pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0216941**
Facility Type	**Municipal**	APS ID	**1082420**
Major / Minor	**Major**	Authorization ID	**1429350**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Forest Hills Municipal Authority**	Facility Name	**South Fork Region WWTP**
Applicant Address	900 Locust St., P.O. Box 337	Facility Address	151 Cross Street
	Saint Michael, PA 15951-0337		South Fork, PA 15956
Applicant Contact	Matthew Roman	Facility Contact	Matthew Roman
Applicant Phone	(814) 459-5614	Facility Phone	(814) 459-5614
Client ID	160	Site ID	263683
Ch 94 Load Status	Not Overloaded	Municipality	Conemaugh Township
Connection Status	Dept. Imposed Connection Prohibitions	County	Cambria
Date Application Received	February 27, 2023	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility
Purpose of Application	NPDES permit renewal application.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Forest Hills Municipal Authority (Permittee) on February 27, 2023 for permittee's South Fork Regional WWTP (facility), located in Conemaugh Township, Cambria County. This is a major sewage facility with design flow of 1.2 MGD that discharges into Little Conemaugh River (WWF) in state watershed 18-E. The current permit will expire on August 31, 2023. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: Added: quarterly Total Copper and Total Zinc monitoring; limits requirements for Benzo(a)Anthracene and Butyl Benzyl Phthalate; E-Coli. Removed: Total Bromide monitoring. Revised: DO limit.

Sludge use and disposal description and location(s): Currently the generated biosolids are aerobically digested, dewatered through belt filter press, and landfilled. A WQM permit was issued on March 2023 that authorized construction of an Autothermal Thermophilic Aerobic Digestion (ATAD)/Storage Nitrification Denitrification Reactor (SNDR) process to produce Class A Biosolids. A general permit, PAG078609 was issued on September 27, 2022 for beneficial land application of biosolids.

Public Participation

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

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager	August 2, 2023
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	08/04/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.2
Latitude	40º 22' 8.14"	Longitude	-78º 48' 22.19"
Quad Name	Geistown	Quad Code	1615
Wastewater Description:	Sewage Effluent		

Receiving Waters	Little Conemaugh River (WWF)	Stream Code	45815
NHD Com ID	123719007	RMI	11.28
Drainage Area	159 mi^2	Yield (cfs/mi^2)	0.05
Q_{7-10} Flow (cfs)	**7.95**	Q_{7-10} Basis	See below
Elevation (ft)	1447	Slope (ft/ft)	
Watershed No.	18-E	Chapter 93 Class.	WWF
Existing Use	**WWF**	Existing Use Qualifier	Ch. 93
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final, 01/29/2010	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°C)	25	Default
Hardness (mg/L)	129	Application data
Other:		

Nearest Downstream Public Water Supply Intake		Saltsburg Municipal Waterworks, Saltsburg Boro, Indiana County	
PWS Waters	Conemaugh River	Flow at Intake (cfs)	
PWS RMI	0.52 mile	Distance from Outfall (mi)	63.13

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on May 5, 2023) was utilized to determine the drainage area and low flow statistics at discharge point. The StreamStats report shows the drainage area at the discharge point is 159 mi^2 and Q_{7-10} of 16.2 cfs. Default Q_{1-10}:Q_{7-10} of 0.64 and Q_{30-10}:Q_{7-10} of 1.36 will be used in modeling.

Q_{7-10} runoff rate (low flow yield): 16.2 cfs/159 mi^2 or 0.1 cfs/mi^2

PWS Intake:

The nearby downstream PWS intake is Saltsburg Municipal Municipal Authority on Conemaugh River in Saltsburg Borough, Indiana County, which is approximately 63.13 miles downstream of discharge point. Due to the distance, dilution, and effluent limitations, it is expected that the discharge will not adversely impact the PWS intake.

Wastewater Characteristics:

A pH of 7.23 (daily eDMR data, 90th percentile, July- September 2021-2022), default temperature of 25^{0}C (Default per 391-2000-007), and Hardness value of 97.7 mg/l (application data) will be used for modeling, if needed.

Background data:
There is no nearby WQN station to calculate the stream data. In absence of site-specific data, default or permittee provided data will be used. The default stream temperature of 25^{0}C (default), hardness of 129 mg/l (application data), and pH of 7.0 (default) will be used for modeling, as appropriate.

Kiskiminetas-Conemaugh River Watersheds TMDL:
Kiskiminetas-Conemaugh River Watersheds TMDL was approved by EPA on January 29, 2010 for AMD discharges. There is no reason to believe the STP will be discharging these metals in high concentrations. The discharge of metals from a sewage treatment plant of this nature is expected to be less than water quality criteria and not contributing to stream impairment. PADEP's Southwest Region's policy is to determine the Reasonable Potential for those three toxic pollutants listed in the TMDL (Total Aluminum, Total Manganese, and Total Iron) from the sample results collected during the last permit term. The permittee collected quarterly samples for those three pollutants, results of which will be analyzed to determine RP. If no RP is determined, quarterly monitoring will be continued.

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

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

Treatment Facility Summary

Treatment Facility Name: S Fork Region WWTP

WQM Permit No.	Issuance Date
1197403 A-5	3/1/2023

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	SBR with solids removal	UV	1.2

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
3.0	5,200	Not Overloaded	Conditioning (chemical, heat etc.)	Landfill

Changes Since Last Permit Issuance: Installation of an Autothermal Aerobic Digestion (ATAD)/Storage Nitrification Denitrification Reactor (SNDR) process and upgrading the UV system.

Treatment Plant Description

Forest Hill Municipal Authority (FHMA/permittee) owns and operates a major sewage treatment plant named South Fork Regional WWTP (facility), located in Conemaugh Township, Cambria County. This major facility has an Average Annual Design Flow of 1.2 MGD, Hydraulic Design Capacity of 3.0 MGD, and Organic Design Capacity of 5,200 lbs. BOD5/day. The treatment system is an SBR with the following treatment train: grinder → main pump station → fine screen → grit separator → three tank SBR → UV disinfection → discharge to Conemaugh River through Outfall 001. There is no assigned stormwater outfall from this facility. The facility receives flows from the below contributing municipalities:

TRIBUTARY INFORMATION				
		Type of Sewer System		
Municipalities Served	Flow Contribution (%)	Separate (%)	Combined (%)	Population
Adams Township	27	100		
Croyle Township	12.4	100		
Richland Township	24.3	100		
Summerhill Township	11.2	100		
Ehrenfeld Borough	2.3	100		
South Fork Borough	14.1	100		
Summerhill Borough	6.2	100		
Wilmore Borough	2.5	100		

The following wastewater treatment chemicals are used in the treatment plant:

Chemical Name	Purpose	Maximum Usage Rate	Units
Magnesium Hydroxide	Adjust Alkalinity when needed	18/day	pounds
Calcium Hypochlorite	control filamentous bacteria when needed	30/day	pounds
Phosphoric acid	nutrient balance(available but not used)		
Urea	available but not used		
Polymer	Flocculent for belt filter press aid	2/day	gallons

The facility receives sludge in previous year from the following sources:

Source Name	Gallons Received	% Solids	Dry Tons Received
Village of 42 STP	28,800		
Pleasant View Mobile Home Park STP	7,200	~1.42	~0.43
Meyersdale WTP	119,000	~1.16	~5.76
Allegiance Rehabilitation Center STP	10,800	2.84	~1.28
		Total:	108.29

Pepsi Bottling Company is the only significant non-categorical industrial user contributing to this facility. A pre-treatment permit is not issued by the permittee to this IU.

Biosolids management:

Currently the generated biosolids are aerobically digested, dewatered through belt filter press, and landfilled. A WQM permit was issued on March 2023 that authorized construction of an Autothermal Thermophilic Aerobic Digestion (ATAD)/Storage Nitrification Denitrification Reactor (SNDR) process to produce Class A Biosolids. A general permit, PAG078609 was issued on September 27, 2022 for beneficial land application of biosolids.

Compliance History

DMR Data for Outfall 001 (from February 1, 2022 to January 31, 2023)

Parameter	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22
Flow (MGD) Average Monthly	0.559	0.463	0.465	0.426	0.491	0.458	0.429	0.449	0.513	0.531	0.477	0.599
Flow (MGD) Daily Maximum	1.334	0.576	0.703	0.543	0.818	0.6	0.499	0.523	0.997	0.690	0.538	1.109
pH (S.U.) Minimum	6.89	6.83	7.17	7.05	7.11	7.06	6.93	7.29	7.11	7.04	7.08	7.01
pH (S.U.) Maximum	7.16	7.30	7.34	7.37	7.22	7.23	7.17	7.68	7.46	7.29	7.27	7.58
DO (mg/L) Minimum	7.82	7.58	8.02	7.83	7.48	6.88	6.12	6.84	8.03	8.57	7.78	9.0
CBOD5 (lbs/day) Average Monthly	< 57	40	< 26	< 21	< 22	< 23	32	37	< 34	45	43	56
CBOD5 (lbs/day) Weekly Average	< 105	50	29	29	28	30	43	43	53	55	52	70
CBOD5 (mg/L) Average Monthly	< 10	10	< 7	< 6	< 5	< 6	9	9	< 8	10	11	13
CBOD5 (mg/L) Weekly Average	< 11	12	7	8	8	8	12	11	11	12	14	18
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1550	1793	1560	1352	1845	2073	1495	1718	1347	1762	1786	2511
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	1826.5	2171.5	1828	1600	2542	3178.5	2039.5	2011.5	1740	2072.5	2306.5	4667
BOD5 (mg/L) Raw Sewage Influent Average Monthly	336	464	407	374	470	523	413	442	322	387	443	554
BOD5 (mg/L) Raw Sewage Influent Weekly Average	428	546.25	501.5	450	719	765.25	596.75	514.25	363.75	434.5	618	931
TSS (lbs/day) Average Monthly	63	45	31	< 20	< 22	< 22	< 35	< 45	< 34	46	39	59
TSS (lbs/day) Raw Sewage Influent Average Monthly	1648	1792	1261	1666	2129	2411	2248	1666	1420	1406	1903	2960
TSS (lbs/day) Raw Sewage Influent Weekly Average	2084	2239	1890.5	2646	2899	3202	3260	2435.5	1695.5	1746	4418	7887

TSS (lbs/day) Weekly Average	130	53	52	28	30	25	59	52	53	62	52	75
TSS (mg/L) Average Monthly	11	12	8	< 6	< 5	< 6	< 9	< 12	< 8	10	10	14
TSS (mg/L) Raw Sewage Influent Average Monthly	347	462	323	459	531	609	603	428	342	307	493	631
TSS (mg/L) Raw Sewage Influent Weekly Average	478	613	430	719	791	777	815.25	629.5	434.5	372.25	1228	1576
TSS (mg/L) Weekly Average	14	13	13	8	8	6	16	14	11	12	13	19
Fecal Coliform (No./100 ml) Geo Mean	< 8	18	< 7	9	21	28	41	161	49	28	> 40	> 230
Fecal Coliform (No./100 ml) IMAX	23	34	25.2	29.2	37	52	158.5	866.4	411	291	> 2420	> 2419.6
UV Transmittance (%) Minimum	62	62	60	61	63	60	53	53	55	55	60	58
Total Nitrogen (mg/L) Daily Maximum		7.564			< 5.270			< 6.553			16.483	
Ammonia (mg/L) Average Monthly	2	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.01	8	20	18
Ammonia (mg/L) IMAX	3.559	2.531	3.894	0.14	< 0.5	0.217	0.561	2.636	0.462	16.42	28.2	20.51
Total Phosphorus (mg/L) Daily Maximum		4.66			3.91			2.25			3.08	
Total Aluminum (mg/L) Daily Maximum		< 0.100			< 0.100			< 0.100			< 0.100	
Total Iron (mg/L) Daily Maximum		< 0.200			< 0.200			< 0.200			< 0.200	
Total Manganese (mg/L) Daily Maximum		< 0.0200			0.0299			< 0.0200			0.0582	
Bromide (mg/L) Average Monthly	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bromide (mg/L) Daily Maximum	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Compliance History

Effluent Violations for Outfall 001, from: March 1, 2022 To: January 31, 2023

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	03/31/22	Geo Mean	> 40	No./100 ml	2000	No./100 ml

Fecal Coliform	03/31/22	IMAX	> 2420	No./100 ml	10000	No./100 ml

Summary of Inspections:
March 23, 2022: CEI conducted. eDMR violation noted for fecal coliform.

May 27, 2021: CEI conducted. eDMR violation noted for fecal coliform. Noncompliance included failure to use an NIST thermometer.

February 26, 2020: CEI conducted. eDMR violation noted for fecal coliform.

Existing Effluent Limits and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Measured
CBOD5	250	375	XXX	25	38	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
TSS	300	450	XXX	30	45	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
UV light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	Report	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	12.0	XXX	24.0	2/week	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	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Iron, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Manganese, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Bromide	XXX	XXX	XXX	Report	Report Daily Max	XXX	2/week	24-Hr Composite

Other Comments: None

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.2
Latitude 40º 22' 8.14" **Longitude** -78º 48' 22.19"
Wastewater Description: Sewage Effluent

Basis for Effluent Limitations

In general, the Clean Water Act (CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

Technology-Based Limitations

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

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

Mass-Based Limits

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

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

Water Quality-Based Limitations

Model input data

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

- Discharge pH 7.17 (median July-Sep 2021- 2022, daily eDMR data)
- Discharge Temperature 25°C (Default per 391-2000-007)
- Discharge Hardness 97.7 mg/l (Application data)
- Stream pH 7.0 (Default data)
- Stream Temperature 25°C (Default)
- Stream Hardness 129 mg/l (Application data)

The following three nodes were used in modeling:

Node 1: At the outfall 001 on Little Conemaugh River (45815)
Elevation: 1447 ft (USGS National Map Advanced Viewer, 05/03/2023)

	Drainage Area:	159 mi^2 (StreamStat Version 3.0, 05/03/2023)
	River Mile Index:	11.28 (PA DEP eMapPA)
	Low Flow Yield:	0.1 cfs/mi^2
	Q_{7-10}:	16.2 cfs
	Discharge Flow:	1.2 MGD
Node 2:	At confluence with Bear Run (45845)	
	Elevation:	1415 ft (USGS National Map Advanced Viewer, 05/03/2023)
	Drainage Area:	162 mi^2 (StreamStat Version 3.0, 05/03/2023)
	River Mile Index:	9.9 (PA DEP eMapPA)
	Low Flow Yield:	0.1 cfs/mi^2
	Discharge Flow:	0.0 MGD
Node 3:	At confluence with Saltlick Run (45830)	
	Elevation:	1360 ft (USGS National Map Advanced Viewer, 05/03/2023)
	Drainage Area:	175 mi^2 (StreamStat Version 3.0, 05/03/2023)
	River Mile Index:	7.61 (PA DEP eMapPA)
	Low Flow Yield:	0.05 cfs/mi^2
	Discharge Flow:	0.0 MGD

WQM 7.0 Model

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and DO. The model simulates two basic processes. In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model was utilized for this permit renewal by using Q_{7-10} and current background water quality levels of the stream.

NH_3-N

WQM 7.0 suggested NH_3-N limit of 12 mg/l as Average Monthly Limit (AML) and 24.0 mg/l as IMAX limit during summer to protect water quality standards. These limits are the same as existing limits. Current limits will be carried over.

CBOD5

WQM 7.0 suggests CBOD5 limit of 25 mg/l which is the same as existing limit. Existing limit will be carried over.

DO

WQM 7.0 suggests minimum DO of 5.0 mg/l which is the model input value. The current permit has a minimum DO of 4.0 mg/l. Pa Code 25 § 93.7 requires a minimum DO of 5.0 mg/l. A review of last 12 months eDMR data indicated that the facility's discharge consistently had a minimum DO of >6.0 mg/l. More stringent 5.0 mg/l will be applied.

General Discussion on Toxics Management Spreadsheet (TMS)

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.

Output from the TMS is provided below:

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	50.3	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	422	AFC	Discharge Conc > 10% WQBEL (no RP)
Benzo(a)Anthracene	0.0005	0.0007	0.046	0.072	0.11	µg/L	0.046	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Butyl Benzyl Phthalate	0.01	0.015	0.96	1.49	2.39	µg/L	0.96	THH	Discharge Conc ≥ 50% WQBEL (RP)

Each of the pollutants is discussed below:

Total Copper:
TMS suggests monitoring requirements for Total Copper based on a model input value of 16.4 ug/l, maximum of three sample results. A quarterly monitoring will be added in this renewal.

Total Zinc:
TMS suggests monitoring requirements for Total Zinc based on a model input value of 182 ug/l, maximum of three sample results. A quarterly monitoring will be added in this renewal.

Benzo(a)Anthracene:
TMS suggests concentration-based AML of 0.046 ug/l, MDL of 0.072 ug/l, IMAX of 0.11 ug/l, mass-based AML of 0.0005 lbs./day, and MDL of 0.0007 lbs./day. These values were calculated from model input value of 0.28 ug/l, maximum of three sample results. Since this is a new parameter with limits requirement, it'll be added in pre-draft survey for permittee's input. Based on the responses on the returned pre-draft survey, a compliance schedule will be provided in the final permit to meet the final WQBEL.

Butyl Benzyle Phthalate:
TMS suggests concentration-based AML of 0.96 ug/l, MDL of 1.49 ug/l, IMAX of 2.39 ug/l, mass-based AML of 0.01 lbs./day, and MDL of 0.015 lbs./day. These values were calculated from model input value of 0.48 ug/l, maximum of three sample results. Since this is a new parameter with limits requirement, it'll be added in pre-draft survey for permittee's input. Based on the responses on the returned pre-draft survey, a compliance schedule will be provided in the final permit to meet the final WQBEL.

TMDL parameters (Total Aluminum, Total Iron, and Total Manganese):
No RP was demonstrated for the TMDL parameters; therefore, existing quarterly monitoring will be continued.

Total Bromide:
Historically PADEP compared the effluent concentration of Total Bromide with a threshold of >1.0 mg/l for facilities with flow greater than 0.1 MGD or 10 mg/l for flows less than 0.1 MGD. if this criterion is met, a monitoring requirement was added in the permit. Total Bromide was a special parameter along with TDS, Sulfate, Chloride, and 1,4-Dioxane. Since PADEP has more than 7-years' worth of data on these special parameters, a monitoring is no longer implemented unless required by other agencies, e.g. DRBC. Therefore, it is recommended that the existing monitoring requirements to be removed for Total Bromide.

Additional Consideration:

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

E. Coli:
Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends monthly E. Coli monitoring for 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), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly, 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 300 lbs./day and 450 lbs./day respectively, which are the same as were in existing permit and will be carried over.

UV Disinfection:
PADEP's SOP BCW-PMT-033 recommends UV parameter monitoring where UV is used as a method of disinfection, with the same frequency as would be if Chlorine is used for disinfection. The current permit has UV Transmittance monitoring in % which will be carried over.

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

Best Professional Judgement (BPJ):
Total Phosphorus:
The current permit has monitoring requirements for Total Phosphorus which is consistent with Pa Code 25 Ch. 92a.61 and will be carried over.

Total Nitrogen: Pa Code 25 § 92a.61 requires monitoring, at a minimum, for all sewage facilities. Existing quarterly monitoring will be continued.

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

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

Stormwater Outfalls:
The current permit has listed two stormwater outfalls with PPC and BMP requirements in Part C of the permit. These outfalls are:

Outfall No.	Area Drained (ft^2)	Latitude	Longitude	Description
002	65,000	40° 22' 04"	78° 48' 20"	Treatment plant yard
003	22,000	40° 22' 02"	78° 48' 22"	Treatment plant yard

The current Part C conditions will be continued in this renewal.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **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:

The dilution series used for the tests was: 100%, 60%, 30%, 10%, and 5%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 35.3%.

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
9/3/2019	Pass	Pass	Pass	Pass
8/31/2020	Pass	Pass	Pass	Pass
7/26/2021	Pass	Pass	Pass	Pass
8/16/2022	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): **0.425** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

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

[(1.2 MGD x 1.547) / ((16.2 cfs x 0.425) + (1.2 MGD x 1.547))] x 100 = **21.2%**

Is IWCa < 1%? ☐ **YES** ☒ **NO** **(YES - Acute Tests Required OR NO - Chronic Tests 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**

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = IWCa / 0.3 = **%**

2b. Determine Target IWCc (If Chronic Tests Required)

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

[(1.2 MGD x 1.547) / ((16.2 cfs x 1) + (1.2 MGD x 1.547))] x 100 = **10.2%**

3. Determine Dilution Series

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

Dilution Series = 100%, 60%, 30%, 10%, and 8%.

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 001, Effective Period: Permit Effective Date through End of Interim Period 1.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Benzo(a)Anthracene (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Butyl Benzyl Phthalate (ug/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: At Outfall 001

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 001, Effective Period: End of Interim Period 1 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 Quarterly	Daily Maximum	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Benzo(a)Anthracene (ug/L)	0.0005	0.0007	XXX	0.046	0.072	0.11	1/quarter	24-Hr Composite
Butyl Benzyl Phthalate (ug/L)	0.01	0.015	XXX	0.96	1.49	2.39	1/quarter	24-Hr Composite

Compliance Sampling Location: At Outfall 001

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Measured
Carbonaceous Biochemical Oxygen Demand (CBOD5)	250	375	XXX	25	38	50	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	300	450	XXX	30	45	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	Report	2/week	24-Hr Composite

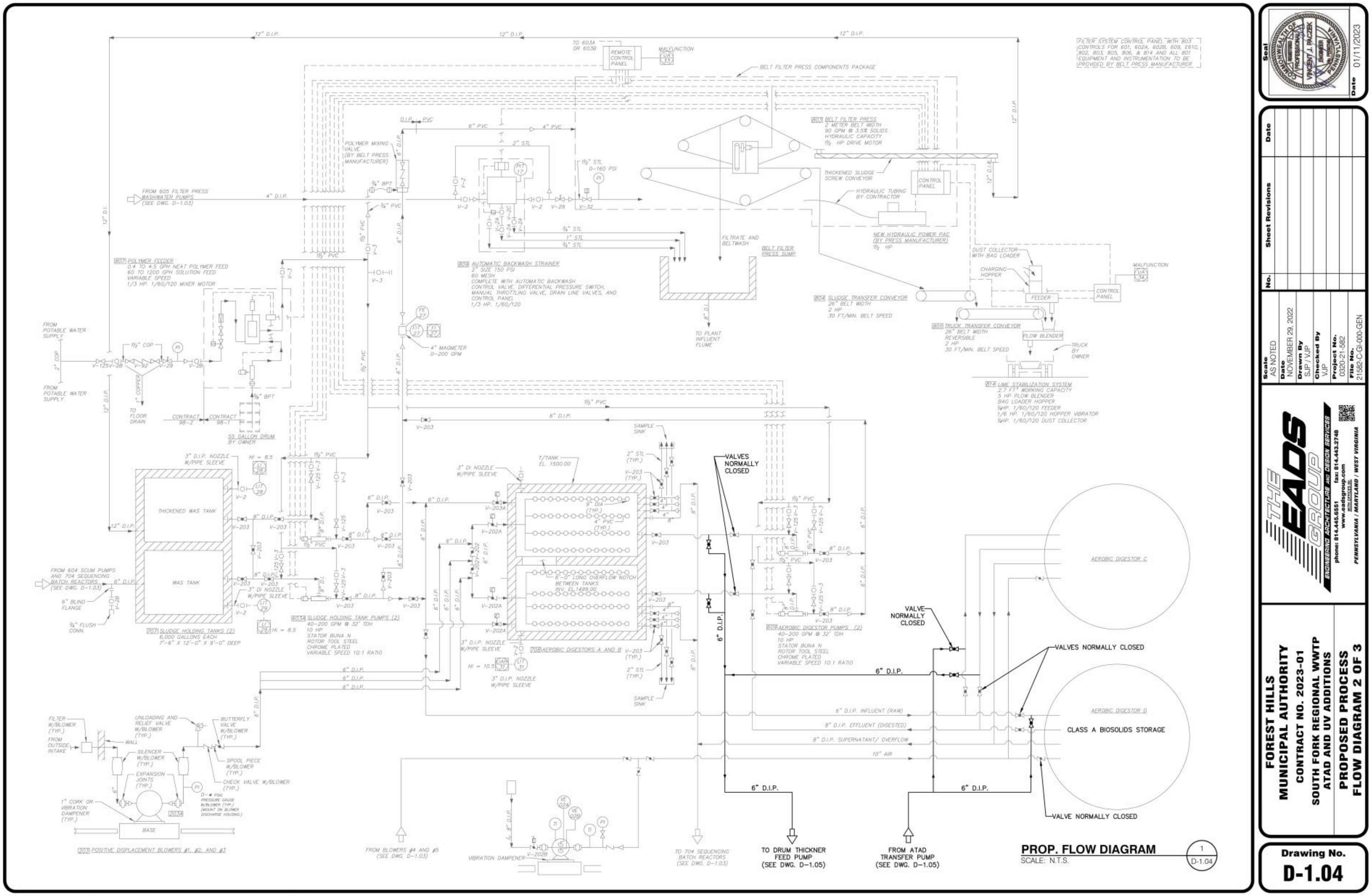
Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	12.0	XXX	24.0	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Copper, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Iron, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Manganese, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Zinc, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: At Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:



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StreamStats at Outfall 001

PA0216941 at 001

Region ID: PA
Workspace ID: PA20230504022532753000
Clicked Point (Latitude, Longitude): 40.36890, -78.80588
Time: 2023-05-03 22:25:53 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	159	square miles
ELEV	Mean Basin Elevation	2109	feet
PRECIP	Mean Annual Precipitation	47	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (159 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	159	square miles	2.33	1720
ELEV	Mean Basin Elevation	2109	feet	898	2700
PRECIP	Mean Annual Precipitation	47	inches	38.7	47.9

Low-Flow Statistics Flow Report [100.0 Percent (159 square miles) Low Flow Region 3]

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	27.5	ft^3/s	43	43
30 Day 2 Year Low Flow	37.4	ft^3/s	38	38
7 Day 10 Year Low Flow	16.2	ft^3/s	54	54

Permit No. PA0216941

StreamStats at node 2

PA0216941 at 002

Region ID: PA
Workspace ID: PA20230504022828061000
Clicked Point (Latitude, Longitude): 40.36123, -78.82626
Time: 2023-05-03 22:28:49 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	162	square miles
ELEV	Mean Basin Elevation	2106	feet
PRECIP	Mean Annual Precipitation	47	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (162 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	162	square miles	2.33	1720
ELEV	Mean Basin Elevation	2106	feet	898	2700
PRECIP	Mean Annual Precipitation	47	inches	38.7	47.9

Low-Flow Statistics Flow Report [100.0 Percent (162 square miles) Low Flow Region 3]

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	28	ft^3/s	43	43
30 Day 2 Year Low Flow	38.1	ft^3/s	38	38
7 Day 10 Year Low Flow	16.5	ft^3/s	54	54

Permit No. PA0216941

WQM 7.0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18E	45815	LITTLE CONEMAUGH RIVER	11.280	1447.00	159.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
S Fork Reg WWTP	PA0216941	1.2000	1.2000	1.2000	0.000	25.00	7.17

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	12.00	0.00	0.00	0.70

Permit No. PA0216941

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
18E	45815	LITTLE CONEMAUGH RIVER	9.900	1415.00	162.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

Permit No. PA0216941

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18E	45815	LITTLE CONEMAUGH RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
11.280	15.90	0.00	15.90	1.8564	0.00439	.839	62.04	73.97	0.34	0.247	25.00	7.01
Q1-10 Flow												
11.280	10.18	0.00	10.18	1.8564	0.00439	NA	NA	NA	0.27	0.307	25.00	7.02
Q30-10 Flow												
11.280	21.62	0.00	21.62	1.8564	0.00439	NA	NA	NA	0.40	0.211	25.00	7.01

Permit No. PA0216941

WQM 7.0 Modeling Specifications

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

Permit No. PA0216941

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18E	45815	LITTLE CONEMAUGH 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
11.280	S Fork Reg WWT	6.66	24	6.66	24	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
11.280	S Fork Reg WWT	1.33	12	1.33	12	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
11.28	S Fork Reg WWTP	25	25	12	12	5	5	0	0

Permit No. PA0216941

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18E	45815	LITTLE CONEMAUGH RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
11.280	1.200	25.000	7.015
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
62.041	0.839	73.974	0.341
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.40	0.804	1.25	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.904	11.515	Tsivoglou	5
Reach Travel Time (days)			
0.247			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.025	4.30	1.22	7.54
0.049	4.19	1.19	7.54
0.074	4.09	1.16	7.54
0.099	3.99	1.13	7.53
0.124	3.89	1.10	7.49
0.148	3.79	1.08	7.48
0.173	3.70	1.05	7.47
0.198	3.61	1.02	7.47
0.222	3.52	1.00	7.48
0.247	3.43	0.97	7.49

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WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18E	45815	LITTLE CONEMAUGH RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
11.280	S Fork Reg WWTP	PA0216941	1.200	CBOD5	25		
				NH3-N	12	24	
				Dissolved Oxygen			5

Permit No. PA0216941

Toxics Management Spreadsheet V1.4

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: S Fork Regional WWTP NPDES Permit No.: PA0216941 Outfall No.: 001

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.2	97.7	7.227						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		30.8									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	2.5									
	Total Barium	µg/L		20.4									
	Total Beryllium	µg/L	<	0.676									
	Total Boron	µg/L		273									
	Total Cadmium	µg/L	<	0.123									
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L	<	0.4									
	Total Copper	µg/L		16.4									
	Free Cyanide	µg/L		6									
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		70									
	Total Iron	µg/L		90									
	Total Lead	µg/L		0.66									
	Total Manganese	µg/L		34.2									
	Total Mercury	µg/L	<	0.104									
	Total Nickel	µg/L		2.75									
	Total Phenols (Phenolics) (PWS)	µg/L	<	4									
	Total Selenium	µg/L	<	2.5									
	Total Silver	µg/L	<	0.274									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		182									
	Total Molybdenum	µg/L		8.58									
	Acrolein	µg/L	<	1.95									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.51									
	Benzene	µg/L	<	0.43									
	Bromoform	µg/L	<	0.34									
	Carbon Tetrachloride	µg/L	<	0.51									

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Group 3	Chlorobenzene	µg/L		0.21										
	Chlorodibromomethane	µg/L	<	0.39										
	Chloroethane	µg/L	<	0.42										
	2-Chloroethyl Vinyl Ether	µg/L	<	4										
	Chloroform	µg/L		0.89										
	Dichlorobromomethane	µg/L	<	0.32										
	1,1-Dichloroethane	µg/L	<	0.42										
	1,2-Dichloroethane	µg/L	<	0.39										
	1,1-Dichloroethylene	µg/L	<	0.33										
	1,2-Dichloropropane	µg/L	<	0.42										
	1,3-Dichloropropylene	µg/L	<	0.59										
	1,4-Dioxane	µg/L	<	3										
	Ethylbenzene	µg/L	<	0.27										
	Methyl Bromide	µg/L	<	0.46										
	Methyl Chloride	µg/L	<	0.36										
	Methylene Chloride	µg/L	<	0.45										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.36										
	Tetrachloroethylene	µg/L	<	0.39										
	Toluene	µg/L	<	0.33										
	1,2-trans-Dichloroethylene	µg/L	<	0.39										
	1,1,1-Trichloroethane	µg/L	<	0.38										
	1,1,2-Trichloroethane	µg/L	<	0.24										
	Trichloroethylene	µg/L	<	0.46										
	Vinyl Chloride	µg/L	<	0.46										
Group 4	2-Chlorophenol	µg/L	<	0.13										
	2,4-Dichlorophenol	µg/L	<	0.25										
	2,4-Dimethylphenol	µg/L	<	0.26										
	4,6-Dinitro-o-Cresol	µg/L	<	0.9										
	2,4-Dinitrophenol	µg/L	<	0.86										
	2-Nitrophenol	µg/L	<	0.25										
	4-Nitrophenol	µg/L	<	0.19										
	p-Chloro-m-Cresol	µg/L	<	0.4										
	Pentachlorophenol	µg/L	<	0.97										
	Phenol	µg/L	<	0.25										
	2,4,6-Trichlorophenol	µg/L	<	0.24										
Group 5	Acenaphthene	µg/L	<	0.26										
	Acenaphthylene	µg/L	<	0.22										
	Anthracene	µg/L		0.16										
	Benzidine	µg/L	<	0.35										
	Benzo(a)Anthracene	µg/L		0.28										
	Benzo(a)Pyrene	µg/L	<	0.29										
	3,4-Benzofluoranthene	µg/L	<	0.31										
	Benzo(ghi)Perylene	µg/L	<	0.32										
	Benzo(k)Fluoranthene	µg/L	<	0.4										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.15										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.25										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.34										
	Bis(2-Ethylhexyl)Phthalate	µg/L		0.83										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.19										
	Butyl Benzyl Phthalate	µg/L		0.48										
	2-Chloronaphthalene	µg/L	<	0.28										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.29										
	Chrysene	µg/L	<	0.45										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.28										
	1,2-Dichlorobenzene	µg/L	<	0.32										
	1,3-Dichlorobenzene	µg/L	<	0.17										
	1,4-Dichlorobenzene	µg/L	<	0.15										
	3,3-Dichlorobenzidine	µg/L	<	0.13										
	Diethyl Phthalate	µg/L	<	0.27										
	Dimethyl Phthalate	µg/L	<	0.23										
	Di-n-Butyl Phthalate	µg/L	<	0.29										
	2,4-Dinitrotoluene	µg/L	<	0.77										
	2,6-Dinitrotoluene	µg/L	<	0.32										
	Di-n-Octyl Phthalate	µg/L	<	0.28										

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	1,2-Diphenylhydrazine	µg/L	<	0.2										
	Fluoranthene	µg/L	<	0.35										
	Fluorene	µg/L	<	0.25										
	Hexachlorobenzene	µg/L	<	0.25										
	Hexachlorobutadiene	µg/L	<	0.27										
	Hexachlorocyclopentadiene	µg/L	<	0.22										
	Hexachloroethane	µg/L	<	0.26										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.25										
	Isophorone	µg/L	<	0.23										
	Naphthalene	µg/L	<	0.25										
	Nitrobenzene	µg/L	<	0.26										
	n-Nitrosodimethylamine	µg/L	<	0.4										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.31										
	n-Nitrosodiphenylamine	µg/L	<	0.27										
	Phenanthrene	µg/L	<	0.21										
	Pyrene	µg/L		0.25										
	1,2,4-Trichlorobenzene	µg/L	<	0.17										
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

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Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Little Conemaugh River** No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	045815	11.28	1447	159			Yes
End of Reach 1	045815	9.9	1415	162			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	11.28	0.1										129	7		
End of Reach 1	9.9	0.1													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	11.28														
End of Reach 1	9.9														

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ *AFC* CCT (min): 15 PMF: 0.425 Analysis Hardness (mg/l): 122.25 Analysis pH: 7.04

Pollutants	Stream Conc	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	3,479	
Total Antimony	0	0		0	1,100	1,100	5,103	
Total Arsenic	0	0		0	340	340	1,577	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	97,412	
Total Boron	0	0		0	8,100	8,100	37,573	
Total Cadmium	0	0		0	2.448	2.62	12.1	Chem Translator of 0.936 applied
Hexavalent Chromium	0	0		0	16	16.3	75.6	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	441	
Total Copper	0	0		0	16.240	16.9	78.5	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	102	
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	80.317	105	489	Chem Translator of 0.762 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	7.64	Chem Translator of 0.85 applied
Total Nickel	0	0		0	554.989	556	2,580	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.545	5.35	24.8	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	302	
Total Zinc	0	0		0	138.928	142	659	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	13.9	
Acrylonitrile	0	0		0	650	650	3,015	
Benzene	0	0		0	640	640	2,969	
Bromoform	0	0		0	1,800	1,800	8,350	
Carbon Tetrachloride	0	0		0	2,800	2,800	12,988	
Chlorobenzene	0	0		0	1,200	1,200	5,566	

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Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	83,496	
Chloroform	0	0		0	1,900	1,900	8,814	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	69,580	
1,1-Dichloroethylene	0	0		0	7,500	7,500	34,790	
1,2-Dichloropropane	0	0		0	11,000	11,000	51,026	
1,3-Dichloropropylene	0	0		0	310	310	1,438	
Ethylbenzene	0	0		0	2,900	2,900	13,452	
Methyl Bromide	0	0		0	550	550	2,551	
Methyl Chloride	0	0		0	28,000	28,000	129,883	
Methylene Chloride	0	0		0	12,000	12,000	55,664	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	4,639	
Tetrachloroethylene	0	0		0	700	700	3,247	
Toluene	0	0		0	1,700	1,700	7,886	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	31,543	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	13,916	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	15,772	
Trichloroethylene	0	0		0	2,300	2,300	10,669	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	2,598	
2,4-Dichlorophenol	0	0		0	1,700	1,700	7,886	
2,4-Dimethylphenol	0	0		0	660	660	3,062	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	371	
2,4-Dinitrophenol	0	0		0	660	660	3,062	
2-Nitrophenol	0	0		0	8,000	8,000	37,109	
4-Nitrophenol	0	0		0	2,300	2,300	10,669	
p-Chloro-m-Cresol	0	0		0	160	160	742	
Pentachlorophenol	0	0		0	9.080	9.08	42.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	2,134	
Acenaphthene	0	0		0	83	83.0	385	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	1,392	
Benzo(a)Anthracene	0	0		0	0.5	0.5	2.32	
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	139,161	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	20,874	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	1,252	
Butyl Benzyl Phthalate	0	0		0	140	140	649	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	3,804	
1,3-Dichlorobenzene	0	0		0	350	350	1,624	

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1,4-Dichlorobenzene	0	0		0	730	730	3,386	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	18,555	
Dimethyl Phthalate	0	0		0	2,500	2,500	11,597	
Di-n-Butyl Phthalate	0	0		0	110	110	510	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	7,422	
2,6-Dinitrotoluene	0	0		0	990	990	4,592	
1,2-Diphenylhydrazine	0	0		0	15	15.0	69.6	
Fluoranthene	0	0		0	200	200	928	
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	46.4	
Hexachlorocyclopentadiene	0	0		0	5	5.0	23.2	
Hexachloroethane	0	0		0	60	60.0	278	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	46,387	
Naphthalene	0	0		0	140	140	649	
Nitrobenzene	0	0		0	4,000	4,000	18,555	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	78,858	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	1,392	
Phenanthrene	0	0		0	5	5.0	23.2	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	603	

☑ *CFC* CCT (min): 83.110 PMF: 1 Analysis Hardness (mg/l): 125.73 Analysis pH: 7.02

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	2,104	
Total Arsenic	0	0		0	150	150	1,435	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	39,216	
Total Boron	0	0		0	1,600	1,600	15,304	
Total Cadmium	0	0		0	0.288	0.32	3.07	Chem Translator of 0.899 applied
Hexavalent Chromium	0	0		0	10	10.4	99.4	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	182	
Total Copper	0	0		0	10.891	11.3	109	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	49.7	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	14,347	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.226	4.26	40.7	Chem Translator of 0.758 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	8.66	Chem Translator of 0.85 applied
Total Nickel	0	0		0	63.121	63.3	606	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	47.7	Chem Translator of 0.922 applied

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Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	124	
Total Zinc	0	0		0	143.430	145	1,391	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	28.7	
Acrylonitrile	0	0		0	130	130	1,243	
Benzene	0	0		0	130	130	1,243	
Bromoform	0	0		0	370	370	3,539	
Carbon Tetrachloride	0	0		0	560	560	5,356	
Chlorobenzene	0	0		0	240	240	2,296	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	33,477	
Chloroform	0	0		0	390	390	3,730	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	29,651	
1,1-Dichloroethylene	0	0		0	1,500	1,500	14,347	
1,2-Dichloropropane	0	0		0	2,200	2,200	21,043	
1,3-Dichloropropylene	0	0		0	61	61.0	583	
Ethylbenzene	0	0		0	580	580	5,548	
Methyl Bromide	0	0		0	110	110	1,052	
Methyl Chloride	0	0		0	5,500	5,500	52,607	
Methylene Chloride	0	0		0	2,400	2,400	22,956	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	2,009	
Tetrachloroethylene	0	0		0	140	140	1,339	
Toluene	0	0		0	330	330	3,156	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	13,391	
1,1,1-Trichloroethane	0	0		0	610	610	5,835	
1,1,2-Trichloroethane	0	0		0	680	680	6,504	
Trichloroethylene	0	0		0	450	450	4,304	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	1,052	
2,4-Dichlorophenol	0	0		0	340	340	3,252	
2,4-Dimethylphenol	0	0		0	130	130	1,243	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	153	
2,4-Dinitrophenol	0	0		0	130	130	1,243	
2-Nitrophenol	0	0		0	1,600	1,600	15,304	
4-Nitrophenol	0	0		0	470	470	4,496	
p-Chloro-m-Cresol	0	0		0	500	500	4,782	
Pentachlorophenol	0	0		0	6.966	6.97	66.6	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	870	
Acenaphthene	0	0		0	17	17.0	163	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	564	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.96	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	

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Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0	0	6,000	6,000	57,390	
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0	0	910	910	8,704	
4-Bromophenyl Phenyl Ether	0	0	0	54	54.0	517	
Butyl Benzyl Phthalate	0	0	0	35	35.0	335	
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A	
Chrysene	0	0	0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0	0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0	0	160	160	1,530	
1,3-Dichlorobenzene	0	0	0	69	69.0	660	
1,4-Dichlorobenzene	0	0	0	150	150	1,435	
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A	
Diethyl Phthalate	0	0	0	800	800	7,652	
Dimethyl Phthalate	0	0	0	500	500	4,782	
Di-n-Butyl Phthalate	0	0	0	21	21.0	201	
2,4-Dinitrotoluene	0	0	0	320	320	3,061	
2,6-Dinitrotoluene	0	0	0	200	200	1,913	
1,2-Diphenylhydrazine	0	0	0	3	3.0	28.7	
Fluoranthene	0	0	0	40	40.0	383	
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	19.1	
Hexachlorocyclopentadiene	0	0	0	1	1.0	9.56	
Hexachloroethane	0	0	0	12	12.0	115	
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A	
Isophorone	0	0	0	2,100	2,100	20,086	
Naphthalene	0	0	0	43	43.0	411	
Nitrobenzene	0	0	0	810	810	7,748	
n-Nitrosodimethylamine	0	0	0	3,400	3,400	32,521	
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0	0	59	59.0	564	
Phenanthrene	0	0	0	1	1.0	9.56	
Pyrene	0	0	0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0	0	26	26.0	249	

☑ *THH* CCT (min): 83.110 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	53.6	
Total Arsenic	0	0		0	10	10.0	95.6	
Total Barium	0	0		0	2,400	2,400	22,956	
Total Boron	0	0		0	3,100	3,100	29,651	
Total Cadmium	0	0		0	N/A	N/A	N/A	

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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	38.3	
Dissolved Iron	0	0		0	300	300	2,869	
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	9,565	
Total Mercury	0	0		0	0.050	0.05	0.48	
Total Nickel	0	0		0	610	610	5,835	
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	2.3	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	28.7	
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	956	
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	54.5	
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	316	
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	650	
Methyl Bromide	0	0		0	100	100.0	956	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-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	545	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	956	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	95,650	
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	287	
2,4-Dichlorophenol	0	0		0	10	10.0	95.6	
2,4-Dimethylphenol	0	0		0	100	100.0	956	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	19.1	
2,4-Dinitrophenol	0	0		0	10	10.0	95.6	

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2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	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	38,260	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	670	
Anthracene	0	0		0	300	300	2,869	
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-Chloroisopropyl)Ether	0	0		0	200	200	1,913	
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	0.96	
2-Chloronaphthalene	0	0		0	800	800	7,652	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	9,565	
1,3-Dichlorobenzene	0	0		0	7	7.0	67.0	
1,4-Dichlorobenzene	0	0		0	300	300	2,869	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	5,739	
Dimethyl Phthalate	0	0		0	2,000	2,000	19,130	
Di-n-Butyl Phthalate	0	0		0	20	20.0	191	
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	191	
Fluorene	0	0		0	50	50.0	478	
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	38.3	
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	325	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	95.6	
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	191	

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1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.67	

☑ *CRL* CCT (min): 35.224 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
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	2.75	
Benzene	0	0		0	0.58	0.58	26.6	
Bromoform	0	0		0	7	7.0	321	
Carbon Tetrachloride	0	0		0	0.4	0.4	18.4	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	36.7	
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	43.6	
1,2-Dichloroethane	0	0		0	9.9	9.9	455	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	41.3	
1,3-Dichloropropylene	0	0		0	0.27	0.27	12.4	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
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	918	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	9.18	

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Tetrachloroethylene	0	0		0	10	10.0	459	
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	25.3	
Trichloroethylene	0	0		0	0.6	0.6	27.5	
Vinyl Chloride	0	0		0	0.02	0.02	0.92	
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	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	1.38	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	68.9	
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	0.005	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.046	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.005	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.046	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.46	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	1.38	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	14.7	
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	5.51	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.005	
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	2.3	
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	2.3	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	2.3	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	1.38	
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	0.004	

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Hexachlorobutadiene	0	0		0	0.01	0.01	0.46	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	4.59	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.046	
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	0.032	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.23	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	152	
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: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	50.3	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	422	AFC	Discharge Conc > 10% WQBEL (no RP)
Benzo(a)Anthracene	0.0005	0.0007	0.046	0.072	0.11	µg/L	0.046	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Butyl Benzyl Phthalate	0.01	0.015	0.96	1.49	2.39	µg/L	0.96	THH	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Aluminum	2,230	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	22,956	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	15,304	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Hexavalent Chromium	N/A	N/A	Discharge Conc < TQL
Total Cobalt	182	µg/L	Discharge Conc < TQL
Free Cyanide	38.3	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS

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Dissolved Iron	2,869	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	14,347	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	40.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	9,565	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.48	µg/L	Discharge Conc < TQL
Total Nickel	606	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	47.7	µg/L	Discharge Conc < TQL
Total Silver	15.9	µg/L	Discharge Conc < TQL
Total Thallium	2.3	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	8.92	µg/L	Discharge Conc < TQL
Acrylonitrile	2.75	µg/L	Discharge Conc < TQL
Benzene	26.6	µg/L	Discharge Conc < TQL
Bromoform	321	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	18.4	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	956	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	36.7	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	33,477	µg/L	Discharge Conc < TQL
Chloroform	54.5	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	43.6	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	455	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	316	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	41.3	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	12.4	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	650	µg/L	Discharge Conc < TQL
Methyl Bromide	956	µg/L	Discharge Conc < TQL
Methyl Chloride	52,607	µg/L	Discharge Conc < TQL
Methylene Chloride	918	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	9.18	µg/L	Discharge Conc < TQL
Tetrachloroethylene	459	µg/L	Discharge Conc < TQL
Toluene	545	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	956	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	5,835	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	25.3	µg/L	Discharge Conc < TQL
Trichloroethylene	27.5	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.92	µg/L	Discharge Conc < TQL
2-Chlorophenol	287	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	95.6	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	956	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	19.1	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	95.6	µg/L	Discharge Conc < TQL
2-Nitrophenol	15,304	µg/L	Discharge Conc < TQL

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4-Nitrophenol	4,496	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	476	µg/L	Discharge Conc < TQL
Pentachlorophenol	1.38	µg/L	Discharge Conc < TQL
Phenol	38,260	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	68.9	µg/L	Discharge Conc < TQL
Acenaphthene	163	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	2,869	µg/L	Discharge Conc ≤ 25% WQBEL
Benzidine	0.005	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.005	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.046	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.46	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	1.38	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	1,913	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	14.7	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	517	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	7,652	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	5.51	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.005	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,530	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	67.0	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,435	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	2.3	µg/L	Discharge Conc < TQL
Diethyl Phthalate	5,739	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	4,782	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	191	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	2.3	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	2.3	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	1.38	µg/L	Discharge Conc < TQL
Fluoranthene	191	µg/L	Discharge Conc < TQL
Fluorene	478	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.004	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.46	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	9.56	µg/L	Discharge Conc < TQL
Hexachloroethane	4.59	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.046	µg/L	Discharge Conc < TQL
Isophorone	325	µg/L	Discharge Conc < TQL
Naphthalene	411	µg/L	Discharge Conc < TQL
Nitrobenzene	95.6	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.032	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.23	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	152	µg/L	Discharge Conc < TQL

Phenanthrene	9.56	µg/L	Discharge Conc < TQL
Pyrene	191	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	0.67	µg/L	Discharge Conc < TQL

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Whole Effluent Toxicity (WET) Analysis Spreadsheet

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.36
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: S. Fork Regional WWTP

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Replicate No.	Test Completion Date 9/3/2019 Control	TIWC
1	16	36
2	29	33
3	25	24
4	33	20
5	37	30
6	28	26
7	35	20
8	30	27
9	32	28
10	30	22
11		
12		
13		
14		
15		
Mean	29.500	26.600
Std Dev.	5.874	5.358
# Replicates	10	10
T-Test Result	2.0401	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 8/31/2020 Control	TIWC
1	34	32
2	29	32
3	31	36
4	34	34
5	27	35
6	30	31
7	28	35
8	32	32
9	28	30
10	30	32
11		
12		
13		
14		
15		
Mean	30.300	32.900
Std Dev.	2.452	1.969
# Replicates	10	10
T-Test Result	11.9425	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 7/26/2021 Control	TIWC
1	32	34
2	33	32
3	30	32
4	33	32
5	30	28
6	0	32
7	30	32
8	31	32
9	32	33
10	28	32
11		
12		
13		
14		
15		
Mean	27.900	31.900
Std Dev.	9.927	1.524
# Replicates	10	10
T-Test Result	4.5668	
Deg. of Freedom	13	
Critical T Value	0.8702	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 8/16/2022 Control	TIWC
1	22	26
2	19	30
3	21	28
4	11	0
5	25	24
6	18	21
7	23	18
8	28	22
9	13	28
10	23	19
11		
12		
13		
14		
15		
Mean	20.300	21.600
Std Dev.	5.229	8.592
# Replicates	10	10
T-Test Result	2.1345	
Deg. of Freedom	14	
Critical T Value	0.8681	
Pass or Fail	PASS	

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DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.36
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: S. Fork Regional WWTP

Permit No.: PA0216941

Test Completion Date: 9/3/2019

Replicate No.	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
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Test Completion Date: 8/31/2020

Replicate No.	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
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Test Completion Date: 7/26/2021

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	0	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	

Test Completion Date: 8/16/2022

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	0
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	0.900
Std Dev.	0.000	0.316
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

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DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.36
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: S. Fork Regional WWTP

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Replicate No.	Test Completion Date 9/3/2019 Control	TIWC
1	1	1
2	0.9	0.8
3	1	0.8
4	0.9	0.7
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.950	0.825
Std Dev.	0.058	0.126
# Replicates	4	4

T-Test Result	4.7124
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	PASS

Replicate No.	Test Completion Date 9/1/2020 Control	TIWC
1	0.6	0.6
2	0.8	1
3	0.9	1
4	1	0.9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.825	0.875
Std Dev.	0.171	0.189
# Replicates	4	4

T-Test Result	3.8197
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Replicate No.	Test Completion Date 7/27/2021 Control	TIWC
1	0.9	0.9
2	0.9	1
3	0.9	1
4	0.8	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.875	0.975
Std Dev.	0.050	0.050
# Replicates	4	4

T-Test Result	17.0005
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Replicate No.	Test Completion Date 8/16/2022 Control	TIWC
1	1	0.8
2	0.9	0.9
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	0.925
Std Dev.	0.050	0.096
# Replicates	4	4

T-Test Result	7.8920
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	PASS

Permit No. PA0216941

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.36
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: S. Fork Regional WWTP

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Replicate No.	Test Completion Date: 9/3/2019 Control	TIWC
1	0.349	0.312
2	0.34	0.389
3	0.41	0.453
4	0.237	0.49
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.334	0.411
Std Dev.	0.072	0.078
# Replicates	4	4
T-Test Result	3.3850	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 9/1/2020 Control	TIWC
1	0.22	0.241
2	0.238	0.329
3	0.327	0.351
4	0.353	0.319
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.285	0.310
Std Dev.	0.065	0.048
# Replicates	4	4
T-Test Result	2.8193	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 7/27/2021 Control	TIWC
1	0.352	0.317
2	0.328	0.383
3	0.331	0.342
4	0.309	0.369
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.330	0.353
Std Dev.	0.018	0.029
# Replicates	4	4
T-Test Result	6.5527	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 8/16/2022 Control	TIWC
1	0.34	0.3089
2	0.315	0.349
3	0.345	0.333
4	0.335	0.364
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.334	0.339
Std Dev.	0.013	0.024
# Replicates	4	4
T-Test Result	6.9206	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

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WET Summary and Evaluation

Facility Name	S. Fork Regional WWTP
Permit No.	PA0216941
Design Flow (MGD)	1.2
Q_{7-10} Flow (cfs)	16.2
PMF_a	0.425
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/3/19	8/31/20	7/26/21	8/16/22
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/3/19	8/31/20	7/26/21	8/16/22
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/3/19	9/1/20	7/27/21	8/16/22
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/3/19	9/1/20	7/27/21	8/16/22
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**10** % Effluent
Dilution Series	**5, 10, 30, 60, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	