Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0046906**
Facility Type	**Municipal**	APS ID	**752359**
Major / Minor	**Major**	Authorization ID	**1491273**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Moon Township Municipal Authority (MTMA) Allegheny County**	Facility Name	**Flaugherty Run STP**
Applicant Address	1700 Beaver Grade Road Suite 200	Facility Address	1000 Stoops Ferry Road
	Moon Township, PA 15108-3193		Moon Township, PA 15108
Applicant Contact	John Riley	Facility Contact	
Applicant Phone	(412) 264-4300	Facility Phone	
Client ID	28901	Site ID	260862
Ch 94 Load Status	Not Overloaded	Municipality	Moon Township
Connection Status		County	Allegheny
Date Application Received	July 3, 2024	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility
Purpose of Application	Renewal		

Summary of Review

Introduction

The applicant has applied for a renewal of NPDES Permit No. PA0046906, which was previously issued by the Department on 12/11/2019. The permit expired on 12/31/2024.

Facility Overview

WQM Permit No. 0273422 authorized the construction of a STP with a hydraulic design capacity of 2.0 MGD.

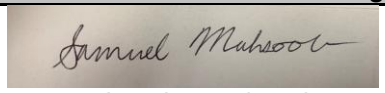
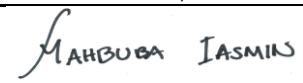
The existing treatment process consists of screening, grit removal, 2 Sequential Batch Reactors (SBRs), an aerobic digester, and UV Disinfection.

The receiving stream for Outfall 001, Ohio River, is classified as a WWF and is located in State Watershed No. 20-G.

Stormwater Outfalls 101 and 102 will again be permitted for the discharge of uncontaminated stormwater runoff from the areas in and around the treatment plant. Part C.IV, Requirements Applicable to Stormwater Outfalls, has been added to the permit. The stormwater outfalls discharge to Flaugherty Run, which is a WWF.

There are open violations by client ID, but none of them are related to this facility.

Act 14 Notifications were provided to the township and county on June 19 and June 24, 2024, respectively. No comments were received.

Approve	Return	Deny	Signatures	Date
x			 Sam Mahsoob, EIT / Environmental Engineering Trainee	11/7/2025
x			 Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	11/10/2025

Summary of Review

EPA-Administered Pretreatment Program Requirements

The EPA Administers a National Pretreatment Program as a part of the National Pollutant Discharge Elimination System (NPDES) administration. The goal of the National Pretreatment Program is to prevent the introduction of pollutants to Publicly Owned Treatment Works (POTWs) that will interfere with the operation of the POTW, pass through the POTW untreated, thereby improving opportunities to recycle and reclaim municipal and industrial wastewaters and sludges. The general pretreatment regulations that require certain POTWs to establish a local pretreatment program can be found at 40 CFR Part 403.8(a).

The Authority is already enrolled in the pretreatment program so the Part C condition "Pretreatment Program Implementation" will again be included in the permit. The Industrial User Information Section of the Application indicates the WWTP receives flow from one industrial user in the system, Premier pan. They are not a categorical industry. Pollutant Groups 1 through 5 were analyzed based upon the types of waste accepted at the WWTP.

Sludge use and disposal description and location(s)

The facility disposes of sewage sludge/biosolids at the Seneca Landfill. 137.5 tons were disposed in the previous year. The facility did not receive any additional sludge from another source.

Industrial User

A sewer extension was added to the facility. The extension connects Premier Pan, a manufacturing facility, to the treatment plant. The sewer extension consists of 60' of 8" of sanitary PVC line.

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)	2.0
Latitude	40º 33' 28"	Longitude	-80º 13' 4"
Quad Name	Ambridge	Quad ID	1404
Wastewater Description:	Sewage Effluent		
Receiving Waters	Ohio River (WWF)	Stream Code	32317
NHD Com ID	99683690	RMI	967.5
Drainage Area (sq mi)	19500	Yield (cfs/mi^2)	.243
Q_{7-10} Flow (cfs)	4730	Q_{7-10} Basis	USACE
Elevation (ft)	682.96	Slope (ft/ft)	.000025
Watershed No.	20-G	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	1. PCBs (Fish Consumption); 2. Dioxins (Fish Consumption); 3. Pathogens (Recreation)		
Source(s) of Impairment	1. Source unknown; 2. Source unknown; 3. Source unknown		
TMDL Status	Final (PCBs; Fish Consumption)	Name	Ohio River TMDL (4/9/2001)

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	PWS ID: 5040007 CENTER TWP WATER AUTH		
PWS Waters	Ohio	Flow at Intake (cfs)	4730
PWS RMI	953.6	Distance from Outfall (mi)	13.9

The discharge is to the Ohio River, which has a Final TMDL and is impaired by PCBs and Chlordane. No WLAs have been developed for this sewage discharge, and they are not expected to contribute to the stream impairment for these pollutants.

Treatment Facility Summary

Treatment Facility Name: Flaugherty Run STP

WQM Permit No.	Issuance Date
0273422	1/3/1974
0273422 A-1	6/15/2004
0273422 A-2	3/22/2023

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	2 SBRs	Ultraviolet	0.688 (2023)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
2.0	4170	Not Overloaded	Aerobic Digestion	Seneca Landfill

Compliance History

Operations Compliance Check Summary Report

Facility: FLAUGHERTY RUN STP

NPDES Permit No.: PA0046906

Compliance Review Period: 9/1/20-9/25/25

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
06/13/2025	Chapter 94 Inspection	PA Dept of Environmental Protection	Administratively Closed
03/20/2025	Compliance Evaluation	County Health Dept	Violation(s) Noted
02/27/2024	Compliance Evaluation	County Health Dept	No Violations Noted
03/29/2023	Compliance Evaluation	County Health Dept	No Violations Noted
02/24/2022	Compliance Evaluation	County Health Dept	Viol(s) Noted & Immediately Corrected
02/25/2021	Compliance Evaluation	County Health Dept	Violation(s) Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE	VIOLATION COMMENT
03/20/2025	CSL201	CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth	04/16/2025	SSO power loss
08/18/2021	92A.41(A)13B	NPDES - Unauthorized bypass occurred	08/18/2021	
07/01/2021	92A.61(C)	NPDES - Failure to monitor pollutants as required by the NPDES permit	08/01/2021	

03/01/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit	04/01/2021	
02/25/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit	10/28/2021	09/2020- Fecal Coliform, 2420>400, IMAX, Final Effluent

Open Violations by Client ID: No open violations for Client ID 28901 with Clean Water Program; The following open violations exist with Safe Drinking Water program in Southwest Region

PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
5020011	4041296	8249310	09/22/2025	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
5020011	4041296	8249311	09/22/2025	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
5020011	4041296	8249312	09/22/2025	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
5020011	4041296	8249313	09/22/2025	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
SM2523447	4034174	8244708	08/14/2025	02	EXCEEDED THE CHEMICAL AVERAGE MAXIMUM CONTAMINANT LEVEL

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
NOV	Notice of Violation	04/16/2025	CSL201	Administrative Close Out	04/16/2025
NOV	Notice of Violation	03/01/2022	92A.41(A)13B; 92A.44; 92A.61(C)	Administrative Close Out	03/01/2022
NOV	Notice of Violation	03/03/2021	92A.44	Administrative Close Out	03/03/2021

Effluent Violation Summary:

MON PD	PARAMETER	REPORTED VALUE	PERMIT LIMIT	UNIT	STAT_BASE_CODE	FACILITY COMMENTS
25-May	Total Suspended Solids	82	45	mg/L	Weekly Average	No abnormalities were noted in the basins prior to the sample on 5/22/25, and no abnormalities were seen in the days after. Possible contaminated composite sample bottle. Sample jug was cleaned and sample line was changed.
24-Jul	Fecal Coliform	687	400	No./100 ml	Instantaneous Maximum	The wording of page 27 of the plant's permit would indicate that this is would not be considered a violation. The permit reads: No greater than 400/100 ml in more than ten percent of the samples. All UV Sleeves were cleaned and wiping cartages refilled with cleaning solution
24-Jun	Fecal Coliform	580	400	No./100 ml	Instantaneous Maximum	UV system upgrade was being made to the second channel, and the plant was back down to 1 functional UV channel. After the exceedance, all UV sleeves of the functional channel were cleaned in an effort to maximize disinfection of the available unit.
24-May	Fecal Coliform	867	400	No./100 ml	Instantaneous Maximum	Fecal grab was taken during UV system maintenance/upgrade for full transparency. Plant was down to 1 channel of disinfection while the other channel was being tended to. The maintiance/upgrade of the system was completed and system was back to full capacity. The wording of page 27 of the plant's permit would indicate that this is would not be considered a violation. The permit reads: No greater than 400/100 ml in more than ten percent of the samples.
21-Mar	Fecal Coliform	> 2420	10000	No./100 ml	Instantaneous Maximum	Lab results from 3/19/21 came back as over their reporting limit.(>2,420). In January we had requested the lab to dilute our fecal samples during our winter permit limit months (Nov 1- Apr 30) to allow us to confirm that our sample is meeting our permit limits. A change in lab personnel resulted in that request not being passed on to the current lab employees. While we do not believe this result is over our 10,000 CFU permit limit, we understand that we do not have a definitive result documenting the value to be lower than 10,000, and this may be considered an exceedance of our permit. We believe that the heavy rain event may have resulted in higher than normal fecal counts for this facility, however, we are attributing this exceedance to an error in the methodology performed by the lab.

						We received confirmation from our lab that they will be performing a 1:10 dilution, which will increase the range up to 24,200 CFU during our winter limit months. We have also proactively replaced ALL of our UV bulbs as of 4/6/2021. Formal Report Attached to DMR
20-Sep	Fecal Coliform	2420	400	No./100 ml	Instantaneous Maximum	

Unauthorized Discharges:

MONITORING_PERIOD	DISCHARGE_COMMENTS
Aug-25	Malfunctioning Wet Well Level Indicator
May-25	Power bump caused PLC and raw pump VFD faults requiring manual resets. The overflow continued until the plant pumps could catch up to the increased flow during the wet weather event.
Apr-25	Wet weather caused the collections system to surcharge as the plant was pumping at full capacity
Apr-25	Wet weather caused the collections system to surcharge as the plant was pumping at full capacity.

Compliance Status: Facility is in general compliance with few exceptions. There are no open violations with Clean Water Program.
Completed by: Amanda Illar **Completed date:** 9/30/25

Compliance History

DMR Data for Outfall 001 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
Flow (MGD) Average Monthly	1.085	0.792	1.097	0.735	0.748	0.698	0.629	0.649	0.765	0.635	0.6795	0.964
Flow (MGD) Daily Maximum	3.574	1.138	3.895	1.1	0.963	1.058	0.724	0.838	1.739	0.715	1.08	4.045
pH (S.U.) Daily Minimum	6.93	6.88	6.72	7.01	6.71	6.78	6.71	6.7	6.69	6.77	6.7	6.67
pH (S.U.) Daily Maximum	7.21	7.19	7.1	7.2	7.28	7.33	6.98	7.01	7.01	7.11	7.05	6.93
DO (mg/L) Daily Minimum	6.25	5.28	5.31	4.87	5.28	5.6	4.08	5.14	4.28	4.28	5.17	5.03
CBOD5 (lbs/day) Average Monthly	< 30.5	< 21.3	< 32.5	< 19.6	< 17.9	< 22.1	< 24.8	< 16.3	< 12.9	< 16.3	< 16.2	< 21.9
CBOD5 (lbs/day) Weekly Average	< 46.1	< 23.8	< 63.6	< 25.2	< 19.3	26.2	29.9	< 16.6	< 17.4	< 17.1	< 17.3	< 31.7
CBOD5 (mg/L) Average Monthly	< 3.8	< 3.2	< 3.0	< 3.0	< 2.9	< 3.8	< 4.6	< 3.0	< 2.0	< 3.0	< 3.0	< 3.0
CBOD5 (mg/L) Weekly Average	< 5.0	< 4	< 3.0	3.3	< 3.0	5	6.0	< 3.0	< 2.0	< 3.0	< 3.0	< 3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1232	1317	1392	1024	934	1106	1071	1078	1028	739	894	1246
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	1592	1940	1861	1565	1309	1574	1388	1417	1555	972	1053	1630
BOD5 (mg/L) Raw Sewage Influent Average Monthly	166.4	197	168.9	161.6	153	186	199	199	172.9	137	166	177
TSS (lbs/day) Average Monthly	< 83.5	< 21.9	< 36.6	25.2	< 22.0	< 35.7	53.8	< 19.6	< 31.1	< 16.3	< 16.2	< 21.9
TSS (lbs/day) Raw Sewage Influent Average Monthly	1534	1980	1498	2397	734	1089	1129	1233	981	972	1144	979

TSS (lbs/day) Raw Sewage Influent Daily Maximum	2439	3837	2239	5807	1226	1878	2008	1593	1714	1596	2635	2458
TSS (lbs/day) Weekly Average	221.6	< 24.9	< 79.8	< 39.0	26.5	43.1	88.1	23.8	90.3	< 17.1	< 17.3	< 31.7
TSS (mg/L) Average Monthly	< 10.9	< 3.3	< 3.1	< 3.8	< 3.6	< 6.3	10.1	< 3.6	< 4.8	< 3.0	< 3.0	< 3.0
TSS (mg/L) Raw Sewage Influent Average Monthly	213	291	175	350.821 78	121	183	212	228	162	181	214	137
TSS (mg/L) Weekly Average	35.0	< 4.0	< 4.0	6.0	5.0	43.1	17	5	13.0	< 3.0	< 3.0	< 3.0
Fecal Coliform (No./100 ml) Geometric Mean	34	< 10	< 9	< 15	14	23	131	26	40	91	73	34
Fecal Coliform (No./100 ml) Instantaneous Maximum	187	31	31	41	51	364	308	78	66	687	580	867
Total Nitrogen (mg/L) Daily Maximum		11.8			7.59			5.91			5.50	
Ammonia (lbs/day) Average Monthly	41	46	27	7	5	4	2	2	4	2	4	16
Ammonia (mg/L) Average Monthly	5.43	7.06	3.29	1.07	0.48	0.68	0.47	0.43	0.52	0.32	0.81	2.478
Ammonia (mg/L) Instantaneous Maximum	12.0	10.7	8.12	2.76	1.96	1.68	1.06	0.75	1.64	0.51	1.37	4.57
Total Phosphorus (mg/L) Daily Maximum		3.05			3.6			5.37			5.41	
UV Dosage (mWsec/cm²) Daily Minimum	43.13	45.02	47.96	50.02	48.89	47.74	48.49	49.97	50.42	36.6	32.56	29.61

Compliance History

Effluent Violations for Outfall 001, from: June 1, 2024 To: April 30, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	06/30/24	IMAX	580	No./100 ml	400	No./100 ml
Fecal Coliform	07/31/24	IMAX	687	No./100 ml	400	No./100 ml

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 2
Latitude 40º 33' 28.00" **Longitude** -80º 13' 4.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/L)	SBC	Federal Regulation	State Regulation
Flow	Report	Average Monthly	-	§§ 92a.27, 92a.61
Flow	Report	Max Daily	-	§§ 92a.27, 92a.61
$CBOD_5$	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)
Total Nitrogen	Report	Average Monthly	-	92a.61(7)
Total Phosphorus	Report	Average Monthly	-	92a.61(8)
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)
E. Coli (No./100 ml)	-	Report		93a.61(11)(12)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Total Residual Chlorine	1.6	IMAX	-	92a.47-48(3)(4)
Ammonia-Nitrogen	25	Average Monthly	-	BPJ (5)
Ammonia-Nitrogen	50	IMAX	-	BPJ (5)
Dissolved Oxygen	4.0	IMIN	-	BPJ (6)

ORSANCO Pollution Control Standards

The Ohio River Valley Water Sanitation Commission (ORSANCO) is an interstate commission established by interstate compact that sets water quality standards (Pollution Control Standards) for the Ohio River. The Ohio River is a water of the Commonwealth and is the receiving water for discharges from MTMA's Flaugherty Run STP. DEP implements ORSANCO's Standards pursuant to 25 Pa. Code § 92.12(b), which states:

When interstate or international agencies under an interstate compact or international agreement establish applicable effluent limitations or standards for dischargers of this Commonwealth to surface waters that are more stringent than those required by this title, the more stringent standards and limitations apply.

Chapter 5.4(A) of ORSANCO's 2019 Pollution Control Standards (the current version) requires the following level of treatment for sewage discharges to the Ohio River:

Table 1. ORSANCO TBELs and Effluent Standards for Sewage Discharges

Parameter	Average Monthly (mg/L)	Weekly Average (mg/L)	Basis
Total Suspended Solids	30	45	Section 5.4(A)(2)
$CBOD_5$	25	40	Section 5.4(A)(1)(ii)
Fecal Coliform (No. /100mL)	2,000 (Geometric Mean)	—	Section 5.4(A)(4)(i)
E. coli (No. /100mL) April 1 – October 31	130 (90-day Geometric Mean)	240 (in 25% of samples)	Section 5.4(A)(4)(ii)
pH	not less than 6.0 and not greater than 9.0 s.u.		Section 5.4(A)(3)

The effluent standards given by ORSANCO are similar to those required by 25 Pa. Code § 92a.47(a) except for the application of *E. coli* limits from April 1 through October 31 and a fecal coliform limit of 2,000/100mL as a 30-day geometric mean that applies year-round. ORSCANO's fecal coliform effluent standard is already superseded by the effluent standards of § 92a.47(a)(4) and (a)(5) because the same 2,000/100mL fecal coliform limit as ORSANCO's applies to sewage discharges between October 1 and April 30 and a more stringent limit (200/100mL) applies during the rest of the year.

With respect to ORSANCO's *E. coli* limit, DEP previously determined that the fecal coliform limits currently in effect in MTMA's permit are more stringent than the *E. coli* effluent standards given by ORSANCO. That determination was based on calculations performed using a correlation equation developed by Ohio EPA[1] that converts between the numbers of fecal coliform and *E. coli* bacteria present in a sample. For reference, the calculations are shown below.

Ohio EPA: Fecal Coliform to *E. coli* Conversion Equation

$$E.coli = 0.403 \times (Fecal\ Coliform)^{1.028}$$

$$Fecal\ Coliform = \sqrt[1.028]{\frac{E.coli}{0.403}}$$

Fecal Coliform Equivalent of 130/100mL *E. coli* (90-Day Geometric Mean)

$$Fecal\ Coliform = \sqrt[1.028]{\frac{130}{0.403}} \approx 275/100mL$$

Fecal Coliform Equivalent of 240/100mL *E. coli* (in 25% of Samples)

$$Fecal\ Coliform = \sqrt[1.028]{\frac{240}{0.403}} \approx 500/100mL$$

MTMA's existing fecal coliform limit of 200/100mL as a 30-day geometric mean is more stringent than the 275/100mL fecal coliform equivalent of ORSANCO's *E. coli* limit of 130/100mL as a 90-day geometric mean. That is, MTMA is already obligated by its existing permit limits to achieve a higher level of disinfection over a shorter timeframe (30 days instead of 90 days) than ORSANCO requires.

Additionally, MTMA's existing instantaneous maximum fecal coliform limit of 400/100mL is more stringent than the 500/100mL fecal coliform equivalent of ORSANCO's *E. coli* limit of 240/100mL in 25% of samples. That is, MTMA is

[1] Ohio EPA Bacterial TMDL Correlation Equations for Converting Between Fecal Coliform and *E. Coli* (December 2006).

already obligated by its existing permit limits to achieve a higher level of disinfection in all samples than ORSANCO requires in only 25% of samples.

Since MTMA's existing fecal coliform limits are more stringent than the fecal coliform equivalents of ORSANCO's *E. coli* effluent standards, the *E. coli* effluent standards from ORSANCO will not be imposed at Outfall 001. Monitoring for *E. coli* still will be required at Outfall 001, as discussed previously.

As with the previous permit, the months during which MTMA's fecal coliform limits are in effect are modified from the time periods given in § 92a.47(a)(4) and (a)(5) to match the months during which ORSANCO's *E. coli* limits apply, which is necessary to maintain equivalent (or greater) stringency between MTMA's fecal coliform requirements and ORSANCO's *E. coli* requirements. As a result, MTMA's 200/100mL and 400/100mL limits will apply from April 1 through October 31 (one month earlier and one month later than § 92a.47(a)(4) requires). The months during which MTMA's 2,000/100mL and 10,000/100mL limits apply are reduced accordingly to November 1 through March 31.

Pursuant to the above discussion and 40 CFR § 122.44(l) (regarding anti-backsliding) MTMA's existing fecal coliform limits will be maintained in the renewed permit.

Chapter 5, Section B of ORSANCO's Pollution Control Standards also requires each holder of an individual NPDES permit to post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. That requirement will be included as a condition of the permit.

Water Quality-Based Limitations

The discharge was analyzed using WQM 7.0 for Ammonia-Nitrogen, CBOD5, and DO.

WQM 7.0 did not recommend any water-quality based effluent limitations. The model returned the default values of Ammonia-Nitrogen, CBOD5, and DO. This is likely due to the dilution of the discharge in the large flow rate of the Ohio River.

For existing discharges, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/L is acceptable, the application manager will generally establish a year-round monitoring requirement for ammonia-nitrogen, at a minimum. A seasonal multiplier of 3 times the summertime average monthly limit should be established for the winter period.

A minimum Dissolved Oxygen (DO) limit of 4.0 mg/L should be established based on BPJ to ensure adequate operation and maintenance. The minimum DO limit may need to be increased due to water quality considerations.

(SOP – Establishing Effluent Limitations for Individual Sewage Permits - Revised, February 5, 2024)

Reasonable Potential

A "Reasonable Potential Analysis" (TMS Version 1.4) determined the following parameter was a candidate for monitoring and/or limitations: Hexachlorobutadiene. A Pre-Draft Survey Letter was then sent to the Authority in June 2025. The Authority submitted additional sampling data to the Department in July of 2025 and the TMS was rerun.

No limitations were determined through water quality modeling, using DEPs Toxic Management Spreadsheet Version 1.4.

Best Professional Judgment (BPJ) Limitations

Comments: A minimum Dissolved Oxygen (DO) limit of 4.0 mg/L will be established based on BPJ to ensure adequate operation and maintenance (Section I.A, Note 6, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

Additional Considerations

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation. Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(40 CFR 122.44 (l)(2) Establishing limitations, standards, and other permit conditions., 40 CFR Ch. I (7-1-21 Edition))

No permits limits have been made less stringent in the renewal draft permit.

Effluent Multipliers

Section 2.C of the Permit Writers Manual contains the procedure for converting average monthly effluent limitations to average weekly, maximum daily, and instantaneous maximum effluent limitations. The average monthly limit is multiplied according to the following chart:

Discharge Solution	Parameters	Average Weekly	Maximum Daily	Instantaneous Maximum Multiplier
Sewage	All	1.5		2.0
Industrial	All		2.0	2.5*

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Influent Monitoring

For POTWs with design flows greater than 2,000 GPD, influent BOD5 and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters. BOD5 and TSS influent loads will once again be reported for monthly average and daily maximum values in lbs/day and monthly average concentrations in mg/L.

(Section *IV.E.8. SOP – New and Reissuance Individual Sewage NPDES Permits Final November 9, 2012, Revised February 3, 2022, Version 2.0.)*

Rounding Off

Section 5 C.2. of the Permit Writers Manual contains general guidelines for rounding conventional and toxic pollutants, with instructions to round down to the nearest decimal place indicated.

General Magnitude	Conventional Pollutants	Toxic Pollutants
<0.01	to nearest 0.001	to nearest 0.001
0.01 - 0.1	to nearest 0.01	to nearest 0.01

0.1 - 1.0	to nearest 0.1	to nearest 0.01
1.0 - 10.0	to nearest 0.5	to nearest 0.01
10.0 - 60.0	to nearest 1.0	to nearest 0.01
60.0 or greater	to nearest 5.0	to nearest 0.10

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Table 5-3: Methods of Expressing Effluent Limits for Sewage Discharges

Discharge Situation	Mass Loadings (lbs/day)			Concentrations (mg/L)				
	Average Monthly	Average Weekly[3]	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Instant Maximum[4]	Limit On Flow[6]
A. POTW DISCHARGES:								
1. Technology Based concentration limits	x	x[3]		x	x[3]		x	Yes
2. Water Quality Based limits	x	x[3]		x	x[3]		x	Yes
3. Water Quality Based limits (Toxics)	x		x	x		x		
B. NON-POTW DISCHARGES:								
1. Technology Based concentration limits	x[5]			x			x	Yes
2. Water Quality based limits	x[5]			x			x	Yes

1. This table is for all pollutants, conventional, non-conventional, toxic and all other pollutants that may be regulated by the permit. (Also refer to the toxics management strategy when specifying toxic WQBELs.)

2. X indicates need for an effluent limitation.

3. Only CBOD and TSS limitation.

4. Only include Instantaneous maximum limitations on the DMR forms if grab a sample is specified in the permit, otherwise do not include instantaneous maximum limitations on the DMR.

   Also, the permit page could include the following language for when composite samples are required "Instantaneous maximum limitations are imposed to allow for a grab sample to be collected by the appropriate regulatory agency to determine compliance. The permittee does not have to monitor for the instantaneous maximum limitations, however, if grab samples are collected by the permittee, the results must be reported."

5. This is for all sewage permits with design flow greater than 100,000 gpd since 25 Pa. Code § 94.13 requires flow monitoring.

6. The maximum monthly average flow limitation is the permitted flow that is to be placed in the NPDES permit. Generally, the annual average flow (AAF) is to be used for water quality modeling and to be used to determine the allowable mass loading in NPDES permits (i.e., AAF x 8.34 x mg/l = #/day) (Refer to the Domestic Wastewater Facilities Manual).

Ultraviolet Disinfection

Ultraviolet (UV) disinfection is used therefore Total Residual Chlorine (TRC) limits are not applicable. Routine monitoring of UV intensity is at the same monitoring frequency that is used for TRC.

(*Section I.A, Note 4, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

Nutrient Monitoring

Nutrient monitoring is required by the SOP for Effluent Limitations for Individual Sewage Permits. Monitoring is included to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). The receiving stream is not listed as impaired for nutrients, therefore at the discretion of the application manager, a monitoring frequency less than the equivalent of conventional pollutants in Table 6-3 of the Permit Writer's Manual has been selected.

(*Section I.A, Note 7 & 8, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

PFAS Monitoring

If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit. PFOS and PFBS were detected in the effluent analysis and were reported in the analysis results table. Therefore, quarterly monitoring for PFAS parameters have been applied at Outfall 001.

The following footnote is added to Part A Effluent Limitations:

The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

(*Section II.G. SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised February 5, 2024, Version 2.0* and *25 PA Code 92a.61(b)*.)

E. Coli

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD.

(*Note 12 SOP-Establishing Effluent Limitations for Individual Sewage Permits Final November 9, 2012, Revised February 5, 2024, Version 2.0.* and *25 PA Code 92a.61(b).)*

Fecal Coliform

If the discharge is directly to the Ohio River, the fecal coliform limits are modified as follows: April through October – 200 geometric mean, 400 IMAX, and November through March – 2,000 geometric mean, 10,000 IMAX as discussed in the Technology-Based Limitations section.

(*Note 11 SOP-Establishing Effluent Limitations for Individual Sewage Permits Final November 9, 2012, Revised February 5, 2024, Version 2.0.* and *25 PA Code 92a.61(b).)*

Table 6-3 – Self-Monitoring Requirements for SEWAGE Discharges

Plant Design Flow (MGD)	Flow Monitoring	C-BOD_5 or BOD_5	Suspended Solids	pH	Fecal Coliform	Chlorine Residual	NH_3-N	Phosphorus	DO	Toxics
Single Residence (Individual Permit)	2/year by estimate	2/year*	2/year*	1/month*	2/year*	1/month*	2/year*	2/year*	2/year*	N/A
.0005 to .002	weekly, using average pump rate or weir (a)	1/month*	1/month*	daily*	1/month*	daily*	1/month*	1/month*	daily*	N/A
.002 to .01	weekly, using average pump rate or weir (a)	2/month*	2/month*	daily*	2/month*	daily*	2/month*	2/month*	daily*	N/A
0.01 to 0.1	weekly, using average pump rate or weir (a)	2/month*	2/month*	daily*	2/month*	daily*	2/month*	2/month*	Daily*	1/week*
0.1 to 1.0	meter	1/week**	1/week**	daily*	1/week*	daily*	1/week**	1/week**	daily*	1/week****
1.0 to 5.0	**meter**	**2/week*****	**2/week*****	**daily***	**2/week***	**daily***	**2/week*****	**2/week*****	**daily***	**1/week****
5.0 to 25.0	meter	daily***	daily***	daily*	daily*	1/shift*	daily***	daily***	daily*	1/week****
over 25.0	meter	daily***	daily***	1/shift*	daily*	1/shift*	1/shift***	1/shift***	1/shift*	1/week****

* Grab sample-these should be most representative of the effluent and are to be taken at a time when the normal daily maximum flow would reach the sampling point.

** 8-hour composite sample.

*** 24-hour composite sample.

**** Same sample type as for Industrial Process Wastewater (See Table 6-4).

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%, 2%, and 1%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 2%.

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, Attachment 5).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	**Reproduction**	**Survival**	**Growth**
10/30/20	PASS	PASS	PASS	PASS
10/10/21	PASS	PASS	PASS	PASS
10/16/22	PASS	PASS	PASS	PASS
10/29/23	PASS	PASS	PASS	PASS

***** *A "passing" result is that which is greater than or equal to the TIWC 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**

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

Acute Partial Mix Factor (PMFa): **0.04** Chronic Partial Mix Factor (PMFc): **0.274**

1. Determine IWC – Acute (IWCa):

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

[(2 MGD x 1.547) / ((4730 cfs x **0.04**) + (2 MGD x 1.547))] x 100 = **1.6%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

Type of Test for Permit Renewal: **Chronic**

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

N/A

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

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

[(2 MGD x 1.547) / ((4730 cfs x 0.274) + (2 MGD x 1.547))] x 100 = **0.24%***

***The TIWC will be rounded up to 1% to match what has been previously approved for this facility.**

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%, 2%, and 1%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

PMF Determination

The PMFs were retrieved from the TMS Model. The Ohio River was assumed to be 1050 feet in width and 10 feet in depth.

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	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
CBOD5	417.0	667.0	XXX	25.0	40.0	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	500.0	750.0	XXX	30.0	45.0	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Nov 1 - March 31	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) April 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	400	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	2/week	Grab

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
UV Transmittance (%)	XXX	XXX	IMIN	XXX	XXX	XXX	1/day	Measured
PFOA* (ng/L)	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
PFOS* (ng/L)	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
PFBS* (ng/L)	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
HFPO-DA* (ng/L)	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab

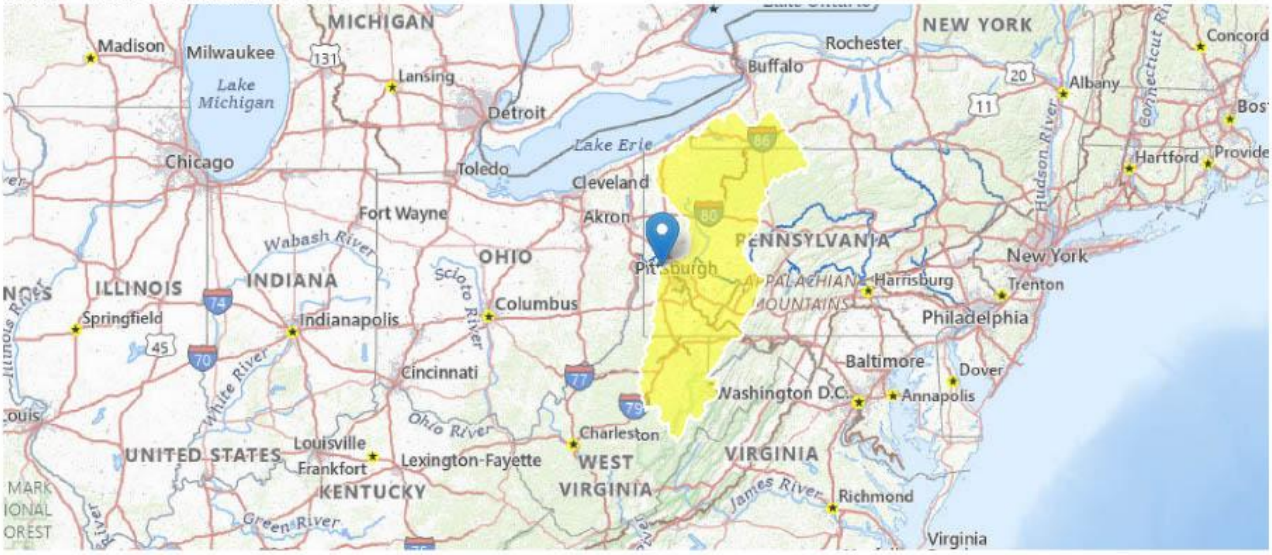
**The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs*.

Compliance Sampling Location: Outfall 001

Attachment 1
USGS StreamStats - Upstream

StreamStats Report - Upstream

Region ID: PA
Workspace ID: PA20250520172209159000
Clicked Point (Latitude, Longitude): 40.55873, -80.21678
Time: 2025-05-20 13:22:45 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	19500	square miles
ELEV	Mean Basin Elevation	1672	feet
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [58.0 Percent (11200 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19500	square miles	2.33	1720
ELEV	Mean Basin Elevation	1672	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Parameters [42.0 Percent (8280 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19500	square miles	2.26	1400
ELEV	Mean Basin Elevation	1672	feet	1050	2580

Low-Flow Statistics Disclaimers [58.0 Percent (11200 square miles) Low Flow Region 3]

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

Low-Flow Statistics Flow Report [58.0 Percent (11200 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2820	ft^3/s
30 Day 2 Year Low Flow	3550	ft^3/s
7 Day 10 Year Low Flow	2000	ft^3/s
30 Day 10 Year Low Flow	2320	ft^3/s
90 Day 10 Year Low Flow	3100	ft^3/s

Low-Flow Statistics Disclaimers [42.0 Percent (8280 square miles) Low Flow Region 4]

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

Low-Flow Statistics Flow Report [42.0 Percent (8280 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2860	ft^3/s
30 Day 2 Year Low Flow	3550	ft^3/s
7 Day 10 Year Low Flow	1940	ft^3/s
30 Day 10 Year Low Flow	2030	ft^3/s
90 Day 10 Year Low Flow	2770	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2840	ft^3/s
30 Day 2 Year Low Flow	3550	ft^3/s

Statistic	Value	Unit
7 Day 10 Year Low Flow	1970	ft^3/s
30 Day 10 Year Low Flow	2200	ft^3/s
90 Day 10 Year Low Flow	2960	ft^3/s

Low-Flow Statistics Citations

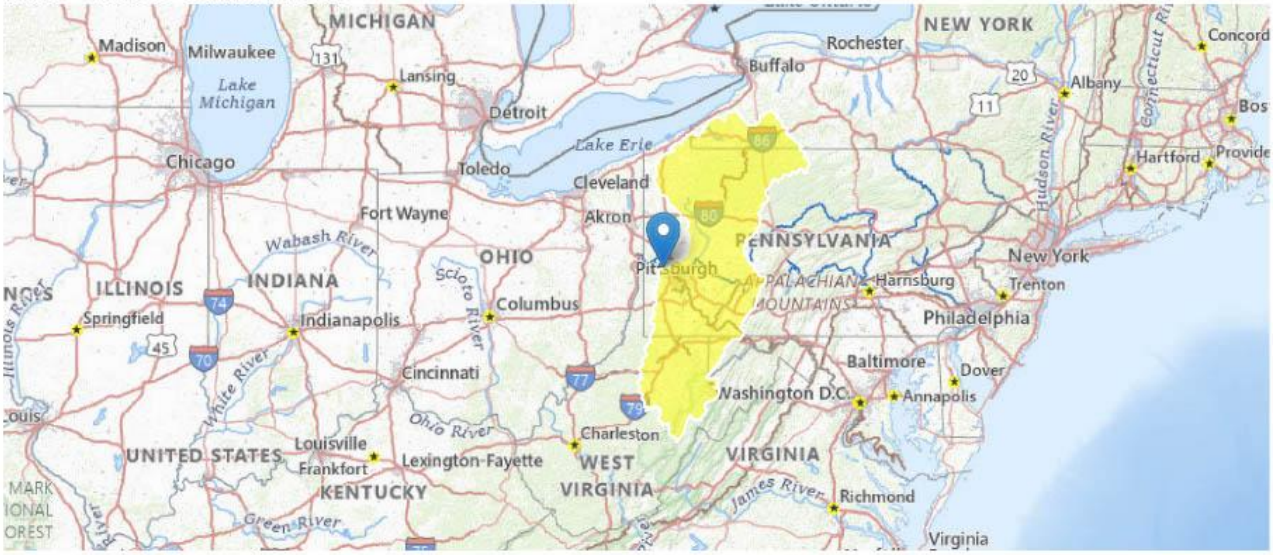
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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

Attachment 2
USGS StreamStats - Downstream

StreamStats Report - Downstream

Region ID: PA
Workspace ID: PA20250606180023098000
Clicked Point (Latitude, Longitude): 40.56417, -80.22204
Time: 2025-06-06 14:01:00 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	19500	square miles
ELEV	Mean Basin Elevation	1672	feet
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [58.0 Percent (11200 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19500	square miles	2.33	1720
ELEV	Mean Basin Elevation	1672	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Parameters [42.0 Percent (8280 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19500	square miles	2.26	1400
ELEV	Mean Basin Elevation	1672	feet	1050	2580

Low-Flow Statistics Disclaimers [58.0 Percent (11200 square miles) Low Flow Region 3]

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

Low-Flow Statistics Flow Report [58.0 Percent (11200 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2820	ft^3/s
30 Day 2 Year Low Flow	3550	ft^3/s
7 Day 10 Year Low Flow	2000	ft^3/s
30 Day 10 Year Low Flow	2320	ft^3/s
90 Day 10 Year Low Flow	3100	ft^3/s

Low-Flow Statistics Disclaimers [42.0 Percent (8280 square miles) Low Flow Region 4]

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

Low-Flow Statistics Flow Report [42.0 Percent (8280 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2860	ft^3/s
30 Day 2 Year Low Flow	3550	ft^3/s
7 Day 10 Year Low Flow	1940	ft^3/s
30 Day 10 Year Low Flow	2030	ft^3/s
90 Day 10 Year Low Flow	2770	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2840	ft^3/s
30 Day 2 Year Low Flow	3550	ft^3/s

Statistic	Value	Unit
7 Day 10 Year Low Flow	1970	ft^3/s
30 Day 10 Year Low Flow	2200	ft^3/s
90 Day 10 Year Low Flow	2960	ft^3/s

Low-Flow Statistics Citations

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

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

Attachment 3
WQM 7.0 Model - Summer

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
20E	32317	OHIO RIVER	26.320	682.96	19500.00	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	0.243	0.00	0.00	0.000	0.000	0.0	1050.00	10.00	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
Outfall 001	PA0046906	2.0000	2.0000	2.0000	0.000	20.00	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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20E	32317	OHIO RIVER	25.940	682.91	19500.10	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	0.243	0.00	0.00	0.000	0.000	0.0	1050.00	10.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

WQM 7.0 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	5.5		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO 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												
26.320	4738.50	0.00	4738.50	3.094	0.00002	10	1050	105	0.45	0.051	25.00	7.00
Q1-10 Flow												
26.320	3032.64	0.00	3032.64	3.094	0.00002	NA	NA	NA	0.29	0.080	24.99	7.00
Q30-10 Flow												
26.320	6444.36	0.00	6444.36	3.094	0.00002	NA	NA	NA	0.61	0.038	25.00	7.00

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO 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
26.320	Outfall 001	11.08	50	11.08	50	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
26.320	Outfall 001	1.37	25	1.37	25	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)		
26.32	Outfall 001	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
26.320	2.000	24.997	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1050.000	10.000	105.000	0.452
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.02	0.012	0.02	1.028
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.237	0.309	O'Connor	5.5
Reach Travel Time (days)			
0.051			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.005	2.01	0.02	7.54
0.010	2.01	0.02	7.54
0.015	2.01	0.02	7.54
0.021	2.01	0.02	7.54
0.026	2.01	0.02	7.54
0.031	2.01	0.02	7.54
0.036	2.01	0.02	7.54
0.041	2.01	0.02	7.54
0.046	2.01	0.02	7.54
0.051	2.01	0.02	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO 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)
26.320	Outfall 001	PA0046906	2.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Attachment 4
WQM 7.0 Model - Winter

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
20E	32317	OHIO RIVER	26.320	682.96	19500.00	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	0.486	0.00	0.00	0.000	0.000	0.0	1050.00	10.00	5.00	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
Outfall 001	PA0046906	2.0000	2.0000	2.0000	0.000	15.00	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	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20E	32317	OHIO RIVER	25.940	682.91	19500.10	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	0.486	0.00	0.00	0.000	0.000	0.0	1050.00	10.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

WQM 7.0 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	5.5		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO 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												
26.320	9477.00	0.00	9477.00	3.094	0.00002	10	1050	105	0.90	0.026	5.00	7.00
Q1-10 Flow												
26.320	6065.28	0.00	6065.28	3.094	0.00002	NA	NA	NA	0.58	0.040	5.01	7.00
Q30-10 Flow												
26.320	12888.72	0.00	12888.72	3.094	0.00002	NA	NA	NA	1.23	0.019	5.00	7.00

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO 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
26.320	Outfall 001	24.1	50	24.1	50	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
26.320	Outfall 001	4.36	25	4.36	25	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)		
26.32	Outfall 001	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
26.320	2.000	5.003	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1050.000	10.000	105.000	0.903
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.01	0.006	0.01	0.221
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
12.507	0.272	O'Connor	5.5
Reach Travel Time (days)			
0.026			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.003	2.01	0.01	11.45
0.005	2.01	0.01	11.45
0.008	2.01	0.01	11.45
0.010	2.01	0.01	11.45
0.013	2.01	0.01	11.45
0.015	2.01	0.01	11.45
0.018	2.01	0.01	11.45
0.021	2.01	0.01	11.45
0.023	2.01	0.01	11.45
0.026	2.01	0.01	11.45

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20E	32317	OHIO 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)
26.320	Outfall 001	PA0046906	2.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Attachment 5
TMS Spreadsheet

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Flaugherty Run STP** NPDES Permit No.: **PA0046906** 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	100	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Strea m CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteri a Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L	<	12.4									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		35.4									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		200									
	Total Cadmium	µg/L	<	0.04									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L		11.67									
	Free Cyanide	µg/L	<	5									
	Total Cyanide	µg/L		10									
	Dissolved Iron	µg/L											
	Total Iron	µg/L		60									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		34.3									
	Total Mercury	µg/L	<	0.09									
	Total Nickel	µg/L	<	2.39									
	Total Phenols (Phenolics) (PWS)	µg/L	<	50									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	µg/L		72									
	Total Molybdenum	µg/L	<	2									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									
	Carbon Tetrachloride	µg/L	<	0.5									

Group 3	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L	<	0.5									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	0.266									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	1.96									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	0.266									
	2,4-Dichlorophenol	µg/L	<	0.266									
	2,4-Dimethylphenol	µg/L	<	0.266									
	4,6-Dinitro-o-Cresol	µg/L	<	2.13									
	2,4-Dinitrophenol	µg/L	<	5.32									
	2-Nitrophenol	µg/L	<	0.266									
	4-Nitrophenol	µg/L	<	0.266									
	p-Chloro-m-Cresol	µg/L	<	0.266									
	Pentachlorophenol	µg/L	<	5.32									
	Phenol	µg/L	<	0.266									
	2,4,6-Trichlorophenol	µg/L	<	0.266									
Group 5	Acenaphthene	µg/L	<	0.266									
	Acenaphthylene	µg/L	<	0.266									
	Anthracene	µg/L	<	0.266									
	Benzidine	µg/L	<	0.266									
	Benzo(a)Anthracene	µg/L	<	0.266									
	Benzo(a)Pyrene	µg/L	<	0.266									
	3,4-Benzofluoranthene	µg/L	<	0.266									
	Benzo(ghi)Perylene	µg/L	<	0.266									
	Benzo(k)Fluoranthene	µg/L	<	0.266									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.266									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.266									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.266									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.266									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.266									
	Butyl Benzyl Phthalate	µg/L	<	0.266									
	2-Chloronaphthalene	µg/L	<	0.266									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.266									
	Chrysene	µg/L	<	0.266									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.266									
	1,2-Dichlorobenzene	µg/L	<	0.266									
	1,3-Dichlorobenzene	µg/L	<	0.266									
	1,4-Dichlorobenzene	µg/L	<	0.266									
	3,3-Dichlorobenzidine	µg/L	<	0.266									
	Diethyl Phthalate	µg/L	<	0.266									
	Dimethyl Phthalate	µg/L	<	0.266									
	Di-n-Butyl Phthalate	µg/L		1.36									
	2,4-Dinitrotoluene	µg/L	<	0.266									
	2,6-Dinitrotoluene	µg/L	<	0.266									
	Di-n-Octyl Phthalate	µg/L	<	0.266									

	1,2-Diphenylhydrazine	µg/L	<	0.266									
	Fluoranthene	µg/L	<	0.266									
	Fluorene	µg/L	<	0.266									
	Hexachlorobenzene	µg/L	<	0.266									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	0.532									
	Hexachloroethane	µg/L	<	0.263									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.266									
	Isophorone	µg/L	<	0.266									
	Naphthalene	µg/L		0.683									
	Nitrobenzene	µg/L	<	0.266									
	n-Nitrosodimethylamine	µg/L	<	0.266									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.266									
	n-Nitrosodiphenylamine	µg/L	<	0.266									
	Phenanthrene	µg/L	<	0.266									
	Pyrene	µg/L	<	0.266									
	1,2,4-Trichlorobenzene	µg/L	<	0.266									
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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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Flaugherty Run STP, NPDES Permit No. PA0046906, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Ohio River**

No. Reaches to Model: 1

- ○ Statewide Criteria
- ○ Great Lakes Criteria
- ◉ ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	032317	26.32	682.96	19500			Yes
End of Reach 1	032317	25.94	682.91	19500.1			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	26.32	0.242	4730			1050	10					100	7		
End of Reach 1	25.94	0.242	4730			1050	10								

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	26.32														
End of Reach 1	25.94														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Flaugherty Run STP, NPDES Permit No. PA0046906, Outfall 001

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
26.32	4,730		4,730	3.094	0.00002	10.	1050.	105.	0.451	0.052	9560.09
25.94	4,730		4,730								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
26.32	12100.89		12100.89	3.094	0.00002	15.116	1050.	69.465	0.763	0.03	5148.383
25.94	12100.894		12100.89								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.040 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	46,167	
Total Antimony	0	0		0	1,100	1,100	67,711	
Total Arsenic	0	0		0	340	340	20,929	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,292,671	
Total Boron	0	0		0	8,100	8,100	498,602	
Total Cadmium	0	0		0	2.014	2.13	131	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	110,988	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	1,003	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	5,848	
Total Copper	0	0		0	13.439	14.0	862	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	1,354	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	5,026	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	

Total Mercury	0	0		0	1.400	1.65	101	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	28,880	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	3.217	3.78	233	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	4,001	
Total Zinc	0	0		0	117.180	120	7,375	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	185	
Acrylonitrile	0	0		0	650	650	40,011	
Benzene	0	0		0	640	640	39,396	
Bromoform	0	0		0	1,800	1,800	110,800	
Carbon Tetrachloride	0	0		0	2,800	2,800	172,356	
Chlorobenzene	0	0		0	1,200	1,200	73,867	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	1,108,004	
Chloroform	0	0		0	1,900	1,900	116,956	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	923,336	
1,1-Dichloroethylene	0	0		0	7,500	7,500	461,668	
1,2-Dichloropropane	0	0		0	11,000	11,000	677,113	
1,3-Dichloropropylene	0	0		0	310	310	19,082	
Ethylbenzene	0	0		0	2,900	2,900	178,512	
Methyl Bromide	0	0		0	550	550	33,856	
Methyl Chloride	0	0		0	28,000	28,000	1,723,561	
Methylene Chloride	0	0		0	12,000	12,000	738,669	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	61,556	
Tetrachloroethylene	0	0		0	700	700	43,089	
Toluene	0	0		0	1,700	1,700	104,645	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	418,579	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	184,667	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	209,290	
Trichloroethylene	0	0		0	2,300	2,300	141,578	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	34,471	
2,4-Dichlorophenol	0	0		0	1,700	1,700	104,645	
2,4-Dimethylphenol	0	0		0	660	660	40,627	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	4,924	
2,4-Dinitrophenol	0	0		0	660	660	40,627	
2-Nitrophenol	0	0		0	8,000	8,000	492,446	
4-Nitrophenol	0	0		0	2,300	2,300	141,578	
p-Chloro-m-Cresol	0	0		0	160	160	9,849	
Pentachlorophenol	0	0		0	8.723	8.72	537	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	28,316	
Acenaphthene	0	0		0	83	83.0	5,109	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	18,467	
Benzo(a)Anthracene	0	0		0	0.5	0.5	30.8	

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	1,846,673	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	277,001	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	16,620	
Butyl Benzyl Phthalate	0	0		0	140	140	8,618	
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	50,476	
1,3-Dichlorobenzene	0	0		0	350	350	21,545	
1,4-Dichlorobenzene	0	0		0	730	730	44,936	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	246,223	
Dimethyl Phthalate	0	0		0	2,500	2,500	153,889	
Di-n-Butyl Phthalate	0	0		0	110	110	6,771	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	98,489	
2,6-Dinitrotoluene	0	0		0	990	990	60,940	
1,2-Diphenylhydrazine	0	0		0	15	15.0	923	
Fluoranthene	0	0		0	200	200	12,311	
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	616	
Hexachlorocyclopentadiene	0	0		0	5	5.0	308	
Hexachloroethane	0	0		0	60	60.0	3,693	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	615,558	
Naphthalene	0	0		0	140	140	8,618	
Nitrobenzene	0	0		0	4,000	4,000	246,223	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	1,046,448	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	18,467	
Phenanthrene	0	0		0	5	5.0	308	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	8,002	

☑ ***CFC*** CCT (min): 720 PMF: 0.274 Analysis Hardness (mg/l): 100 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	92,519	
Total Arsenic	0	0		0	150	150	63,081	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,724,225	
Total Boron	0	0		0	1,600	1,600	672,868	
Total Cadmium	0	0		0	0.246	0.27	114	Chem Translator of 0.909 applied

Total Chromium (III)	0	0		0	74.115	86.2	36,242	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	4,372	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	7,990	
Total Copper	0	0		0	8.956	9.33	3,923	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	2,187	
Total Iron	0	0		0	1,500	1,500	2,294,648	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	1,338	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	381	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	21,937	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	2,098	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	5,467	
Total Zinc	0	0		0	118.139	120	50,388	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	1,262	
Acrylonitrile	0	0		0	130	130	54,671	
Benzene	0	0		0	130	130	54,671	
Bromoform	0	0		0	370	370	155,601	
Carbon Tetrachloride	0	0		0	560	560	235,504	
Chlorobenzene	0	0		0	240	240	100,930	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	1,471,899	
Chloroform	0	0		0	390	390	164,012	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	1,303,682	
1,1-Dichloroethylene	0	0		0	1,500	1,500	630,814	
1,2-Dichloropropane	0	0		0	2,200	2,200	925,194	
1,3-Dichloropropylene	0	0		0	61	61.0	25,653	
Ethylbenzene	0	0		0	580	580	243,915	
Methyl Bromide	0	0		0	110	110	46,260	
Methyl Chloride	0	0		0	5,500	5,500	2,312,984	
Methylene Chloride	0	0		0	2,400	2,400	1,009,302	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	88,314	
Tetrachloroethylene	0	0		0	140	140	58,876	
Toluene	0	0		0	330	330	138,779	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	588,760	
1,1,1-Trichloroethane	0	0		0	610	610	256,531	
1,1,2-Trichloroethane	0	0		0	680	680	285,969	
Trichloroethylene	0	0		0	450	450	189,244	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	46,260	
2,4-Dichlorophenol	0	0		0	340	340	142,984	
2,4-Dimethylphenol	0	0		0	130	130	54,671	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	6,729	
2,4-Dinitrophenol	0	0		0	130	130	54,671	

2-Nitrophenol	0	0		0	1,600	1,600	672,868	
4-Nitrophenol	0	0		0	470	470	197,655	
p-Chloro-m-Cresol	0	0		0	500	500	210,271	
Pentachlorophenol	0	0		0	6.693	6.69	2,815	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	38,269	
Acenaphthene	0	0		0	17	17.0	7,149	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	24,812	
Benzo(a)Anthracene	0	0		0	0.1	0.1	42.1	
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	6,000	6,000	2,523,256	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	382,694	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	22,709	
Butyl Benzyl Phthalate	0	0		0	35	35.0	14,719	
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	67,287	
1,3-Dichlorobenzene	0	0		0	69	69.0	29,017	
1,4-Dichlorobenzene	0	0		0	150	150	63,081	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	336,434	
Dimethyl Phthalate	0	0		0	500	500	210,271	
Di-n-Butyl Phthalate	0	0		0	21	21.0	8,831	
2,4-Dinitrotoluene	0	0		0	320	320	134,574	
2,6-Dinitrotoluene	0	0		0	200	200	84,109	
1,2-Diphenylhydrazine	0	0		0	3	3.0	1,262	
Fluoranthene	0	0		0	40	40.0	16,822	
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	841	
Hexachlorocyclopentadiene	0	0		0	1	1.0	421	
Hexachloroethane	0	0		0	12	12.0	5,047	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	883,140	
Naphthalene	0	0		0	43	43.0	18,083	
Nitrobenzene	0	0		0	810	810	340,640	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	1,429,845	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	24,812	
Phenanthrene	0	0		0	1	1.0	421	
Pyrene	0	0		0	N/A	N/A	N/A	

1,2,4-Trichlorobenzene	0	0		0	26	26.0	10,934	

☑ ***THH*** CCT (min): 720 PMF: 0.274 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	2,355	
Total Arsenic	0	0		0	10	10.0	4,205	
Total Barium	0	0		0	1,000	1,000	420,543	
Total Boron	0	0		0	3,100	3,100	1,303,682	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	1,300	1,300	546,705	
Free Cyanide	0	0		0	4	4.0	1,682	
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	420,543	
Total Mercury	0	0		0	0.012	0.012	5.05	
Total Nickel	0	0		0	610	610	256,531	
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	101	
Total Zinc	0	0		0	7,400	7,400	3,112,015	
Acrolein	0	0		0	3	3.0	1,262	
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	42,054	
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	2,397	
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	13,878	
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	28,597	
Methyl Bromide	0	0		0	47	47.0	19,766	
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	23,971	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	42,054	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	4,205,426	
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	12,616	
2,4-Dichlorophenol	0	0		0	10	10.0	4,205	
2,4-Dimethylphenol	0	0		0	100	100.0	42,054	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	841	
2,4-Dinitrophenol	0	0		0	10	10.0	4,205	
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	1,682,171	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	29,438	
Anthracene	0	0		0	300	300	126,163	
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	84,109	
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	42.1	
2-Chloronaphthalene	0	0		0	800	800	336,434	
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	420	420	176,628	
1,3-Dichlorobenzene	0	0		0	7	7.0	2,944	
1,4-Dichlorobenzene	0	0		0	63	63.0	26,494	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	252,326	
Dimethyl Phthalate	0	0		0	2,000	2,000	841,085	
Di-n-Butyl Phthalate	0	0		0	20	20.0	8,411	
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	8,411	
Fluorene	0	0		0	50	50.0	21,027	
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	1,682	
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	14,298	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	4,205	
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	8,411	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	29.4	

☑ ***CRL*** CCT (min): 720 PMF: 0.374 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	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
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	50	50.0	73,180	
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	0.051	0.051	74.6	
Benzene	0	0		0	0.58	0.58	849	
Bromoform	0	0		0	4.3	4.3	6,294	
Carbon Tetrachloride	0	0		0	0.4	0.4	585	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.4	0.4	585	

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	0.55	0.55	805	
1,2-Dichloroethane	0	0		0	0.38	0.38	556	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.5	0.5	732	
1,3-Dichloropropylene	0	0		0	0.27	0.27	395	
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	4.6	4.6	6,733	
1,1,2,2-Tetrachloroethane	0	0		0	0.17	0.17	249	
Tetrachloroethylene	0	0		0	0.69	0.69	1,010	
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	805	
Trichloroethylene	0	0		0	0.6	0.6	878	
Vinyl Chloride	0	0		0	0.02	0.02	29.3	
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	43.9	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.4	1.4	2,049	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.000086	0.00009	0.13	
Benzo(a)Anthracene	0	0		0	0.001	0.001	1.46	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.15	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	1.46	
Benzo(k)Fluoranthene	0	0		0	0.0038	0.004	5.56	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	43.9	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	468	
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	0.0038	0.004	5.56	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.15	
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	0.021	0.021	30.7	
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	73.2	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	73.2	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	43.9	
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	0.12	
Hexachlorobutadiene	0	0		0	0.01	0.01	14.6	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	146	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	1.46	
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	0.00069	0.0007	1.01	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	7.32	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	4,830	
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

☑ ***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
Bromide	N/A	N/A	No WQS
Total Aluminum	29,591	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	420,543	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	319,584	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	36,242	µg/L	Discharge Conc < TQL
Hexavalent Chromium	643	µg/L	Discharge Conc < TQL
Total Cobalt	3,748	µg/L	Discharge Conc < TQL
Total Copper	552	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	868	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Iron	2,294,648	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,338	µg/L	Discharge Conc < TQL
Total Manganese	420,543	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.012	µg/L	Discharge Conc < TQL
Total Nickel	18,511	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	2,098	µg/L	Discharge Conc < TQL
Total Silver	149	µg/L	Discharge Conc < TQL
Total Thallium	101	µg/L	Discharge Conc < TQL
Total Zinc	4,727	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	118	µg/L	Discharge Conc < TQL
Acrylonitrile	74.6	µg/L	Discharge Conc < TQL
Benzene	849	µg/L	Discharge Conc < TQL
Bromoform	6,294	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	585	µg/L	Discharge Conc < TQL
Chlorobenzene	42,054	µg/L	Discharge Conc < TQL
Chlorodibromomethane	585	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	710,186	µg/L	Discharge Conc < TQL
Chloroform	2,397	µg/L	Discharge Conc < TQL
Dichlorobromomethane	805	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	556	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	13,878	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	732	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	395	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	28,597	µg/L	Discharge Conc < TQL
Methyl Bromide	19,766	µg/L	Discharge Conc < TQL
Methyl Chloride	1,104,733	µg/L	Discharge Conc < TQL
Methylene Chloride	6,733	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	249	µg/L	Discharge Conc < TQL
Tetrachloroethylene	1,010	µg/L	Discharge Conc < TQL

Toluene	23,971	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	42,054	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	118,364	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	805	µg/L	Discharge Conc < TQL
Trichloroethylene	878	µg/L	Discharge Conc < TQL
Vinyl Chloride	29.3	µg/L	Discharge Conc < TQL
2-Chlorophenol	12,616	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	4,205	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	26,040	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	841	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	4,205	µg/L	Discharge Conc < TQL
2-Nitrophenol	315,638	µg/L	Discharge Conc < TQL
4-Nitrophenol	90,746	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	6,313	µg/L	Discharge Conc < TQL
Pentachlorophenol	43.9	µg/L	Discharge Conc < TQL
Phenol	1,682,171	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	2,049	µg/L	Discharge Conc < TQL
Acenaphthene	3,275	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	126,163	µg/L	Discharge Conc < TQL
Benzidine	0.13	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	1.46	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.15	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	1.46	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	5.56	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	43.9	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	84,109	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	468	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	10,653	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	42.1	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	336,434	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	5.56	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.15	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	32,353	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	2,944	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	26,494	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	30.7	µg/L	Discharge Conc < TQL
Diethyl Phthalate	157,819	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	98,637	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	4,340	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	73.2	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	73.2	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS

1,2-Diphenylhydrazine	43.9	µg/L	Discharge Conc < TQL
Fluoranthene	7,891	µg/L	Discharge Conc < TQL
Fluorene	21,027	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00008	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.01	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	197	µg/L	Discharge Conc < TQL
Hexachloroethane	146	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	1.46	µg/L	Discharge Conc < TQL
Isophorone	14,298	µg/L	Discharge Conc < TQL
Naphthalene	5,524	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	4,205	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	1.01	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	7.32	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	4,830	µg/L	Discharge Conc < TQL
Phenanthrene	197	µg/L	Discharge Conc < TQL
Pyrene	8,411	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	29.4	µg/L	Discharge Conc < TQL

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Flaugherty Run STP

Permit No.: PA0046906

Test Completion Date: 10/19/2020

Replicate No.	Control	TIWC
1	26	20
2	36	29
3	32	34
4	28	27
5	36	0
6	33	28
7	26	31
8	30	31
9	27	30
10	27	31
11		
12		
13		
14		
15		
Mean	30.100	26.100
Std Dev.	3.929	9.893
# Replicates	10	10

T-Test Result	1.0799
Deg. of Freedom	12
Critical T Value	0.8726
Pass or Fail	**PASS**

Test Completion Date: 10/18/2021

Replicate No.	Control	TIWC
1	36	24
2	31	19
3	27	22
4	25	23
5	20	27
6	31	27
7	20	22
8	28	18
9	27	27
10	24	30
11		
12		
13		
14		
15		
Mean	26.900	23.900
Std Dev.	4.999	3.843
# Replicates	10	10

T-Test Result	2.1941
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	**PASS**

Test Completion Date: 10/25/2022

Replicate No.	Control	TIWC
1	25	30
2	26	17
3	30	24
4	27	29
5	27	32
6	21	28
7	26	26
8	34	30
9	29	24
10	23	26
11		
12		
13		
14		
15		
Mean	26.800	26.600
Std Dev.	3.645	4.300
# Replicates	10	10

T-Test Result	4.0339
Deg. of Freedom	15
Critical T Value	0.8662
Pass or Fail	**PASS**

Test Completion Date: 11/7/2023

Replicate No.	Control	TIWC
1	26	24
2	21	26
3	22	28
4	20	25
5	28	31
6	27	34
7	18	30
8	22	25
9	19	33
10	23	32
11		
12		
13		
14		
15		
Mean	22.600	28.800
Std Dev.	3.406	3.676
# Replicates	10	10

T-Test Result	8.3717
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	**PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Flaugherty Run STP

Permit No.: PA0046906

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**

Test Completion Date: 10/18/2021

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: 10/25/2022

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: 11/7/2023

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**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Flaugherty Run STP

Permit No.: PA0046906

Replicate No.	Test Completion Date: 10/20/2020 Control	TIWC
1	0.9	0.9
2	0.9	0.9
3	1	1
4	0.9	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.925	0.950
Std Dev.	0.050	0.058
# Replicates	4	4
T-Test Result	7.4443	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	**PASS**	

Replicate No.	Test Completion Date: 10/19/2021 Control	TIWC
1	1	1
2	0.9	1
3	1	0.9
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	0.975
Std Dev.	0.050	0.050
# Replicates	4	4
T-Test Result	7.8000	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	**PASS**	

Replicate No.	Test Completion Date: 10/25/2022 Control	TIWC
1	1	0.8
2	1	0.9
3	1	0.9
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.082
# Replicates	4	4
T-Test Result	3.6742	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	**PASS**	

Replicate No.	Test Completion Date: 11/7/2023 Control	TIWC
1	0.9	1
2	1	1
3	1	0.9
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	0.975
Std Dev.	0.050	0.050
# Replicates	4	4
T-Test Result	7.8000	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	**PASS**	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Flaugherty Run STP

Permit No.: PA0046906

Replicate No.	Test Completion Date: 10/20/2020 Control	TIWC
1	0.462	0.441
2	0.468	0.473
3	0.4406	0.474
4	0.443	0.405
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.453	0.448
Std Dev.	0.014	0.033
# Replicates	4	4
T-Test Result	6.3236	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	**PASS**	

Replicate No.	Test Completion Date: 10/19/2021 Control	TIWC
1	0.291	0.278
2	0.2789	0.267
3	0.268	0.265
4	0.271	0.289
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.277	0.275
Std Dev.	0.010	0.011
# Replicates	4	4
T-Test Result	9.9011	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	**PASS**	

Replicate No.	Test Completion Date: 10/25/2022 Control	TIWC
1	0.424	0.327
2	0.437	0.394
3	0.389	0.43
4	0.384	0.47
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.409	0.405
Std Dev.	0.026	0.061
# Replicates	4	4
T-Test Result	3.1012	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	**PASS**	

Replicate No.	Test Completion Date: 11/7/2023 Control	TIWC
1	0.338	0.406
2	0.375	0.386
3	0.364	0.319
4	0.317	0.28
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.349	0.348
Std Dev.	0.026	0.059
# Replicates	4	4
T-Test Result	2.7995	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	**PASS**	

WET Summary and Evaluation

Facility Name	Flaugherty Run
Permit No.	PA0046906
Design Flow (MGD)	2
Q_{7-10} Flow (cfs)	4730
PMF_a	0.04
PMF_c	0.274

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/19/20	10/18/21	10/25/22	11/7/23
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/19/20	10/18/21	10/25/22	11/7/23
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/20/20	10/19/21	10/25/22	11/7/23
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/20/20	10/19/21	10/25/22	11/7/23
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**	
TIWC	**1**	% Effluent
Dilution Series	**1, 2, 30, 60, 100**	% Effluent
Permit Limit	**None**	
Permit Limit Species		