pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0024180**
Facility Type	**Municipal**	APS ID	**1109829**
Major / Minor	**Major**	Authorization ID	**1477498**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Berks Montgomery Municipal Authority**	Facility Name	**Berks Montgomery Swamp Creek STP**
Applicant Address	136 Municipal Drive PO Box 370	Facility Address	136 Municipal Drive
	Gilbertsville, PA 19525-9463		Gilbertsville, PA 19525
Applicant Contact	Keith Corson	Facility Contact	Lew Christy
Applicant Phone	(610) 367-1462	Facility Phone	(610) 367-1463
Client ID	74604	Site ID	451871
Ch 94 Load Status	Projected Hydraulic Overload	Municipality	Douglass Township
Connection Status	Self Imposed Connection Prohibition	County	Montgomery
Date Application Received	March 4, 2024	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility
Purpose of Application	Renewal		

Summary of Review

The applicant requests approval for the renewal of a National Pollutant Discharge Elimination System (NPDES) permit to discharge an average annual flow of 2.3 MGD of treated sewage from Swamp Creek STP to Swamp Creek. to Schuylkill River located in Plymouth Township, Montgomery County. The receiving stream, Swamp creek is located in 3-E – Perkiomen Watershed. The facility serves the communities of Douglass Township (Montgomery), Colebrookdale Township (Berks), New Hanover Twp. and the Borough of Bechtelsville (Berks).

The STP consists of three (3) separate treatment trains. The raw sewage is received at the STP from two directions. The one side is collected through a combination of gravity collection and pump station discharge, and the second is by gravity only. The flow is relatively equal with half of the flow directed to Trains 1 and 2, and the remaining half to Train 3. Preliminary treatment is provided by comminutors to reduce the size of the particles. A rotary auger and grit chamber installed on the gravity side influent. Stationary bar screens are provided as backup units should the comminutors fail and be out of service.

Primary and secondary treatment is Trains 1 and 2 is achieved in two parallel contact aeration plants with a combined capacity of 1.9 MDG. Each Train consists of five tanks as follows: primary settling, first stage aeration, first stage settling, first intermediate settling, second stage aeration, and second stage settling. Alum is added prior to second stage aeration for phosphorus removal. Tertiary treatment is provided and consists of four (4) contact aeration nitrification tanks that operate in parallel. Each tank is designed for an average flow of 0.575 MGD. Nitrification is followed by final settling which consists of four (4) settling tanks, also in parallel. Effluent from the tertiary treatment then goes through UV where it combines with effluent from Train 3, prior to stream discharge. A post-aeration tank with aeration system is in place in case post-aeration is required.

Approve	Deny	Signatures	Date
x		*Vasantha* Vasantha Palakurti / Environmental Engineering Specialist	December 9, 2024
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	12/09/2024

Summary of Review

Train 3 is an Oxidation Ditch (OD) with a rated capacity of 0.8 MGD. The OD consists of three (3) concentric oval rings. Following preliminary treatment, the raw wastewater enters the outermost ring. By operating the outer ring in an oxygen deficient condition, simultaneous nitrification/denitrification occurs. The remaining BOD and Ammonia are removed in the middle and inner rings by providing progressively increased levels of oxygen. The effluent from the OD then flows into two (2) circular clarifiers for settling. The effluent then goes through UV, prior to stream discharge.

The sludge plant treats the collection wastewater sludge generated from the entire system as well as trucked-in sludge from the BMMA/Morysville WWTP. Sludge processing is accomplished on site with a dewatering facility consisting of a belt filter press and other ancillary equipment to support it.

Water quality modeling is performed using Department's WQM. No changes to assumptions, flow, etc., so effluent limits for $CBOD_5$, NH3-N and D.O remain unchanged. Current limit for phosphorus, Total Kjeldahl Nitrogen remain unchanged for this renewal.

E.Coli report only requirement has been added in the permit as per the revised SOP for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits SOP No. BCW-PMT-033.

WQBEL calculated by Toxic Management Spreadsheet recommended that limits be established for Total Aluminum and monitor only for Total Copper.

Once a quarter Monitor only has been continued for Total Copper and limits for Total Aluminum will continue in this renewal.

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	2.3
Latitude	40º 19' 15.00"	Longitude	-75º 36' 1.24"
Quad Name	Sassamansville	Quad Code	1641
Wastewater Description:	Sewage Effluent		
Receiving Waters	Swamp Creek	Stream Code	01309
NHD Com ID	25994198	RMI	10.97
Drainage Area	13.7 mi^2	Yield (cfs/mi^2)	0.2
Q_{7-10} Flow (cfs)	2.74	Q_{7-10} Basis	See Other Comments
Elevation (ft)	585.1	Slope (ft/ft)	
Watershed No.	3-E	Chapter 93 Class.	TSF, MF
Existing Use	**None**	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Cause Unknown, Siltation		
Source(s) of Impairment	Municipal Point Source, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Aqua PA		
PWS Waters	Perkiomen Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Other Comments: Q7-10 flow was used from previous permit.

Treatment Facility Summary				
Treatment Facility Name: Swamp Creek STP				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Phosphorus Reduction	Oxidation Ditch	Gas Chlorine	2.3
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
3.1	5250	Projected Hydraulic Overload	Anaerobic Digestion	

Changes Since Last Permit Issuance: No changes to the treatment plant since last renewal.

Compliance History

DMR Data for Outfall 001 (from March 1, 2023 to February 29, 2024)

Parameter	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23
Flow (MGD) Average Monthly	1.914	3.242	3.152	1.262	1.096	1.481	1.256	1.26	1.012	1.316	1.278	1.947
Flow (MGD) Daily Maximum	2.658	9.13	9.485	3.451	1.934	5.075	2.313	2.95	2.084	4.463	2.185	4.496
pH (S.U.) Instantaneous Minimum	7.1	7.1	6.7	6.6	6.9	6.9	6.9	6.8	6.6	6.9	6.9	6.8
pH (S.U.) Instantaneous Maximum	7.5	7.5	7.5	7.5	7.5	7.7	7.5	7.5	7.5	8.0	7.5	7.4
DO (mg/L) Instantaneous Minimum	9.0	10.4	8.6	9.5	8.5	7.5	7.2	8.3	8.4	7.0	7.4	10.0
CBOD5 (lbs/day) Average Monthly	< 37	< 56	< 195	< 19	< 3	< 4	< 13	< 16	< 19	< 37	109	178
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	1899	2686	2896	2362	1584	1666	1817	1542	1596	1598	1640.0	1841
CBOD5 (lbs/day) Weekly Average	< 46	< 137	< 558	< 49	< 0.1	< 11	< 24	18	45	56	132	230
CBOD5 (mg/L) Average Monthly	< 2	< 2	< 3	< 2	9.2	8.6	< 1	< 1	< 2	< 3	2.8	< 3.3
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	109	124	100	198	147	121	149	126	167	160	168.0	137
CBOD5 (mg/L) Weekly Average	3	< 3	< 7	< 4	9.6	8.9	< 2	2	3	5	3.0	< 5.5
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	2088	3024	3322	2355	1786	2013	1755	1769	1742	1745	3933.0	3485
BOD5 (mg/L) Raw Sewage Influent Average Monthly	128	142	105	213	165	144	146	143	181	177	374.0	240

TSS (lbs/day) Average Monthly	82	158	616	47	29	46	43	50	46	53	109	6.2
TSS (lbs/day) Raw Sewage Influent Average Monthly	2762	3313	3586.48	3220	1880.34	2278.4	2424.42 88	1897	1841	1866	2040	1849
TSS (lbs/day) Weekly Average	131	398	1651	88	40	104	64	93	72	99	132	8.2
TSS (mg/L) Average Monthly	5.2	5.4	10.6	3.4	3.2	3.3	4.3	4.2	5	4	2.8	4.7
TSS (mg/L) Raw Sewage Influent Average Monthly	161	149.6	114.25	235	173.55	154.6	195.9	151	191	177	208.0	136
TSS (mg/L) Weekly Average	9	9	22	4	4	5	5.0	5	5	5	3.0	7.8
Total Dissolved Solids (mg/L) Average Quarterly			602.0			368.0			598.0			462.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 0.1	1	< 0.1	0.01	< 1	< 2	< 2	< 2	< 1	< 2	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	14	5	12900	89	4	18	27	33	12	4	4.0	3
UV Transmittance (%) Daily Minimum	75	76	60	70	72	68	71	72	69	68	9.0	69
Nitrate-Nitrite (lbs/day) Average Monthly	428	233	271	227	191	195	385	253	549	206	217	258
Nitrate-Nitrite (mg/L) Average Monthly	19.3	9.27	5.29	33.2	23.3	14.2	26.2	19	31.6	20.2	22.3	17.7
Total Nitrogen (lbs/day) Average Monthly	454	251	338	235	199	205	414	263	577	213	326.0	258
Total Nitrogen (mg/L) Average Monthly	20.5	10	6.58	34.4	24.3	14.9	28.2	19.8	33.2	20.9	23.5	17.84
Ammonia (lbs/day) Average Monthly	< 3	< 3	< 12	< 11	< 0.09	< 1	< 1	< 1	< 3	4	0.78	< 2.0
Ammonia (mg/L) Average Monthly	< 0.18	< 0.1	< 0.2	< 0.21	< 0.01	< 0.1	< 0.11	< 0.1	< 0.2	0.4	< 0.47	< 0.14
TKN (lbs/day) Average Monthly	27	19	66	9	8	11	28	9	27	7	12.0	< 10
TKN (mg/L) Average Monthly	1.2	0.76	1.29	1.26	< 0.01	0.77	1.91	0.71	1.53	0.7	1.25	0.7

Total Phosphorus (lbs/day) Average Monthly	7	8	21	7	6	8	7	5	6	9	7.0	6.0
Total Phosphorus (mg/L) Average Monthly	0.5	0.3	0.5	0.7	0.6	0.7	0.7	0.5	0.7	0.9	0.76	0.42
Total Aluminum (mg/L) Average Monthly	0.50	0.70	1.20	0.50	0.30	0.30	0.30	0.30	0.43	0.53	0.587	0.73
Total Aluminum (mg/L) Daily Maximum	0.87	1.04	2.35	0.686	0.331	0.518	0.329	0.30	0.6	0.7	0.728	0.86
Total Copper (mg/L) Average Quarterly			0.004			0.003			0.005			0.005
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum			1.79			GG			GG			GG
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum			1.79			GG			GG			GG
Chronic WET - Pimephales Survival (TUc) Daily Maximum			1.79			GG			GG			GG
Chronic WET - Pimephales Growth (TUc) Daily Maximum			1.79			GG			GG			GG

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 2.3
Latitude 40º 19' 15.01" **Longitude** -75º 36' 1.25"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

The Department's WQM model was run to confirm if the existing limits are protective of surface water quality criteria. The model was run with the Q7-10 flow of 2.74 cfs. It was also noted that the discharge is to a trout stocking stream with an in-stream criteria of 6.0 mg/l during trout fishing season, so the dissolved oxygen limit will remain 6 mg/l. The limits will remain the same for $CBOD_5$ = 15 mg/l and Ammonia= 1.8 mg/l.

Total Phosphorus average monthly limit concentration of 2.0 mg/l and instantaneous maximum of 4 mg/l will continue in this permit renewal with seasonal limits and average monthly mass units.

Nitrate-Nitrite, TKN, Total, and UV Transmittance monitoring will continue in this permit renewal. Total Nitrogen (TN) reporting requirement was added in this permit renewal. TN is the sum of Nitrate-Nitrite and TKN.

E.Coli report only requirement has been added in the permit as per the revised SOP for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits SOP No. BCW-PMT-033.

Water Quality-Based Limitations

The toxic modeling was run to determine the WQBEL for all parameters using an in-stream hardness of 123-mg/l and a discharge hardness of 210-mg/l. For a permitted flow of 2.3-MGD, the model calculated limits for Total Aluminum and Monitor only for Total copper.

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	16.3	25.5	851	1,328	2,127	µg/L	851	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	25.1	CFC	Discharge Conc > 10% WQBEL (no RP)

TMS_PA0024180.pdf

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)).

Total Copper: The existing permit has once a quarter monitor only.
The toxic modeling was run to determine the WQBEL for copper using an in-stream hardness of 123-mg/l and a discharge hardness of 210-mg/l. For a permitted flow of 2.3-MGD, the level of detection for copper is greater than 10% WQBEL. The model suggests monitoring the parameter. Therefore, quarterly reporting will continue in this renewal.

Total Aluminum: Alum is used in the treatment process for the removal of phosphorus. A numerical permit limit will remain in this permit renewal because the total aluminum level of detection is greater than 50% WQBEL and limit has been recommended by TMS.

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%, 78%, 56%, 28%, and 14%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 56%.

Summary of Four Most Recent Test Results **Continued….**

WET Summary and Evaluation

Facility Name	Swamp Creek WWTP
Permit No.	PA0024180
Design Flow (MGD)	2.3
Q_{7-10} Flow (cfs)	2.74
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/7/23	12/20/22	11/9/21	10/20/20
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/14/23	12/20/22	11/9/21	10/20/20
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/13/23	12/20/22	11/9/21	10/19/20
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/13/23	12/20/22	11/9/21	10/19/20
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**56** % Effluent
Dilution Series	**14, 28, 56, 78, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

Based on the review of the recent WET results, test of significant toxicity (TST) was performed using DEP's WET Analysis Spreadsheet. No reasonable potential was determined, and no limits are recommended in the draft permit.
The standard WET condition based on the DEP WET SOP is incorporated in Part C of the draft permit.

Current WET limit is eliminated from the permit. New monitoring data constitutes new information and anti-backsliding exception applies here and thereby justifies the elimination of the current WET limit.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily 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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
CBOD5 Nov 1 - Apr 30	480	767	XXX	25	40	50	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	288	441	XXX	15	23	30	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	575	863	XXX	30	45	60	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.0 Avg Qrtly	XXX	2500	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml)	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
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured

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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	104	XXX	XXX	5.4	XXX	10.8	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	35	XXX	XXX	1.8	XXX	3.6	2/week	24-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phosphorus Nov 1 - Mar 31	38	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Phosphorus Apr 1 - Oct 31	19	XXX	XXX	1.0	XXX	2	2/week	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	0.85	1.3 Daily Max	1.7	1/week	24-Hr Composite
Copper, Total	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/quarter	Grab
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	1
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Swamp Creek WWTP

Permit No.: PA0024180

Test Completion Date: 11/7/2023

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	10	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.750
Std Dev.	0.000	0.500
# Replicates	4	4

T-Test Result	7.6643
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	**PASS**

Test Completion Date: 12/20/2022

Replicate No.	Control	10
1	10	10
2	10	10
3	10	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.750
Std Dev.	0.000	0.500
# Replicates	4	4

T-Test Result	7.6643
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	**PASS**

Test Completion Date: 11/9/2021

Replicate No.	Control	TIWC
1	10	10
2	9	9
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.750
Std Dev.	0.500	0.500
# Replicates	4	4

T-Test Result	6.7314
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 10/20/2020

Replicate No.	Control	TIWC
1	9	10
2	10	10
3	10	10
4	9	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	10.000
Std Dev.	0.577	0.000
# Replicates	4	4

T-Test Result	11.7367
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	**PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.56
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Swamp Creek WWTP

Permit No.: PA0024180

Test Completion Date: 11/14/2023

Replicate No.	Control	TIWC
1	0.31	0.295
2	0.309	0.322
3	0.354	0.315
4	0.341	0.312
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.329	0.311
Std Dev.	0.023	0.011
# Replicates	4	4

T-Test Result	6.3217
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 12/20/2022

Replicate No.	Control	TIWC
1	0.294	0.25
2	0.297	0.329
3	0.341	0.309
4	0.357	0.293
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.322	0.295
Std Dev.	0.032	0.034
# Replicates	4	4

T-Test Result	2.6070
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 11/9/2021

Replicate No.	Control	TIWC
1	0.35	0.332
2	0.36	0.319
3	0.422	0.43
4	0.418	0.389
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.388	0.368
Std Dev.	0.038	0.052
# Replicates	4	4

T-Test Result	2.6125
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 10/20/2020

Replicate No.	Control	TIWC
1	0.563	0.447
2	0.49	0.461
3	0.479	0.493
4	0.494	0.489
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.507	0.473
Std Dev.	0.038	0.022
# Replicates	4	4

T-Test Result	5.1137
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	1
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Swamp Creek WWTP

Permit No.: PA0024180

Test Completion Date: 11/13/2023

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: 12/20/2022

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: 11/9/2021

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: 10/19/2020

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**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

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

Facility Name: Swamp Creek WWTP

Permit No.: PA0024180

Test Completion Date: 11/13/2023

Replicate No.	Control	TIWC
1	38	32
2	38	42
3	38	48
4	41	45
5	44	44
6	38	39
7	42	48
8	40	30
9	20	18
10	28	45
11		
12		
13		
14		
15		
Mean	36.700	39.100
Std Dev.	7.243	9.655
# Replicates	10	10

T-Test Result	3.3042
Deg. of Freedom	15
Critical T Value	0.8662
Pass or Fail	**PASS**

Test Completion Date: 12/20/2022

Replicate No.	Control	TIWC
1	17	18
2	26	34
3	20	30
4	20	30
5	22	30
6	32	26
7	20	44
8	24	33
9	29	39
10	29	30
11		
12		
13		
14		
15		
Mean	23.900	31.400
Std Dev.	4.932	7.011
# Replicates	10	10

T-Test Result	5.3755
Deg. of Freedom	15
Critical T Value	0.8662
Pass or Fail	**PASS**

Test Completion Date: 11/9/2021

Replicate No.	Control	TIWC
1	37	47
2	39	32
3	34	32
4	40	44
5	37	45
6	36	29
7	36	38
8	38	32
9	26	37
10	35	30
11		
12		
13		
14		
15		
Mean	35.800	36.600
Std Dev.	3.882	6.670
# Replicates	10	10

T-Test Result	4.2366
Deg. of Freedom	14
Critical T Value	0.8681
Pass or Fail	**PASS**

Test Completion Date: 10/19/2020

Replicate No.	Control	TIWC
1	20	26
2	32	34
3	18	28
4	30	44
5	30	35
6	22	41
7	34	32
8	17	38
9	24	33
10	29	21
11		
12		
13		
14		
15		
Mean	25.600	33.200
Std Dev.	6.150	6.941
# Replicates	10	10

T-Test Result	5.3123
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	**PASS**

WET Summary and Evaluation

Facility Name	Swamp Creek WWTP
Permit No.	PA0024180
Design Flow (MGD)	2.3
Q_{7-10} Flow (cfs)	2.74
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/7/23	12/20/22	11/9/21	10/20/20
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/14/23	12/20/22	11/9/21	10/20/20
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/13/23	12/20/22	11/9/21	10/19/20
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/13/23	12/20/22	11/9/21	10/19/20
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	Chronic
TIWC	56 % Effluent
Dilution Series	14, 28, 56, 78, 100 % Effluent
Permit Limit	None
Permit Limit Species	

Discharge Information

Instructions | Discharge | Stream

Facility: **Swamp Creek WWTP** NPDES Permit No.: **PA0024180** Outfall No.: **001**

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

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
2.3	210	7					2.74	

					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		625									
	Chloride (PWS)	mg/L		176									
	Bromide	mg/L											
	Sulfate (PWS)	mg/L		70.7									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		2350									
	Total Antimony	µg/L		0.4									
	Total Arsenic	µg/L		0.9									
	Total Barium	µg/L		69									
	Total Beryllium	µg/L											
	Total Boron	µg/L		251									
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		5									
	Free Cyanide	µg/L	<	0.5									
	Total Cyanide	µg/L	<	0.5									
	Dissolved Iron	µg/L		21									
	Total Iron	µg/L		33									
	Total Lead	µg/L											
	Total Manganese	µg/L		7									
	Total Mercury	µg/L											
	Total Nickel	µg/L		1									
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L		0.8									
	Total Silver	µg/L		0.4									
	Total Thallium	µg/L	<	0.4									
	Total Zinc	µg/L		20									
	Total Molybdenum	µg/L		2									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<	4.09									
	2,4-Dinitrotoluene	µg/L	<										

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

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Swamp Creek WWTP, NPDES Permit No. PA0024180, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name:

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	001309	10.97	599.8	13.7			Yes
End of Reach 1	001309	9.97	574.7	14.3			Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	10.97	0.1	2.74									103	7		
End of Reach 1	9.97	0.1	2.86												

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	10.97														
End of Reach 1	9.97														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Swamp Creek WWTP, NPDES Permit No. PA0024180, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 2.740 PMF: 1 Analysis Hardness (mg/l): 163.45 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,328	
Total Antimony	0	0		0	1,100	1,100	1,947	
Total Arsenic	0	0		0	340	340	602	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	37,172	
Total Boron	0	0		0	8,100	8,100	14,338	
Total Copper	0	0		0	21.351	22.2	39.4	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	38.9	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	709.557	711	1,258	Chem Translator of 0.998 applied
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	7.489	8.81	15.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	115	
Total Zinc	0	0		0	177.687	182	322	Chem Translator of 0.978 applied
Di-n-Butyl Phthalate	0	0		0	110	110	195	

☑ ***CFC*** CCT (min): 2.740 PMF: 1 Analysis Hardness (mg/l): 163.45 Analysis pH: 7.00

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

Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	389	
Total Arsenic	0	0		0	150	150	266	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	7,257	
Total Boron	0	0		0	1,600	1,600	2,832	
Total Copper	0	0		0	13.628	14.2	25.1	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	9.2	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	2,655	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	78.810	79.0	140	Chem Translator of 0.997 applied
Total Selenium	0	0		0	4.600	4.99	8.83	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	23.0	
Total Zinc	0	0		0	179.140	182	322	Chem Translator of 0.986 applied
Di-n-Butyl Phthalate	0	0		0	21	21.0	37.2	

☑ ***THH*** CCT (min): 2.740 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	9.91	
Total Arsenic	0	0		0	10	10.0	17.7	
Total Barium	0	0		0	2,400	2,400	4,248	
Total Boron	0	0		0	3,100	3,100	5,487	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	7.08	
Dissolved Iron	0	0		0	300	300	531	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,770	
Total Nickel	0	0		0	610	610	1,080	
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	0.42	
Total Zinc	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	20	20.0	35.4	

☑ ***CRL*** CCT (min): 9.506 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (µg/L)	Comments

Pollutants	Conc (µg/L)	CV	(µg/L)	Coef	(µg/L)	(µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
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 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 Manganese	0	0		0	N/A	N/A	N/A	
Total Nickel	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	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	16.3	25.5	851	1,328	2,127	µg/L	851	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	25.1	CFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	9.91	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	17.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	4,248	µg/L	Discharge Conc ≤ 10% WQBEL

Total Boron	2,832	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	N/A	N/A	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	531	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	2,655	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,770	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	140	µg/L	Discharge Conc ≤ 10% WQBEL
Total Selenium	8.83	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	10.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.42	µg/L	Discharge Conc < TQL
Total Zinc	206	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Di-n-Butyl Phthalate	35.4	µg/L	Discharge Conc < TQL