.022	12/30/2024	0.033	5/19/2025	0.027	Average	0.028365
8/12/2024	0.018	1/6/2025	0.032	5/26/2025	0.024	Median	0.028
8/19/2024	0.022	1/13/2025	0.033	6/2/2025	0.029	90th percentile	0.036
8/26/2024	0.026	1/20/2025	0.028	6/9/2025	0.037	Max	0.041
9/2/2024	0.024	1/27/2025	0.037	6/16/2025	0.04	Min	0.018
9/9/2024	0.027	2/3/2025	0.036	6/23/2025	0.033	99th percentile	0.04027
9/16/2024	0.02	2/10/2025	0.036	6/30/2025	0.034		

EFFLUENT COPPER - TROUT RUN W.P.C.C. (NPDES monitoring)



Total Zinc: TMS recommends monitoring requirements for Total Zinc for an input value of 51 ug/l. A quarterly monitoring will be included in the permit.

Additional Considerations

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. Delaware River Basin Commission's (DRBC's) Water Quality Regulations at Section 4.30.4.A requires that during winter season from October through April, the instantaneous maximum concentration of fecal coliform organisms shall not be greater than 1,000 per 100 milliliters in more than 10 percent of the samples tested. Therefore, the summer limit is governed by DEP's regulation while winter limit is governed by DRBC's regulation.

E. Coli:

DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends monthly E. Coli monitoring for all major sewage dischargers. 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)) 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 average weekly, 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 limits are calculated to be 1501.2 lbs./day and 2251.8 lbs./day respectively, which are rounded down to 1500 lbs./day and 2250 lbs./day, respectively (362-0400-001).

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 attached printout indicates that a water quality limit of 0.5 mg/l would be needed to prevent toxicity concerns at the discharge point for Outfall 002. The Instantaneous Maximum (IMAX) limit is 1.6 mg/l. The existing permit has AML limit of 0.5 mg/l and IMAX limit of 1.2 mg/l. The IMAX is a little more stringent and will be carried over due to anti-backsliding policy. DMR data from October 2019 to September 2020 indicates that the plant is discharging below the existing limits. The minimum monitoring frequency is 1/day.

Flow and Influent BOD₅, CBOD₅, 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 BOD₅ and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94. To show compliance with percentage removal efficiency of CBOD₅, reporting for influent CBOD₅ will remain in the permit.

Best Professional Judgement (BPJ):

Total Phosphorus:

Existing monthly monitoring requirement will be carried over in this renewal.

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).

Total Nitrogen:

PADEP's SOP BCW-PMT-033 suggests monitoring requirement, at a minimum, for facilities with design flow greater than 2,000 GPD. This requirement is applied for all facilities meeting the flow criteria.

Anti-Backsliding

The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

Development of Effluent Limitations

Outfall No.	<u>003</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 6' 35.00"</u>	Longitude	<u>-75° 24' 24.00"</u>
Wastewater Description:	<u>Stormwater</u>		

Outfall 003 is a stormwater only outfall. Per Phase II stormwater regulations, major POTWs are required to have a permit for the discharge of stormwater. Therefore, stormwater monitoring requirements are included in Part A and Part C of the permit for this outfall. The existing monitoring requirements will be carried over in this renewal.

Whole Effluent Toxicity (WET)

For Outfall 002 Acute Chronic WET Testing was completed:

- For the permit renewal application (4 tests).
- Quarterly throughout the permit term.
- Quarterly throughout the permit term and a TIE/TRE was conducted.
- Other: **Annually**

The dilution series used for the tests was: 100%, 58%, 15%, 8%, and 4%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 15%.

Summary of Four Most Recent Test Results

(NOTE – Enter results into one table, depending on which data analysis method was used).

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	Ceriodaphnia Results (Pass/Fail)		Pimephales Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
10/24/2021	Pass	Pass	Pass	Pass
10/27/2022	Pass	Pass	Pass	Pass
10/30/2023	Pass	Pass	Pass	Pass
10/29/2024	Pass	Pass	Pass	Pass

* A “passing” result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value (“T-Test Result”) is greater than the critical t value. A “failing” result is exhibited when the calculated t value (“T-Test Result”) is less than the critical t value.

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).

YES NO

Comments: None

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.029**

Chronic Partial Mix Factor (PMFc): **0.199**

1. Determine IWC – Acute (IWCa):

$$(Q_d \times 1.547) / ((Q_{7-10} \times PMFa) + (Q_d \times 1.547))$$

$$[(6.0 \text{ MGD} \times 1.547) / ((259 \text{ cfs} \times 0.029) + (6.0 \text{ MGD} \times 1.547))] \times 100 = \mathbf{55.27\%}$$

Is IWCa < 1%? YES NO (Chronic Test required)

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

Type of Test for Permit Renewal: Chronic

2. Determine Target IWCC (If Chronic Tests Required)

$$(Q_d \times 1.547) / (Q_{7-10} \times PMFc) + (Q_d \times 1.547)$$

$$[(6.0 \text{ MGD} \times 1.547) / ((259 \text{ cfs} \times 0.199) + (6.0 \text{ MGD} \times 1.547))] \times 100 = 15.26\%$$

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 58%, 15%, 8%, and 4%.

TIWC: 15%

WET Limits

Has reasonable potential been determined? YES NO

Will WET limits be established in the permit? YES NO

If WET limits will be established, identify the species and the limit values for the permit (TU).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

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	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
CBOD5	1251	2000	XXX	25.0	40.0 Wkly Avg	50	1/day	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
TSS	1500	2250	XXX	30.0	45.0 Wkly Avg	60	1/day	24-Hr Composite
Total Copper	2.05	2.4 Daily Max	XXX	0.041	0.048 Daily Max	0.077	1/week	24-Hr Composite
Total Zinc	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Dissolved Solids	Report Avg Qrtly	XXX	XXX	1000.0 Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1- Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
Fecal Coliform (No./100 ml) May 1- Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab

Outfall 002, 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	Daily Maximum	Instant. Maximum		
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculations
Ammonia Nov 1 - Apr 30	1000	XXX	XXX	20.0	XXX	40	1/day	24-Hr Composite
Ammonia May 1 - Oct 31	750	XXX	XXX	15.0	XXX	30	1/day	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
PCBs (Dry Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite

Compliance Sampling Location: At Outfall 002

Other Comments: None

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 003, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
COD	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TSS	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

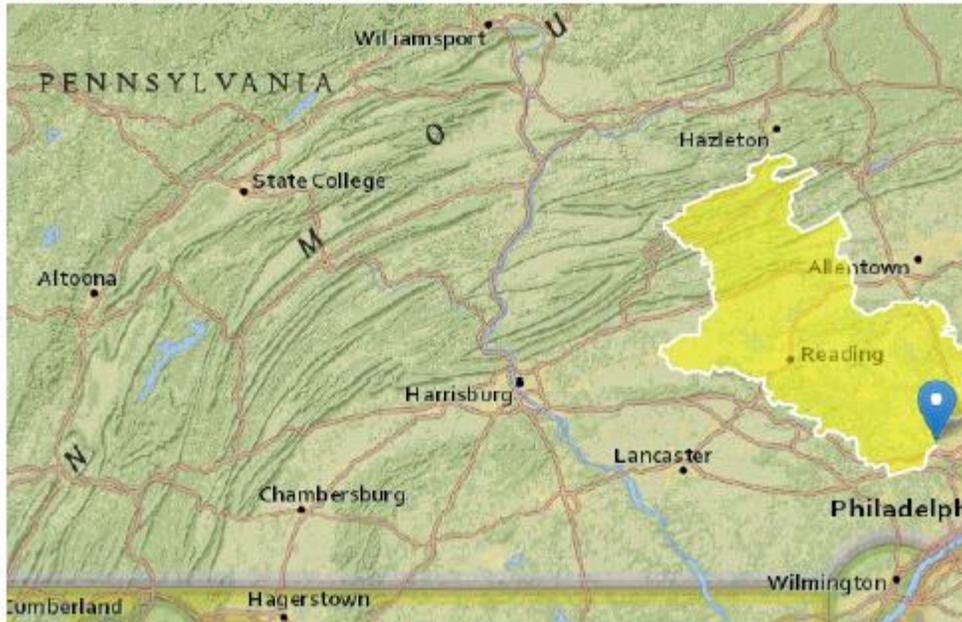
Compliance Sampling Location: At Outfall 003

Other Comments: None

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input checked="" type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: BCW-PMT-037
<input type="checkbox"/>	Other: [redacted]

PA0026131 at Outfall 002

Region ID: PA
 Workspace ID: PA20201028181413076000
 Clicked Point (Latitude, Longitude): 40.11134, -75.40872
 Time: 2020-10-28 14:14:32 -0400



Basin Characteristics			
Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1720	square miles
BSLOPD	Mean basin slope measured in degrees	5.5944	degrees
ROCKDEP	Depth to rock	4.5	feet
URBAN	Percentage of basin with urban development	8.4809	percent
PRECIP	Mean Annual Precipitation	46	inches

Parameter Code	Parameter Description	Value	Unit
STRDEN	Stream Density -- total length of streams divided by drainage area	1.51	miles per square mile
CARBON	Percentage of area of carbonate rock	13.75	percent

Low-Flow Statistics Parameters[47 Percent (816 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1720	square miles	4.78	1150
BSLOPD	Mean Basin Slope	5.5944	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	8.4809	percent	0	89

Low-Flow Statistics Parameters[53 Percent (905 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1720	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46	inches	35	50.4
STRDEN	Stream Density	1.51	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	13.75	percent	0	99

Low-Flow Statistics Disclaimers[47 Percent (816 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[47 Percent (816 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	417	ft ³ /s
30 Day 2 Year Low Flow	514	ft ³ /s
7 Day 10 Year Low Flow	259	ft ³ /s
30 Day 10 Year Low Flow	311	ft ³ /s
90 Day 10 Year Low Flow	415	ft ³ /s

Low-Flow Statistics Disclaimers[53 Percent (905 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report[53 Percent (905 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	640	ft ³ /s
30 Day 2 Year Low Flow	753	ft ³ /s
7 Day 10 Year Low Flow	429	ft ³ /s
30 Day 10 Year Low Flow	503	ft ³ /s
90 Day 10 Year Low Flow	612	ft ³ /s

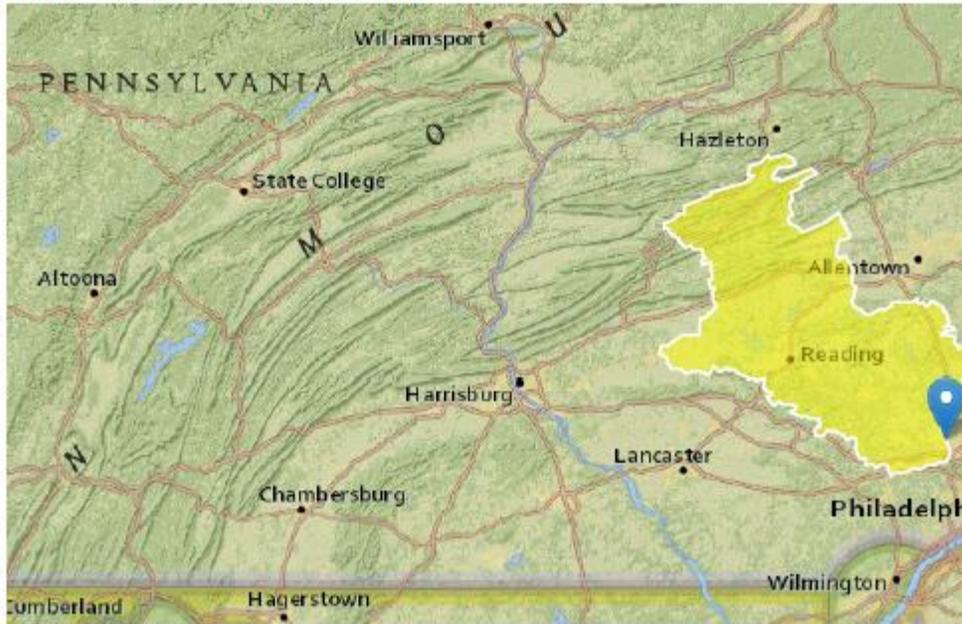
Low-Flow Statistics Flow Report[Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	534	ft ³ /s
30 Day 2 Year Low Flow	640	ft ³ /s
7 Day 10 Year Low Flow	348	ft ³ /s
30 Day 10 Year Low Flow	412	ft ³ /s
90 Day 10 Year Low Flow	519	ft ³ /s

Low-Flow Statistics Citations

PA0026131 at Node 2

Region ID: PA
 Workspace ID: PA20201028181806016000
 Clicked Point (Latitude, Longitude): 40.11812, -75.37909
 Time: 2020-10-28 14:18:26 -0400



Basin Characteristics			
Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1740	square miles
BSLOPD	Mean basin slope measured in degrees	5.5735	degrees
ROCKDEP	Depth to rock	4.5	feet
URBAN	Percentage of basin with urban development	9.1568	percent
PRECIP	Mean Annual Precipitation	46	inches

Parameter Code	Parameter Description	Value	Unit
STRDEN	Stream Density -- total length of streams divided by drainage area	1.51	miles per square mile
CARBON	Percentage of area of carbonate rock	13.96	percent

Low-Flow Statistics Parameters[48 Percent (833 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1740	square miles	4.78	1150
BSLOPD	Mean Basin Slope	5.5735	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	9.1568	percent	0	89

Low-Flow Statistics Parameters[52 Percent (905 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1740	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46	inches	35	50.4
STRDEN	Stream Density	1.51	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	13.96	percent	0	99

Low-Flow Statistics Disclaimers[48 Percent (833 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[48 Percent (833 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	425	ft ³ /s
30 Day 2 Year Low Flow	524	ft ³ /s
7 Day 10 Year Low Flow	265	ft ³ /s
30 Day 10 Year Low Flow	318	ft ³ /s
90 Day 10 Year Low Flow	425	ft ³ /s

Low-Flow Statistics Disclaimers[52 Percent (905 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report[52 Percent (905 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	650	ft ³ /s
30 Day 2 Year Low Flow	764	ft ³ /s
7 Day 10 Year Low Flow	436	ft ³ /s
30 Day 10 Year Low Flow	512	ft ³ /s
90 Day 10 Year Low Flow	621	ft ³ /s

Low-Flow Statistics Flow Report[Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	542	ft ³ /s
30 Day 2 Year Low Flow	649	ft ³ /s
7 Day 10 Year Low Flow	354	ft ³ /s
30 Day 10 Year Low Flow	419	ft ³ /s
90 Day 10 Year Low Flow	527	ft ³ /s

Low-Flow Statistics Citations

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
03F	833	SCHUYLKILL RIVER	27.700	58.04	1720.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	pH	Stream Temp (°C)	pH
	Q7-10	0.150	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	20.00
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
		Trout Run WPC	PA0026131	6.0000			

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	15.00	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
03F	833	SCHUYLKILL RIVER	26.720	57.91	1740.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
	(cfsm)								Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.150	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	20.00	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	0.00	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

<u>SWP Basin</u>		<u>Stream Code</u>			<u>Stream Name</u>							
03F		833			SCHUYLKILL RIVER							
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
27.700	258.00	0.00	258.00	9.282	0.00003	1.258	316.75	251.74	0.67	0.089	20.00	7.00
Q1-10 Flow												
27.700	165.12	0.00	165.12	9.282	0.00003	NA	NA	NA	0.53	0.113	20.00	6.99
Q30-10 Flow												
27.700	309.60	0.00	309.60	9.282	0.00003	NA	NA	NA	0.74	0.081	20.00	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.2	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
03F	833	SCHUYLKILL RIVER

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
27.700	Trout Run WPCC	9.71	30	9.71	30	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
27.700	Trout Run WPCC	1.92	15	1.92	15	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
27.70	Trout Run WPCC	25	25	15	15	5	5	0	0

WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
03F	833	SCHUYLKILL RIVER		
<u>RFI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>
27.700	6.000	20.000		6.996
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>
316.750	1.258	251.740		0.671
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>
2.80	0.444	0.52		0.700
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>
8.130	0.079	Tslvoglou		5
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.089	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.009	2.79	0.52	8.10
	0.018	2.78	0.51	8.07
	0.027	2.77	0.51	8.04
	0.036	2.75	0.51	8.01
	0.045	2.74	0.50	7.98
	0.054	2.73	0.50	7.95
	0.063	2.72	0.50	7.92
	0.071	2.71	0.50	7.89
	0.080	2.70	0.49	7.86
	0.089	2.69	0.49	7.83

WQM 7.0 Effluent Limits

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>					
03F	833	SCHUYLKILL RIVER					
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
27.700	Trout Run WPCC	PA0026131	6.000	CBOD5	25		
				NH3-N	15	30	
				Dissolved Oxygen			5



Discharge Information

Instructions Discharge Stream

Facility: Trout Run WPCC NPDES Permit No.: PA0026131 Outfall No.: 002

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

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
6	191	7.5						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1											
Total Dissolved Solids (PWS)	mg/L										
Chloride (PWS)	mg/L										
Bromide	mg/L										
Sulfate (PWS)	mg/L										
Fluoride (PWS)	mg/L										
Group 2											
Total Aluminum	µg/L	50									
Total Antimony	µg/L	1									
Total Arsenic	µg/L	< 1									
Total Barium	µg/L	38									
Total Beryllium	µg/L	< 1									
Total Boron	µg/L	200									
Total Cadmium	µg/L	< 0.1									
Total Chromium (III)	µg/L	1.6									
Hexavalent Chromium	µg/L	< 0.25									
Total Cobalt	µg/L	0.3									
Total Copper	mg/L	0.036									
Free Cyanide	µg/L	3									
Total Cyanide	µg/L	3									
Dissolved Iron	µg/L	90									
Total Iron	µg/L	200									
Total Lead	µg/L	< 1									
Total Manganese	µg/L	22									
Total Mercury	µg/L	< 0.2									
Total Nickel	µg/L	4.8									
Total Phenols (Phenolics) (PWS)	µg/L	32									
Total Selenium	µg/L	2									
Total Silver	µg/L	< 0.1									
Total Thallium	µg/L	< 1									
Total Zinc	µg/L	51									
Total Molybdenum	µg/L	10									
Acrolein	µg/L	< 2									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	< 2									
Benzene	µg/L	< 0.5									
Bromoform	µg/L	< 0.5									

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	27.7	58.04	1720			Yes
End of Reach 1	000833	26.72	57.91	1740			Yes

Q₇₋₁₀

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	27.7	0.15										206	7		
End of Reach 1	26.72	0.15										206	7		

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	27.7														
End of Reach 1	26.72														

Hydrodynamics

Wasteload Allocations

AFC

CCT (min): 15

PMF: 0.029

Analysis Hardness (mg/l): 197.67

Analysis pH: 7.21

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 Aluminum	0	0		0	750	750	1,350	
Total Antimony	0	0		0	1,100	1,100	1,980	
Total Arsenic	0	0		0	340	340	612	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	37,798	
Total Boron	0	0		0	8,100	8,100	14,579	
Total Cadmium	0	0		0	3.904	4.26	7.68	Chem Translator of 0.915 applied
Total Chromium (III)	0	0		0	995.550	3,150	5,671	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	18.3	29.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	171	
Total Copper	0	0		0	25.539	26.6	47.9	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	39.6	
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	134.455	194	350	Chem Translator of 0.692 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.85	2.96	Chem Translator of 0.85 applied
Total Nickel	0	0		0	833.342	835	1,503	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	10.385	12.2	22.0	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	117	
Total Zinc	0	0		0	208.737	213	384	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	5.4	
Acrylonitrile	0	0		0	650	650	1,170	
Benzene	0	0		0	640	640	1,152	
Bromoform	0	0		0	1,800	1,800	3,240	



Carbon Tetrachloride	0	0		0	2,800	2,800	5,040
Chlorobenzene	0	0		0	1,200	1,200	2,160
Chlorodibromomethane	0	0		0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	32,398
Chloroform	0	0		0	1,900	1,900	3,420
Dichlorobromomethane	0	0		0	N/A	N/A	N/A
1,2-Dichloroethane	0	0		0	15,000	15,000	26,999
1,1-Dichloroethylene	0	0		0	7,500	7,500	13,499
1,2-Dichloropropane	0	0		0	11,000	11,000	19,799
1,3-Dichloropropylene	0	0		0	310	310	558
Ethylbenzene	0	0		0	2,900	2,900	5,220
Methyl Bromide	0	0		0	550	550	990
Methyl Chloride	0	0		0	28,000	28,000	50,397
Methylene Chloride	0	0		0	12,000	12,000	21,599
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,800
Tetrachloroethylene	0	0		0	700	700	1,260
Toluene	0	0		0	1,700	1,700	3,060
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	12,239
1,1,1-Trichloroethane	0	0		0	3,000	3,000	5,400
1,1,2-Trichloroethane	0	0		0	3,400	3,400	6,120
Trichloroethylene	0	0		0	2,300	2,300	4,140
Vinyl Chloride	0	0		0	N/A	N/A	N/A
2-Chlorophenol	0	0		0	560	560	1,008
2,4-Dichlorophenol	0	0		0	1,700	1,700	3,060
2,4-Dimethylphenol	0	0		0	660	660	1,188
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	144
2,4-Dinitrophenol	0	0		0	660	660	1,188
2-Nitrophenol	0	0		0	8,000	8,000	14,399
4-Nitrophenol	0	0		0	2,300	2,300	4,140
Pentachlorophenol	0	0		0	10.746	10.7	19.3
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	460	460	828
Acenaphthene	0	0		0	83	83.0	149
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	300	300	540
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.9
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	53,997
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	8,100
4-Bromophenyl Phenyl Ether	0	0		0	270	270	486
Butyl Benzyl Phthalate	0	0		0	140	140	252
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	820	820	1,476
1,3-Dichlorobenzene	0	0		0	350	350	630

1,4-Dichlorobenzene	0	0		0	730	730	1,314	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	7,200	
Dimethyl Phthalate	0	0		0	2,500	2,500	4,500	
Di-n-Butyl Phthalate	0	0		0	110	110	198	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	2,880	
2,6-Dinitrotoluene	0	0		0	990	990	1,782	
1,2-Diphenylhydrazine	0	0		0	15	15.0	27.0	
Fluoranthene	0	0		0	200	200	360	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	18.0	
Hexachlorocyclopentadiene	0	0		0	5	5.0	9.0	
Hexachloroethane	0	0		0	60	60.0	108	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	17,999	
Naphthalene	0	0		0	140	140	252	
Nitrobenzene	0	0		0	4,000	4,000	7,200	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	30,598	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	540	
Phenanthrene	0	0		0	5	5.0	9.0	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	234	

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

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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	1,439	
Total Arsenic	0	0		0	150	150	981	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	26,822	
Total Boron	0	0		0	1,600	1,600	10,467	
Total Cadmium	0	0		0	0.403	0.46	3.0	Chem Translator of 0.879 applied
Total Chromium (III)	0	0		0	132.733	154	1,010	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	68.0	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	124	
Total Copper	0	0		0	16.449	17.1	112	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	34.0	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	43,194	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	5.410	7.87	51.5	Chem Translator of 0.687 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	5.93	Chem Translator of 0.85 applied
Total Nickel	0	0		0	94.946	95.2	623	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	32.6	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	85.0	
Total Zinc	0	0		0	215.881	219	1,432	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	19.6	
Acrylonitrile	0	0		0	130	130	850	
Benzene	0	0		0	130	130	850	
Bromoform	0	0		0	370	370	2,420	
Carbon Tetrachloride	0	0		0	560	560	3,663	
Chlorobenzene	0	0		0	240	240	1,570	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	22,897	
Chloroform	0	0		0	390	390	2,551	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	20,280	
1,1-Dichloroethylene	0	0		0	1,500	1,500	9,813	
1,2-Dichloropropane	0	0		0	2,200	2,200	14,382	
1,3-Dichloropropylene	0	0		0	61	61.0	399	
Ethylbenzene	0	0		0	580	580	3,794	
Methyl Bromide	0	0		0	110	110	720	
Methyl Chloride	0	0		0	5,500	5,500	35,980	
Methylene Chloride	0	0		0	2,400	2,400	15,701	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	1,374	
Tetrachloroethylene	0	0		0	140	140	916	
Toluene	0	0		0	330	330	2,159	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	9,159	
1,1,1-Trichloroethane	0	0		0	610	610	3,991	
1,1,2-Trichloroethane	0	0		0	680	680	4,448	
Trichloroethylene	0	0		0	450	450	2,944	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	720	
2,4-Dichlorophenol	0	0		0	340	340	2,224	
2,4-Dimethylphenol	0	0		0	130	130	850	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	105	
2,4-Dinitrophenol	0	0		0	130	130	850	
2-Nitrophenol	0	0		0	1,600	1,600	10,467	
4-Nitrophenol	0	0		0	470	470	3,075	
Pentachlorophenol	0	0		0	8.245	8.24	53.9	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	595	
Acenaphthene	0	0		0	17	17.0	111	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	386	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.65	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	

DKL

3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	39,251	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	5,953	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	353	
Butyl Benzyl Phthalate	0	0		0	35	35.0	229	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	1,047	
1,3-Dichlorobenzene	0	0		0	69	69.0	451	
1,4-Dichlorobenzene	0	0		0	150	150	981	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	5,234	
Dimethyl Phthalate	0	0		0	500	500	3,271	
Di-n-Butyl Phthalate	0	0		0	21	21.0	137	
2,4-Dinitrotoluene	0	0		0	320	320	2,093	
2,6-Dinitrotoluene	0	0		0	200	200	1,308	
1,2-Diphenylhydrazine	0	0		0	3	3.0	19.6	
Fluoranthene	0	0		0	40	40.0	262	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	13.1	
Hexachlorocyclopentadiene	0	0		0	1	1.0	6.54	
Hexachloroethane	0	0		0	12	12.0	78.5	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	13,738	
Naphthalene	0	0		0	43	43.0	281	
Nitrobenzene	0	0		0	810	810	5,299	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	22,242	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	386	
Phenanthrene	0	0		0	1	1.0	6.54	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	170	

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

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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	36.6	
Total Arsenic	0	0		0	10	10.0	65.4	
Total Barium	0	0		0	2,400	2,400	15,701	
Total Boron	0	0		0	3,100	3,100	20,280	



Total Cadmium	0	0		0	N/A	N/A	N/A
Total Chromium (III)	0	0		0	N/A	N/A	N/A
Hexavalent Chromium	0	0		0	N/A	N/A	N/A
Total Cobalt	0	0		0	N/A	N/A	N/A
Total Copper	0	0		0	N/A	N/A	N/A
Free Cyanide	0	0		0	4	4.0	26.2
Dissolved Iron	0	0		0	300	300	1,963
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	6,542
Total Mercury	0	0		0	0.050	0.05	0.33
Total Nickel	0	0		0	610	610	3,991
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A
Total Selenium	0	0		0	N/A	N/A	N/A
Total Silver	0	0		0	N/A	N/A	N/A
Total Thallium	0	0		0	0.24	0.24	1.57
Total Zinc	0	0		0	N/A	N/A	N/A
Acrolein	0	0		0	3	3.0	19.6
Acrylonitrile	0	0		0	N/A	N/A	N/A
Benzene	0	0		0	N/A	N/A	N/A
Bromoform	0	0		0	N/A	N/A	N/A
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A
Chlorobenzene	0	0		0	100	100.0	654
Chlorodibromomethane	0	0		0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A
Chloroform	0	0		0	5.7	5.7	37.3
Dichlorobromomethane	0	0		0	N/A	N/A	N/A
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A
1,1-Dichloroethylene	0	0		0	33	33.0	216
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A
Ethylbenzene	0	0		0	68	68.0	445
Methyl Bromide	0	0		0	100	100.0	654
Methyl Chloride	0	0		0	N/A	N/A	N/A
Methylene Chloride	0	0		0	N/A	N/A	N/A
1,1,1,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A
Tetrachloroethylene	0	0		0	N/A	N/A	N/A
Toluene	0	0		0	57	57.0	373
1,2-trans-Dichloroethylene	0	0		0	100	100.0	654
1,1,1-Trichloroethane	0	0		0	10,000	10,000	65,419
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A
Trichloroethylene	0	0		0	N/A	N/A	N/A
Vinyl Chloride	0	0		0	N/A	N/A	N/A
2-Chlorophenol	0	0		0	30	30.0	198
2,4-Dichlorophenol	0	0		0	10	10.0	65.4

DKL

2,4-Dimethylphenol	0	0		0	100	100.0	654
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	13.1
2,4-Dinitrophenol	0	0		0	10	10.0	65.4
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	N/A	N/A	N/A
Phenol	0	0		0	4,000	4,000	26,168
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A
Acenaphthene	0	0		0	70	70.0	458
Anthracene	0	0		0	300	300	1,963
Benzidine	0	0		0	N/A	N/A	N/A
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.65
2-Chloronaphthalene	0	0		0	800	800	5,234
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	1,000	1,000	6,542
1,3-Dichlorobenzene	0	0		0	7	7.0	45.8
1,4-Dichlorobenzene	0	0		0	300	300	1,963
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	600	600	3,925
Dimethyl Phthalate	0	0		0	2,000	2,000	13,094
Di-n-Butyl Phthalate	0	0		0	20	20.0	131
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A
Fluoranthene	0	0		0	20	20.0	131
Fluorene	0	0		0	50	50.0	327
Hexachlorobenzene	0	0		0	N/A	N/A	N/A
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A
Hexachlorocyclopentadiene	0	0		0	4	4.0	26.2
Hexachloroethane	0	0		0	N/A	N/A	N/A
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	34	34.0	222
Naphthalene	0	0		0	N/A	N/A	N/A
Nitrobenzene	0	0		0	10	10.0	65.4
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A

Phenanthrene	0	0		0	N/A	N/A	N/A
Pyrene	0	0		0	20	20.0	131
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.46

 CRL

 CCT (min):

 PMF:

 Analysis Hardness (mg/l):

 Analysis pH:

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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	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	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	1.89	
Benzene	0	0		0	0.58	0.58	18.2	
Bromoform	0	0		0	7	7.0	220	
Carbon Tetrachloride	0	0		0	0.4	0.4	12.6	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	25.1	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	29.8	
1,2-Dichloroethane	0	0		0	9.9	9.9	311	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	28.3	
1,3-Dichloropropylene	0	0		0	0.27	0.27	8.48	
Ethylbenzene	0	0		0	N/A	N/A	N/A	

DKL

Methyl Bromide	0	0		0	N/A	N/A	N/A
Methyl Chloride	0	0		0	N/A	N/A	N/A
Methylene Chloride	0	0		0	20	20.0	628
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	6.28
Tetrachloroethylene	0	0		0	10	10.0	314
Toluene	0	0		0	N/A	N/A	N/A
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A
1,1,2-Trichloroethane	0	0		0	0.55	0.55	17.3
Trichloroethylene	0	0		0	0.6	0.6	18.9
Vinyl Chloride	0	0		0	0.02	0.02	0.63
2-Chlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	0.030	0.03	0.94
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	47.1
Acenaphthene	0	0		0	N/A	N/A	N/A
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	0.0001	0.0001	0.003
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.031
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.003
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.031
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.31
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.94
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	10.1
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	0.12	0.12	3.77
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.003
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	1.57
Diethyl Phthalate	0	0		0	N/A	N/A	N/A
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A
2,4-Dinitrotoluene	0	0		0	0.05	0.05	1.57
2,6-Dinitrotoluene	0	0		0	0.05	0.05	1.57
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.94

DKB

Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.003	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.31	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	3.14	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.031	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.022	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.16	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	104	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	1.54	2.4	0.031	0.048	0.077	mg/L	0.031	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	246	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 Aluminum	865	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	36.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	15,701	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	9,345	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	1,010	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	18.8	µg/L	Discharge Conc < TQL
Total Cobalt	110	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	25.4	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS

Dissolved Iron	1,963	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	43,194	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	51.5	µg/L	Discharge Conc < TQL
Total Manganese	6,542	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.33	µg/L	Discharge Conc < TQL
Total Nickel	623	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	32.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	14.1	µg/L	Discharge Conc < TQL
Total Thallium	1.57	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.46	µg/L	Discharge Conc < TQL
Acrylonitrile	1.89	µg/L	Discharge Conc < TQL
Benzene	18.2	µg/L	Discharge Conc < TQL
Bromoform	220	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	12.6	µg/L	Discharge Conc < TQL
Chlorobenzene	654	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	25.1	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	20,766	µg/L	Discharge Conc < TQL
Chloroform	37.3	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	29.8	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	311	µg/L	Discharge Conc < TQL
1,1,1-Dichloroethylene	216	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	28.3	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	8.48	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	445	µg/L	Discharge Conc < TQL
Methyl Bromide	635	µg/L	Discharge Conc < TQL
Methyl Chloride	32,303	µg/L	Discharge Conc < TQL
Methylene Chloride	628	µg/L	Discharge Conc < TQL
1,1,1,2-Tetrachloroethane	6.28	µg/L	Discharge Conc < TQL
Tetrachloroethylene	314	µg/L	Discharge Conc < TQL
Toluene	373	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	654	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	3,461	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	17.3	µg/L	Discharge Conc < TQL
Trichloroethylene	18.9	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.63	µg/L	Discharge Conc < TQL
2-Chlorophenol	196	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	65.4	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	654	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	13.1	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	65.4	µg/L	Discharge Conc < TQL

2-Nitrophenol	9,229	µg/L	Discharge Conc < TQL
4-Nitrophenol	2,653	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.94	µg/L	Discharge Conc < TQL
Phenol	26,168	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	47.1	µg/L	Discharge Conc < TQL
Acenaphthene	95.8	µg/L	Discharge Conc ≤ 25% WQBEL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	1,963	µg/L	Discharge Conc ≤ 25% WQBEL
Benidine	0.003	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.031	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.003	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.031	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.31	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.94	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	10.1	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	311	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.65	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	5,234	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	3.77	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthracene	0.003	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	946	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	45.8	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	842	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	1.57	µg/L	Discharge Conc < TQL
Diethyl Phthalate	3,925	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	2,884	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	127	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	1.57	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	1.57	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.94	µg/L	Discharge Conc < TQL
Fluoranthene	131	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	327	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorobenzene	0.003	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.31	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	5.77	µg/L	Discharge Conc < TQL
Hexachloroethane	3.14	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.031	µg/L	Discharge Conc < TQL
Isophorone	222	µg/L	Discharge Conc < TQL
Naphthalene	162	µg/L	Discharge Conc < TQL
Nitrobenzene	65.4	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.022	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.16	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	104	µg/L	Discharge Conc < TQL
Phenanthrene	5.77	µg/L	Discharge Conc < TQL
Pyrene	131	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	0.46	µg/L	Discharge Conc < TQL

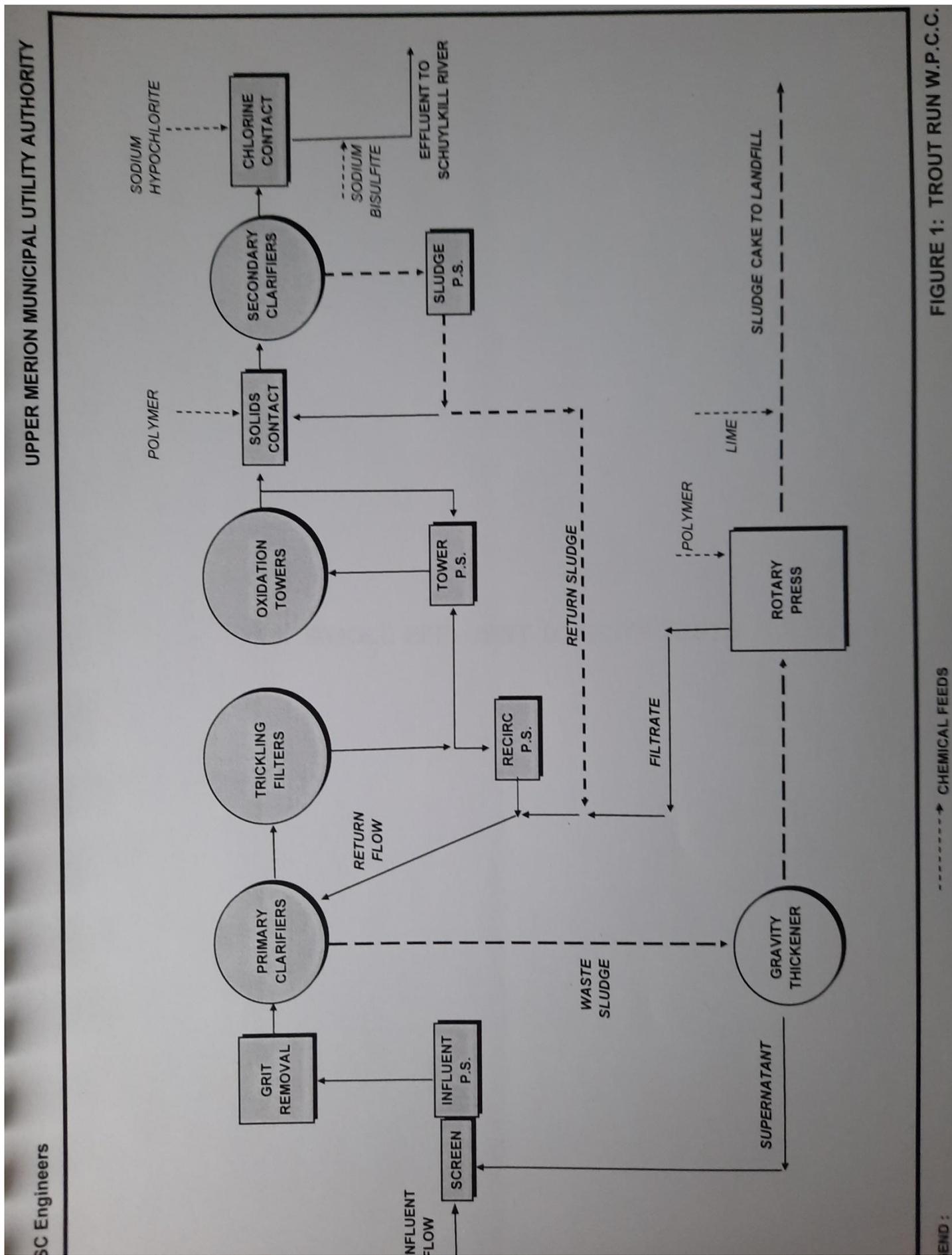


FIGURE 1: TROUT RUN W.P.C.C.

-----> CHEMICAL FEEDS

TRC_CALC

TRC EVALUATION				
Input appropriate values in A3:A9 and D3:D9				
259	= Q stream (cfs)		0.5	= CV Daily
6	= 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 = 8.920	1.3.2.iii	WLA_cfc = 8.689
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 3.324	5.1d	LTA_cfc = 5.051
Source	Reference	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	$(.019/e^{-k \cdot AFC_tc}) + [(AFC_Yc \cdot Qs \cdot .019 / Qd \cdot e^{-k \cdot AFC_tc}) \dots + Xd + (AFC_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$			
LTAMULT_afc	$EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1) \cdot 0.5)$			
LTA_afc	wla_afc * LTAMULT_afc			
WLA_cfc	$(.011/e^{-k \cdot CFC_tc}) + [(CFC_Yc \cdot Qs \cdot .011 / Qd \cdot e^{-k \cdot CFC_tc}) \dots + Xd + (CFC_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$			
LTAMULT_cfc	$EXP((0.5 \cdot LN(cvd^2 / no_samples + 1)) - 2.326 \cdot LN(cvd^2 / no_samples + 1) \cdot 0.5)$			
LTA_cfc	wla_cfc * LTAMULT_cfc			
AML MULT	$EXP(2.326 \cdot LN((cvd^2 / no_samples + 1) \cdot 0.5) - 0.5 \cdot LN(cvd^2 / no_samples + 1))$			
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)			

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test: Chronic
 Species Tested: Ceriodaphnia
 Endpoint: Reproduction
 TIWC (decimal): 0.15
 No. Per Replicate: 1
 TST b value: 0.75
 TST alpha value: 0.2

Facility Name: Trout Run WPCC
 Permit No.: PA0026131

Replicate No.	Test Completion Date: 10/24/2021	
	Control	TIWC
1	39	32
2	19	20
3	33	36
4	38	39
5	19	37
6	34	36
7	37	35
8	37	34
9	41	28
10	21	22
11		
12		
13		
14		
15		
Mean	31.800	31.900
Std Dev.	8.690	6.488
# Replicates	10	10

Replicate No.	Test Completion Date: 12/27/2022	
	Control	TIWC
1	17	24
2	17	25
3	15	15
4	12	14
5	6	23
6	20	32
7	12	13
8	21	29
9	15	17
10	16	14
11		
12		
13		
14		
15		
Mean	15.100	20.600
Std Dev.	4.332	6.883
# Replicates	10	10

T-Test Result: 2.7681
 Deg. of Freedom: 17
 Critical T Value: 0.8633
 Pass or Fail: **PASS**

T-Test Result: 3.8534
 Deg. of Freedom: 14
 Critical T Value: 0.8681
 Pass or Fail: **PASS**

Replicate No.	Test Completion Date: 10/30/2023	
	Control	TIWC
1	29	34
2	28	32
3	24	35
4	32	32
5		24
6	26	33
7	34	35
8	27	24
9	33	28
10	30	36
11		
12		
13		
14		
15		
Mean	29.222	31.300
Std Dev.	3.346	4.448
# Replicates	9	10

Replicate No.	Test Completion Date: 10/29/2024	
	Control	TIWC
1	18	24
2	14	20
3	14	21
4	18	27
5	12	19
6	15	17
7	21	22
8	19	19
9	14	16
10	19	
11		
12		
13		
14		
15		
Mean	16.400	20.556
Std Dev.	2.951	3.432
# Replicates	10	9

T-Test Result: 5.7333
 Deg. of Freedom: 15
 Critical T Value: 0.8662
 Pass or Fail: **PASS**

T-Test Result: 6.1557
 Deg. of Freedom: 14
 Critical T Value: 0.8681
 Pass or Fail: **PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test: Chronic
 Species Tested: Ceriodaphnia
 Endpoint: Survival
 TIWC (decimal): 0.15
 No. Per Replicate: 1
 TST b value: 0.75
 TST alpha value: 0.2

Facility Name: Trout Run WPCC
 Permit No.: PA0026131

Replicate No.	Test Completion Date: 10/24/2021	
	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

Replicate No.	Test Completion Date: 12/27/2022	
	Control	TIWC
1	1	1
2	1	1
3	1	1
4	0	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.900	1.000
Std Dev.	0.316	0.000
# Replicates	10	10

T-Test Result
 Deg. of Freedom
 Critical T Value
 Pass or Fail: **PASS**

T-Test Result
 Deg. of Freedom
 Critical T Value
 Pass or Fail: **PASS**

Replicate No.	Test Completion Date: 10/30/2023	
	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

Replicate No.	Test Completion Date: 10/29/2024	
	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	0	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.900	1.000
Std Dev.	0.316	0.000
# Replicates	10	10

T-Test Result
 Deg. of Freedom
 Critical T Value
 Pass or Fail: **PASS**

T-Test Result
 Deg. of Freedom
 Critical T Value
 Pass or Fail: **PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test: Chronic
 Species Tested: Pimephales
 Endpoint: Survival
 TIWC (decimal): 0.15
 No. Per Replicate: 10
 TST b value: 0.75
 TST alpha value: 0.25

Facility Name: Trout Run WPCC
 Permit No.: PA0026131

Test Completion Date: 10/26/2021		
Replicate No.	Control	TIWC
1	10	9
2	7	10
3	10	10
4	9	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.000	9.500
Std Dev.	1.414	0.577
# Replicates	4	4

Test Completion Date: 12/27/2022		
Replicate No.	Control	TIWC
1	8	10
2	10	9
3	10	8
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	9.250
Std Dev.	1.000	0.957
# Replicates	4	4

T-Test Result: 4.3231
 Deg. of Freedom: 5
 Critical T Value: 0.7267
 Pass or Fail: **PASS**

T-Test Result: 3.1496
 Deg. of Freedom: 5
 Critical T Value: 0.7267
 Pass or Fail: **PASS**

Test Completion Date: 10/31/2023		
Replicate No.	Control	TIWC
1	9	8
2	8	10
3	10	9
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.250	9.250
Std Dev.	0.967	0.957
# Replicates	4	4

Test Completion Date: 10/29/2024		
Replicate No.	Control	TIWC
1	10	9
2	10	10
3	8	10
4	9	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.250	9.750
Std Dev.	0.957	0.500
# Replicates	4	4

T-Test Result: 3.5251
 Deg. of Freedom: 5
 Critical T Value: 0.7267
 Pass or Fail: **PASS**

T-Test Result: 5.8363
 Deg. of Freedom: 5
 Critical T Value: 0.7267
 Pass or Fail: **PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test: Chronic
 Species Tested: Pimephales
 Endpoint: Growth
 TIWC (decimal): 0.15
 No. Per Replicate: 10
 TST b value: 0.75
 TST alpha value: 0.25

Facility Name: Trout Run WPCC
 Permit No.: PA0026131

Test Completion Date: 10/26/2021		
Replicate No.	Control	TIWC
1	0.617	0.555
2	0.644	0.534
3	0.622	0.668
4	0.566	0.539
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.612	0.574
Std Dev.	0.033	0.063
# Replicates	4	4

Test Completion Date: 10/27/2022		
Replicate No.	Control	TIWC
1	0.655	0.527
2	0.545	0.569
3	0.625	0.494
4	0.574	0.474
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.600	0.516
Std Dev.	0.050	0.042
# Replicates	4	4

T-Test Result: 3.3785
 Deg. of Freedom: 4
 Critical T Value: 0.7407
 Pass or Fail: **PASS**

T-Test Result: 2.3759
 Deg. of Freedom: 5
 Critical T Value: 0.7267
 Pass or Fail: **PASS**

Test Completion Date: 10/31/2023		
Replicate No.	Control	TIWC
1	0.418	0.559
2	0.481	0.549
3	0.561	0.582
4	0.561	0.593
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.505	0.571
Std Dev.	0.069	0.020
# Replicates	4	4

Test Completion Date: 10/29/2024		
Replicate No.	Control	TIWC
1	0.566	0.502
2	0.546	0.562
3	0.525	0.649
4	0.462	0.504
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.525	0.562
Std Dev.	0.045	0.072
# Replicates	4	4

T-Test Result: 6.8746
 Deg. of Freedom: 5
 Critical T Value: 0.7267
 Pass or Fail: **PASS**

T-Test Result: 4.2426
 Deg. of Freedom: 4
 Critical T Value: 0.7407
 Pass or Fail: **PASS**

WET Summary and Evaluation

Facility Name	Trout Run WPCC
Permit No.	PA0026131
Design Flow (MGD)	6
Q ₇₋₁₀ Flow (cfs)	259
PMF _a	0.029
PMF _c	0.199

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Ceriodaphnia	Reproduction	10/24/21	12/27/22	10/30/23	10/29/24
		PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Ceriodaphnia	Survival	10/24/21	12/27/22	10/30/23	10/29/24
		PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Pimephales	Survival	10/26/21	12/27/22	10/31/23	10/29/24
		PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Pimephales	Growth	10/26/21	10/27/22	10/31/23	10/29/24
		PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type Chronic
 TIWC 15 % Effluent
 Dilution Series 4, 8, 15, 58, 100 % Effluent
 Permit Limit None
 Permit Limit Species