Pennsylvania
Department of
Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0021636**
Facility Type	**Municipal**	APS ID	**39486**
Major / Minor	**Minor**	Authorization ID	**1478698**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Fleetwood Borough Berks County**	Facility Name	**Fleetwood Borough STP**
Applicant Address	110 West Arch Street Suite 104 Fleetwood, PA 19522	Facility Address	608 Crisscross Road Off Walnuttown Road Fleetwood, PA 19530
Applicant Contact	Craig Conrad	Facility Contact	Craig Conrad
Applicant Phone	(610) 944-8220	Facility Phone	(610) 944-8220
Client ID	33400	Site ID	256829
Ch 94 Load Status	Not Overloaded	Municipality	Richmond Township
Connection Status	No Limitations	County	Berks
Date Application Received	March 28, 2024	EPA Waived?	Yes
Date Application Accepted	July 2, 2024	If No, Reason	Pretreatment
Purpose of Application	This is an application for NPDES renewal.		

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	September 3, 2025
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Environmental Program Manager	

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Fleetwood Borough STP located at 608 Crisscross Road, Fleetwood, PA 19530 in Berks County, municipality of Richmond Township. The existing permit became effective on October 1, 2019 and expired on September 30, 2024. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on March 28, 2024.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.7 MGD average annual treatment facility. The hydraulic design flow is 0.882 MGD. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facility (Level 2) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Berks County Planning Commission, the Fleetwood Borough Office, the Richmond Township Office and the notice was received by the parties on March 19, 2024. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Willow Creek. The sequence of receiving streams that the Willow Creek discharges into are the Maiden Creek, the Schuylkill River, and the Delaware River which eventually drains into the Delaware Bay. The receiving water has protected water usage for cold water fish (CWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Willow Creek is a Category 4c and 5 stream listed in the 2024 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an impaired stream for aquatic life due to flow regime modification from natural sources. The stream is also impaired for recreational uses due to pathogens. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Ammonia nitrogen limits lowered to 1 mg/l during summer and 3 mg/l during winter**
- **Total copper limits lowered to 0.018 mg/l as an average monthly**
- **Due to the EPA triennial review, monitoring shall be required for E. Coli.**

Sludge use and disposal description and location(s): Biosolids/sewage sludge disposed at Rolling Hills Landfill in Delaware County as sewage sludge

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. 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.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	Fleetwood Borough STP
NPDES Permit #	PA0021636
Physical Address:	608 Crisscross Road Fleetwood, PA 19530
Mailing Address:	110 West Arch Street Fleetwood, PA 19522
Contact:	Craig Conrad Director of Public Works craigc@fleetwoodboro.com (610) 944-8220
Consultant:	Mary Peters Sr. Project Manager Entech Engineering mpeters@entecheng.com (570) 868-0275

1.2 Permit History

Permit submittal included the following information.

- NPDES Application
- Flow Diagrams
- Influent Sample Data
- Effluent Sample Data
- WET Testing Data

The consultant stated that the WET tests for 2025 will be completed in October 2025.

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 608 Crisscross Road, Fleetwood, PA 19530. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

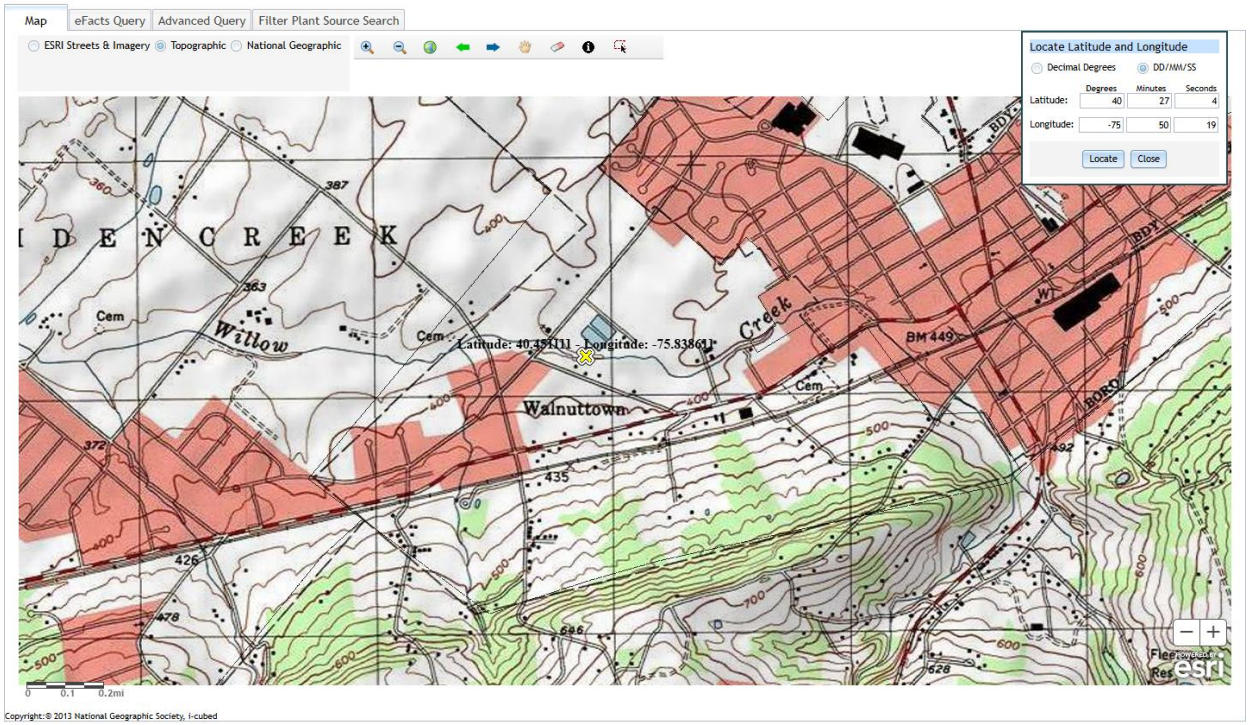
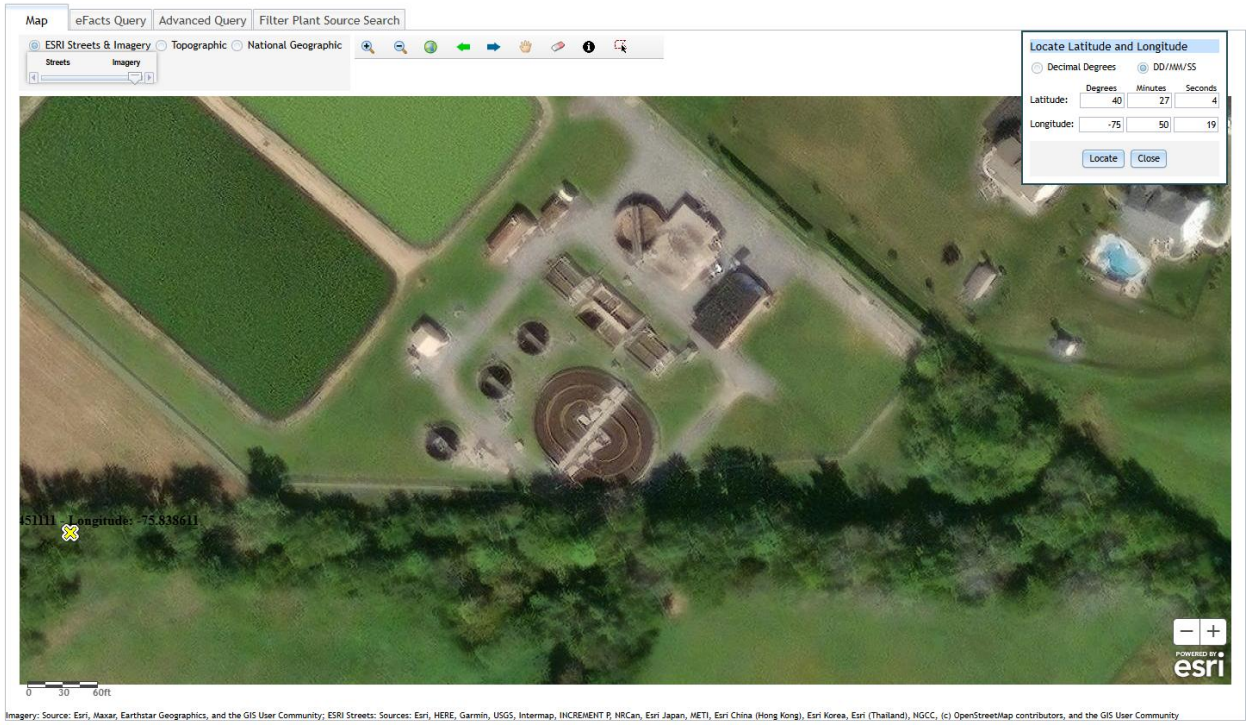


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The facility receives flow from the following municipalities:

Richmond Township	16%
Fleetwood Borough	84%

The facility has one significant industrial user discharging to the facility. The industrial user is Sunsweet Growers, Inc. This facility discharges approximately 0.1308 MGD.

EPA issued a pretreatment requirement letter dated for November 8, 2024

The facility did not receive any hauled in wastes in the next three years. The facility also does not anticipate receiving hauled-in wastes in the next five years.

2.2 Description of Wastewater Treatment Process

The subject facility is a 0.7 MGD average annual design flow facility. The subject facility treats wastewater using an influent comminutor, a pumping station, primary clarifiers, two oxidation ditches, secondary clarifiers, a UV disinfection system prior to discharge through the outfall. The facility is being evaluated for flow, pH, dissolved oxygen, TRC, CBOD5, TSS, total dissolved solids; fecal coliform, ultraviolet disinfection, nitrogen species, phosphorus, and copper. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary

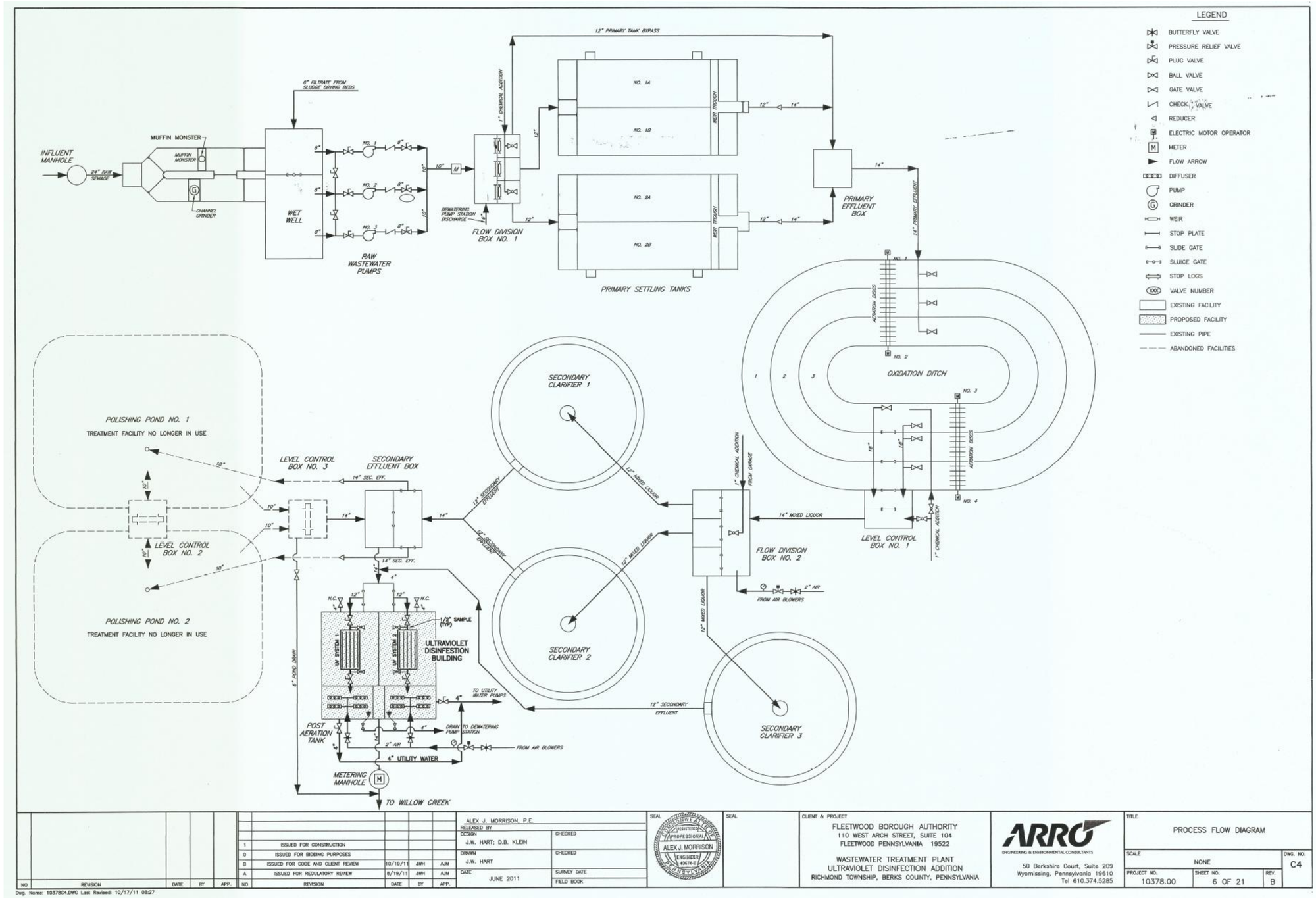
Treatment Facility Name: Fleetwood Borough STP

WQM Permit No.	Issuance Date
0687409	A-6
0687409	A-7

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Oxidation Ditch	Ultraviolet	0.7

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.882	1706	Not Overloaded	Aerobic Digestion	Other WWTP

A process flow diagram for the treatment facility is depicted.



NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BIDDING PURPOSES			
B	ISSUED FOR CODE AND CLIENT REVIEW	10/19/11	JWH	AJM
A	ISSUED FOR REGULATORY REVIEW	8/19/11	JWH	AJM

ALEX J. MORRISON, P.E.
RELEASED BY
DESIGN: J.W. HART; D.B. KLEIN — CHECKED
DRAWN: J.W. HART — CHECKED
DATE: JUNE 2011 — SURVEY DATE — FIELD BOOK

SEAL: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ALEX J. MORRISON ENGINEER 40674-E

CLIENT & PROJECT
FLEETWOOD BOROUGH AUTHORITY
110 WEST ARCH STREET, SUITE 104
FLEETWOOD PENNSYLVANIA 19522

WASTEWATER TREATMENT PLANT
ULTRAVIOLET DISINFECTION ADDITION
RICHMOND TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

ARRO ENGINEERING & ENVIRONMENTAL CONSULTANTS
50 Berkshire Court, Suite 209
Wyomissing, Pennsylvania 19610
Tel 610.374.5285

TITLE: PROCESS FLOW DIAGRAM
SCALE: NONE
DWG. NO.: C4
PROJECT NO.: 10378.00
SHEET NO.: 6 OF 21
REV.: B

Dwg. Name: 10378C4.DWG Last Revised: 10/17/11 08:27

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.7
Latitude	40º 27' 4.16"	**Longitude**	-75º 50' 19.60"
Wastewater Description:	Sewage Effluent		

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Polymer for coagulant
- Sodium hypochlorite for filamentous bacteria growth

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40º 27' 4.16" , **Longitude** 75º 50' 19.60" , **River Mile Index** 6.46 , **Stream Code** 01986

Receiving Waters: Willow Creek (CWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **October 1, 2019** through **September 30, 2024**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2]	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.1	XXX	0.3	Daily when Discharging	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	146.0	233.0	XXX	25.0	40.0	50.0	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	81.0	128.0	XXX	14.0	22.0	30.0	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	175.0	262.0	XXX	30.0	45.0	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Dissolved Solids	Report	XXX	XXX	1000.0	XXX	XXX	1/quarter	24-Hr Composite

Outfall 001 , Continued (from October 1, 2019 through September 30, 2024)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	Report	XXX	Report	1/day	Metered
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	24.0	XXX	XXX	4.2	XXX	8.4	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	8.0	XXX	XXX	1.4	XXX	2.8	1/week	24-Hr Composite
Ammonia-Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Kjeldahl Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Copper, Total	0.12	XXX	XXX	0.022	XXX	0.044	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

02/14/2019:

Since the last inspection the following items were completed:

- Control thermometer was added to the effluent composite sampler
- Daily log was started.
- Spot repairs and slip lining on collection system Vine St lift station, pump replaced and pump repaired. Section of sewer main replaced on Poplar St.

The reed bed was demolished and the dewatering press was installed.

08/05/2020:

- On 8/4/2020, Fleetwood STP provided notification of an overflow from the oxidation ditch & Vine St. Pump Station as well as solids loss from the final clarifiers.
- Plant flows continue to be greater than 1.25 MGD.

- Vine Street Pump Station was inspected. Overflow occurred from upstream manhole and traveled into a farmer's field where it merged with flooded stream. A layer of solids was noted near pump station.
- A diesel pump was in use during high flows to lessen collection system backup.

03/02/2021

- Mr. Matt Irving (STP Superintendent) provided notification to the DEP in regards to a solids loss event at Fleetwood STP. Mr. Irving stated that solids loss was discovered from clarifier #2. It was determined that the return/waste pipe had clogged overnight and as a result the blanket rose. STP flows were high due to recent rainfall and snow melt.

The facility was cited for violation of P.L. 1987, No. 394, Sec 201: CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth An unpermitted discharge of partially treated sewage and sewage solids to Willow Creek, waters of the Commonwealth, is a violation of your NPDES permit and Sections 201 & 202 of the Clean Streams Law.

07/10/2023:

Notification from Fleetwood of flooding at the STP and discharge of sewage was received to the DEP emergency response line on 7/9/2023. Multiple reports were received of extremely high rain totals within a few hours from facilities in central Berks County. Overflow of sewage and sewage sludge occurred from primary clarifier and digester. Fleetwood STP UV disinfection system was flooded. Fleetwood was chlorinating with calcium hypochlorite pucks. Facility has existing effluent limits for Total Residual Chlorine.

03/08/2024:

The two Enaqua UV disinfection banks were recently repaired after a rain event on July 9th, 2023, flooded the UV system building. After the flood, the facility repaired the banks and installed a PLC that communicates data with the facility's SCADA system. This system also has the ability to scale the level of intensity emitted in proportion to the flow being conveyed to the systems.

DEP recommended the following:

1. Continue to maintain good housekeeping.
2. Inform the DEP when the facility begins work on the installation of the mechanical bar screen and components.
3. Please notify the DEP and collect 24-hour composite samples when the facility bypasses treatment, shuts down aeration or otherwise operates the WWTP differently to prevent solids from carrying over to the stream during wet weather or plant construction projects.
4. Monitor the deterioration of the concrete on the primary clarifiers and address as necessary to ensure structural integrity.
5. Consider implementing flow proportioned effluent and influent sampling.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.571 MGD in May 2025. The design capacity of the treatment system is 0.882 MGD.

The off-site laboratory used for the analysis of the parameters was Suburban Testing Labs located at 1037 MacArthur Road, Reading, PA 19602.

DMR Data for Outfall 001 (from July 1, 2024 to June 30, 2025)

Parameter	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24
Flow (MGD) Average Monthly	0.552	0.571	0.483	0.441	0.475	0.456	0.383	0.456	0.498	0.368	0.495	0.493
Flow (MGD) Daily Maximum	0.742	0.953	0.757	0.572	0.701	0.521	0.745	0.545	0.593	0.559	0.920	0.639
pH (S.U.) Instantaneous Minimum	7.56	7.58	7.34	7.40	7.50	7.55	7.57	7.43	7.83	7.39	7.79	7.68
pH (S.U.) Instantaneous Maximum	8.16	8.07	8.13	8.25	8.12	8.87	8.13	8.60	8.31	8.48	8.37	8.15
DO (mg/L) Instantaneous Minimum	6.28	7.84	8.06	9.26	7.54	9.95	9.4	8.15	7.6	7.5	7.28	8.25
TRC (mg/L) Average Monthly	GG	GG	GG	0.05	GG	GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	0.07	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (lbs/day) Average Monthly	17.9	22.8	< 15.1	12.1	23.9	14.4	< 11.7	21.4	24.9	21.2	17.6	42.4
CBOD5 (lbs/day) Weekly Average	21.5	32.6	24.9	15.8	41.8	16.7	21.7	28.4	59.7	28.3	22.6	71.9
CBOD5 (mg/L) Average Monthly	3.7	4.3	< 3.7	2.9	5.9	3.4	< 3.1	5.3	5.8	7.4	4.2	9.8
CBOD5 (mg/L) Weekly Average	4.6	5.9	6.2	3.9	10.3	4.0	3.8	7.0	6.9	8.4	5.2	16.6
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	943	1372	1192	753	1243	1191	694	676	622	617	593	612
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	1087	2106	2093	935	2152	1588	864	848	966	944	811	998

BOD5 (mg/L) Raw Sewage Influent Average Monthly	196	257	299	182	314	284	206	167	144	210	145	139
TSS (lbs/day) Average Monthly	< 36.9	32.5	< 16.0	< 18.4	< 21.1	< 17.9	< 14.9	19.9	< 29.7	33.4	< 24.5	33.6
TSS (lbs/day) Raw Sewage Influent Average Monthly	1296	1365	1063	1030	4836	583	249	468	506	489	441	554
TSS (lbs/day) Raw Sewage Influent Daily Maximum	1572	1943	1232	1834	14512	1137	360	810	739	967	578	1226
TSS (lbs/day) Weekly Average	48.3	43.6	18.0	23.5	37.2	21.1	< 24.9	29.8	59.7	45.6	39.0	41.7
TSS (mg/L) Average Monthly	< 7.8	6.4	< 4.0	< 4.5	< 5.3	< 4.3	< 4.0	< 4.9	< 7.0	12.6	< 5.8	7.9
TSS (mg/L) Raw Sewage Influent Average Monthly	263	270	271	254	1238	139	73	115	117	191	107	122
TSS (mg/L) Weekly Average	11.2	9.5	4.2	5.8	9.0	5.0	< 4.0	7.0	14.2	19.0	8.5	9.8
Total Dissolved Solids (lbs/day) Average Monthly	1768	2000	1396	2147	2973	2059	2572	1710	1748	951	2034	1584
Total Dissolved Solids (lbs/day) Average Quarterly	1721			2393			407			2034		
Total Dissolved Solids (mg/L) Average Monthly	410.0	436.0	450.0	450.0	732.0	488.0	414.0	422.0	407.0	413.0	468.0	366.0
Total Dissolved Solids (mg/L) Average Quarterly	432.0			556.6			1748.0			468.0		
Fecal Coliform (No./100 ml) Geometric Mean	< 2	< 1	< 1	< 1	< 3	2	< 1	< 2	< 2	< 2	< 3.0	< 2

Fecal Coliform (No./100 ml) Instantaneous Maximum	4	4	1	2	65	6	3	9	15	4	12	11
UV Intensity (mW/cm²) Instantaneous Minimum	0.118	0.106	0.101	0.1	0.103	0.101	0.109	0.100	0.101	0.148	0.102	0.127
UV Intensity (mW/cm²) Average Monthly	0.201	0.327	0.445	0.333	0.287	0.315	0.195	0.314	0.365	0.263	0.388	0.181
UV Intensity (mW/cm²) Instantaneous Maximum	1.32	0.860	1.92	0.97	0.880	1.34	0.350	0.650	3.2	0.800	0.970	0.255
Nitrate-Nitrite (mg/L) Average Monthly	9.23	12.8	13.6	17	1.54	16.2	17.55	17.1	14.2	15.32	11.46	11.3
Nitrate-Nitrite (lbs) Total Monthly	1351	2103	1615	70	173	2104	1880	2089	1900	1273	1496	1478
Total Nitrogen (mg/L) Average Monthly	10.66	14	14.8	18.5	20.9	18.2	18.62	18.2	15.7	17.2	12.7	12.8
Total Nitrogen (lbs) Total Monthly	1554	2283	1755	76	2339	2368	2009	2226	2097	1430	1657	1672
Ammonia (lbs/day) Average Monthly	< 0.5	< 0.5	< 0.4	< 0.4	< 0.4	< 3.5	< 0.4	< 0.4	< 0.4	< 0.3	< 0.4	< 0.4
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (mg/L) Instantaneous Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (lbs) Total Monthly	< 14.7	< 16.5	< 11.9	< 0.4	< 11.2	< 107.9	< 11.6	< 12.2	< 13.4	< 8.9	< 13.0	< 13.2
TKN (mg/L) Average Monthly	1.41	1.14	1.17	1.47	1.54	1.99	18.62	1.09	1.49	1.88	1.27	1.49
TKN (lbs) Total Monthly	201	177	142	193	173	260	130	132	199	158	164	196
Total Phosphorus (lbs/day) Average Monthly	11	16	12	13	11	9	13	11	10	11	11	13
Total Phosphorus (mg/L) Average Monthly	2.29	3.0	2.91	3.15	2.63	2.16	3.51	2.7	15.7	4.09	2.62	2.27
Total Phosphorus (lbs) Total Monthly	337	496	350	398	294	281	390	329	325	329	344	297

Total Copper (lbs/day) Average Monthly	0.04	0.04	0.03	0.04	0.05	0.04	0.04	0.04	0.05	0.03	0.04	0.06
Total Copper (mg/L) Average Monthly	0.009	0.009	0.009	0.010	0.012	0.009	0.011	0.010	0.012	0.013	0.011	0.014

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in October 1, 2019 to August 12, 2025, the following were observed effluent non-compliances.

Summary of Non-Compliance with NPDES Effluent Limits
Beginning on October 1, 2019 and Ending Auguts 12, 2025

NON_COMPLIANCE_DATE	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITIO	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	DISCHARGE_COMMENTS
11/22/2019	Other Violations							
4/21/2020	Unauthorized Discharges							Kevin Dunn arrived at the wastewater treatment plant at 8AM on April 5th. He found solids spilling over the weir on our #2 clarifier. He immediately stopped flow into the clarifier ending the discharge of solids from the clarifier. The problem was caused by a clogged RAS/WAS valve for #2 clarifier. This caused the clarifier to fill with solids. The clog was removed from valve allowing normal RAS/WAS flow from the clarifier. The clarifier was put back in service. Willow Creek was inspected down stream of our outfall no fish kill or sludge was evident. There was no clean up for this event.
8/13/2020	Effluent	Copper, Total	0.047	>	.022	mg/L	Average Monthly	
8/13/2020	Effluent	Copper, Total	0.20	>	.12	lbs/day	Average Monthly	
4/26/2021	Unauthorized Discharges							On March 2nd I notified Erick Ammon of the DEP that some solids from one of our secondary clarifiers went over the weirs and out of the plant via the effluent. There was no impact seen. Lab results from samples taken that day show no significant change to normal effluent quality.
4/26/2021	Other Violations							
10/12/2021	Unauthorized Discharges							See attached Report
4/17/2023	Effluent	Fecal Coliform	> 2	>	2000	No./100 ml	Geometric Mean	
8/22/2023	Effluent	Ammonia-Nitrogen	2.99	>	2.8	mg/L	stantaneous Maximu	
8/22/2023	Effluent	Fecal Coliform	20000	>	1000	No./100 ml	stantaneous Maximu	
4/16/2024	Effluent	Ammonia-Nitrogen	41.6	>	24.0	lbs/day	Average Monthly	
4/16/2024	Effluent	Ammonia-Nitrogen	6.8	>	4.2	mg/L	Average Monthly	
5/20/2024	Effluent	Carbonaceous Biochemical Oxygen	158.1	>	146.0	lbs/day	Average Monthly	
5/20/2024	Effluent	Carbonaceous Biochemical Oxygen	45.9	>	40.0	mg/L	Weekly Average	
5/20/2024	Effluent	Carbonaceous Biochemical Oxygen	467.0	>	233.0	lbs/day	Weekly Average	
5/20/2024	Effluent	Copper, Total	0.023	>	.022	mg/L	Average Monthly	
5/20/2024	Effluent	Copper, Total	0.20	>	.12	lbs/day	Average Monthly	
5/20/2024	Effluent	Total Suspended Solids	130.0	>	45.0	mg/L	Weekly Average	
5/20/2024	Effluent	Total Suspended Solids	1322.7	>	262.0	lbs/day	Weekly Average	
5/20/2024	Effluent	Total Suspended Solids	372.2	>	175.0	lbs/day	Average Monthly	
5/20/2024	Effluent	Total Suspended Solids	40.6	>	30.0	mg/L	Average Monthly	
11/27/2024	Effluent	Total Dissolved Solids	1748.0	>	1000.0	mg/L	Average Quarterly	

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning in October 1, 2019 to August 12, 2025, there were no observed enforcement actions.

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility is as follows.

2024			
Sewage Sludge / Biosolids Production Information			
Hauled Off-Site			
2024	Tons Dewatered	% Solids	Dry Tons
January	27.4	16.1	4.37
February	70.12	14.22	9.932
March	59	16.44	9.475
April	32.72	17.17	5.744
May	31.15	18.47	2.48
June	33.44	22.7	7.329
July	32.3	16.93	5.443
August	34.53	15.33	5.319
September	22.33	14.85	3.315
October	44.7	14.8	6.634
November	30.19	16.27	4.836
December	Wrong form submitted	Wrong form submitted	Wrong form submitted
Notes:			
Biosolids/sewage sludge disposed at Rolling Hills Landfill in Delaware County as sewage sludge			
The December 2024 supplemental form submitted was for WET testing and not biosolids			

3.5 Open Violations

No open violations existed as of August 2025.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Willow Creek. The sequence of receiving streams that the Willow Creek discharges into are the Maiden Creek, the Schuylkill River, and the Delaware River which eventually drains into the Delaware Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Pottstown Borough Water Authority (PWS ID #1460037) located approximately 37 miles downstream of the subject facility on the Schuylkill River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2024 Integrated List of All Waters (303d Listed Streams)

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2024 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 4c and 5 stream listed in the 2024 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an impaired stream for aquatic life due to flow regime modification from natural sources. The stream is also impaired for recreational uses due to pathogens. The designated use has been classified as protected waters for cold water fishes (CWF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is the Schuylkill River (WQN111). This WQN station is located approximately 39 miles downstream from the subject facility.

The closest gauge station to the subject facility is the Schuylkill River station at Reading, PA (USGS station number 1471510). This gauge station is located approximately 18 miles downstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 8.05 and the stream water temperature was estimated to be 23.3 C.

The hardness of the stream was estimated from the water quality network to be 136 mg/l $CaCO_3$.

The low flow yield and the Q710 for the subject facility was estimated using StreamStats.

At the discharge point, the low flow yield is 0.205 $ft^3/s/mi^2$ and the Q710 is 0.806 ft^3/s.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.7
Latitude	40º 27' 3.79"	Longitude	-75º 50' 19.60"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Willow Creek (CWF)	Stream Code	1986
NHD Com ID	25973034	RMI	6.33
Drainage Area	3.93	Yield (cfs/mi^2)	0.205
Q_{7-10} Flow (cfs)	0.806	Q_{7-10} Basis	StreamStats
Elevation (ft)	381	Slope (ft/ft)	
Watershed No.	3-B	Chapter 93 Class.	CWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, PATHOGENS, SILTATION		
Source(s) of Impairment	NATURAL SOURCES, NATURAL SOURCES, SOURCE UNKNOWN		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.05	WQN111; Median July to Sept
Temperature (°C)	23.33	WQN111; Median July to Sept
Hardness (mg/L)	136	Median Historical
Other:		

Nearest Downstream Public Water Supply Intake	Pottstown Borough Water Authority		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	12,000,000
PWS RMI		Distance from Outfall (mi)	

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

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

5.2.2 Mass Based Limits

For publicly owned treatment works (POTW), mass loadings are calculated based upon design flow rate of the facility and the permit limit concentration. The generalized calculation for mass loadings is shown below:

$$Quantity\ \left(\frac{lb}{day}\right) = (MGD)(Concentration)(8.34)$$

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

The modeling point nodes utilized for this facility are summarized below.

General Data 1	***(Modeling Point #1)***	***(Modeling Point #2)***	***Units***
Stream Code	1986	1986	
River Mile Index	6.33	3.01	miles
Elevation	381	307	feet
Latitude	40.451111	40.44738	
Longitude	-75.838611	-75.896506	
Drainage Area	3.93	18.2	sq miles
Low Flow Yield	0.205	0.159	cfs/sq mile

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) a 30-day average concentration for CBOD5 in the discharge;
(c) a 30-day average concentration for the NH_3-N in the discharge;
(d) *24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 Toxics Modeling

The Toxics Management Spreadsheet model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. Toxics Management Spreadsheet does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

Acute Fish Criterion (AFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e.15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

Chronic Fish Criterion (CFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

Threshold Human Health (THH) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

Cancer Risk Level (CRL) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The Toxics Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

5.3.2.1 Determining if NPDES Permit Will Require Monitoring/Limits in the Proposed Permit for Toxic Pollutants

To determine if Toxics modeling is necessary, DEP has developed a Toxics Management Spreadsheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters. The toxics reviewed for reasonable potential were the following pollutants: TDS. Chloride. Bromide, Sulfate, Total copper, Total Lead, and Total Zinc.

The NPDES application collected 1 sample for chloride, bromide, sulfate, total lead, and total zinc. A total of twenty samples were collected for TDS. A total of 162 samples were collected for Total Copper.

Based upon the SOP- Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants (Revised January 10, 2019), monitoring and/or limits will be established as follows.

(a) When reasonable potential is demonstrated, establish limits where the maximum reported concentration equals or exceeds 50% of the WQBEL.
(b) For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
(c) For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Applicable monitoring or permit limits for toxics are summarized in Section 6.

The Toxics Management Spreadsheet output has been included in Attachment B.

5.3.3 Whole Effluent Toxicity (WET)

Whole effluent toxicity is the aggregate toxic effect from a facility's wastewater discharge on aquatic organisms. WET measures the effect of wastewater effluent on an organisms' ability to survive, grow, and reproduce. WET testing is either acute or chronic. Acute testing measures lethality, the ability for an organism to survive after no more than 96 hours of exposure to an effluent. Chronic tests measures both lethality, immobility, and sublethal endpoints to exposures ranging longer than 96 hours and up to 8 days.

WET is required if the applicant satisfies any one of the following conditions.

(a) Major sewage facilities with an average annual design flow greater than or equal to 1.0 MGD (25 Pa. Code § 92a.27(a)(1)(i)).
(b) Sewage facilities with EPA-approved pretreatment programs or will be required in the permit to develop a program (25 Pa. Code § 92a.27(a)(1)(i)).
(c) Other facilities that are considered candidates for WET testing by one or more of the factors contained in 25 Pa. Code § 92a.27(a)(2).

5.3.3.1 WET Tests Review

The in-stream waste concentration and dilution series was estimated using partial mixing factor factors from Toxics Management Spreadsheet, the design flow rate for the facility, and the Q710.

The proposed NPDES permit shall utilize a chronic instream waste concentration of 57%. The complete dilution series will be 100%, 79%, 57%, 29%, and 14%.

The derivation is shown in the calculations.

Whole Effluent Toxicity (WET)

For Outfall 001, **Chronic** WET Testing was completed:

X	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%, 79%, 58%, 29%, and 15%. For the curent permit, the Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 58%. For the proposed permit, the Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 57%.

Summary of Four Most Recent Test Results

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

TST Data Analysis

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

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)		
	Survival	Reproduction	Survival	Growth	TIWC Used
3/31/2020	PASS	PASS	PASS	PASS	72%
4/29/2021	PASS	PASS	FAIL	FAIL	72%
6/23/2021			PASS	PASS	58%
4/5/2022	PASS	PASS	PASS	PASS	58%
6/13/2024	PASS	PASS	PASS	PASS	58%

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

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests). YES/NO*

Comments:

No; the facility experienced a WET test failure on April 2021. The TIWC used was 72%. The NPDES permit requires a TIWC 58%. The facility re-tested in June 2021 with passing WET tests for Pimephales Survival and Growth.

Data

PMFa =	1	
PMFc =	1	
Qd =	0.7	MGD
Q710 =	0.806	cfs

Step 1: Determine IWC - Acute (IWCa)

IWCa = [(Qd x 1.547) / ((Q7-10 x PMFa) + (Qd x 1.547))] x 100

IWCa = 57.33

Is IWCA < 1% No (Yes- acute tests required; No- chronic test required)

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

Type of Test for Permit Renewal:

Chronic test will be required

Step 2a: Determine Target IWCa (If acute tests required)

TIWCa = IWCA / 0.3

TIWCa = 191.10

Step 2b: Determine Target IWCc (If chronic tests required)

ICCc = [(Qd x 1.547) / ((Q7-10 x PWFc) + (Design Flow MGD x 1.547))] x 100

ICCc = 57.33

Step 3: Determine Dilution Series

Dilution Series =	100%	79%	57%	29%	15%

WET Limits

Has reasonable potential been determined ? No

Will WET limits be established in the permit ? No

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

Not applicable

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

Not applicable

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$TMDL = \Sigma WLAs + \Sigma LAs + MOS$$

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus, (c) Toxics, and (d) Non-Conventional Pollutants, and (e) Chapter 92a.61 targeted parameters

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection
Fleetwood Borough STP; PA0021636

Parameter	Permit Limitation Required by[1]:	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	Anti-backsliding	Monitoring:	The monitoring frequency shall be 1x/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	During the months of May 1 to Oct 31, effluent limits shall not exceed 81 lbs/day and 14 mg/l as an average monthly. During the months of Nov 1 to Apr 30, effluent limits shall not exceed 146 lbs/day and 25 mg/l as an average monthly.
		Rationale:	Due to anti-backsliding regulations, the current permit shall continue to the proposed permit
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 175 lbs/day and 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to recording the UV intensity.
		Effluent Limit:	There is no effluent requirement.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/week as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.70 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Fleetwood Borough STP; PA0021636

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	WQBEL/Table 6-3	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	During the months of May 1 to Oct 31, effluent limits shall not exceed 6 lbs/day and 1 mg/l as an average monthly. During the months of Nov 1 to Apr 30, effluent limits shall not exceed 17 lbs/day and 3 mg/l as an average monthly.
Nitrate-Nitrite as N	BPJ	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The monitoring frequency has been assigned in accordance with best professional judgment
Total Nitrogen	BPJ	Monitoring:	The monitoring frequency shall be 1x/mo as a calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	The monitoring frequency has been assigned in accordance with best professional judgment
TKN	BPJ	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The monitoring frequency has been assigned in accordance with best professional judgment
Total Phosphorus	Table 6-3	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.70 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3 Toxics

Summary of Proposed NPDES Parameter Details for Toxics

Fleetwood Borough STP; PA0021636

Parameter	Permit Limitation Required by[1]:	Recommendation	
TDS	DRBC	Monitoring:	The monitoring frequency shall be 1x/quarter as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 1,000 mg/l as an average monthly.
		Rationale:	Effluent limits required by DRBC
Total Copper	WQBEL	Monitoring:	The monitoring frequency shall be 1/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 0.10 lbs/day and 0.018 mg/l as an average monthly.
		Rationale:	Toxics Management Spreadsheet recommends water quality based effluent limits

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other
2 Monitoring frequency based on flow rate of 0.70 MGD.
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth.

Based upon DEP policy directives the following pollutants shall be monitored:

- Consistent with DEP Management directives issued on March 22, 2021 and in conjunction with EPA's 2017 Triennial Review, monitoring for E. Coli shall be required. The monitoring frequency is based upon flow rate.

Summary of Proposed NPDES Parameter Details for polluants monitored under Chapter 92a.61

Fleetwood Borough STP; PA0021636

Parameter	Permit Limitation Required by[1]:	Recommendation	
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised Febraury 5, 2024) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other
2 Monitoring frequency based on flow rate of 0.70 MGD.
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

- Ammonia nitrogen limits lowered to 1 mg/l during summer and 3 mg/l during winter. Based upon the DMR from July 2024 to June 2025, the facility should have no issues meeting the new effluent requirement.
- Total Copper: DMR monitoring data was reviewed from 2019 to 2025. The maximum concentration during this time frame was 0.047 mg/l.
  The NPDES application form requests the maximum concentration in the past 2 years. The maximum concentration from 2022 to May 2025 was 0.023 mg/l.
  The NPDES application reported a maximum concentration of 0.025 mg/l. The 0.025 mg/l concentration was used as the maximum concentration for TMS modeling.
  Total copper limits lowered to 0.018 mg/l as an average monthly. Based upon the DMR from July 2024 to June 2025, the facility should have no issues meeting the new effluent requirement.
- Due to the EPA triennial review, monitoring shall be required for E. Coli.

6.3.1 Summary of Proposed NPDES Effluent Limits

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40º 27' 4.16" , **Longitude** 75º 50' 19.60" , **River Mile Index** 6.33 , **Stream Code** 1986

Receiving Waters: Willow Creek (CWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	146.0	233.0	XXX	25.0	40.0	50	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	81.0	128.0	XXX	14.0	22.0	30	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	175.0	262.0	XXX	30.0	45.0	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Dissolved Solids	Report Avg Qrtly	XXX	XXX	1000.0 Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	Report	XXX	Report	1/day	Metered
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	17.0	XXX	XXX	3.0	XXX	6	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	6.0	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite
Ammonia-Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Kjeldahl Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Copper, Total	0.10	XXX	XXX	0.018	XXX	0.044	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

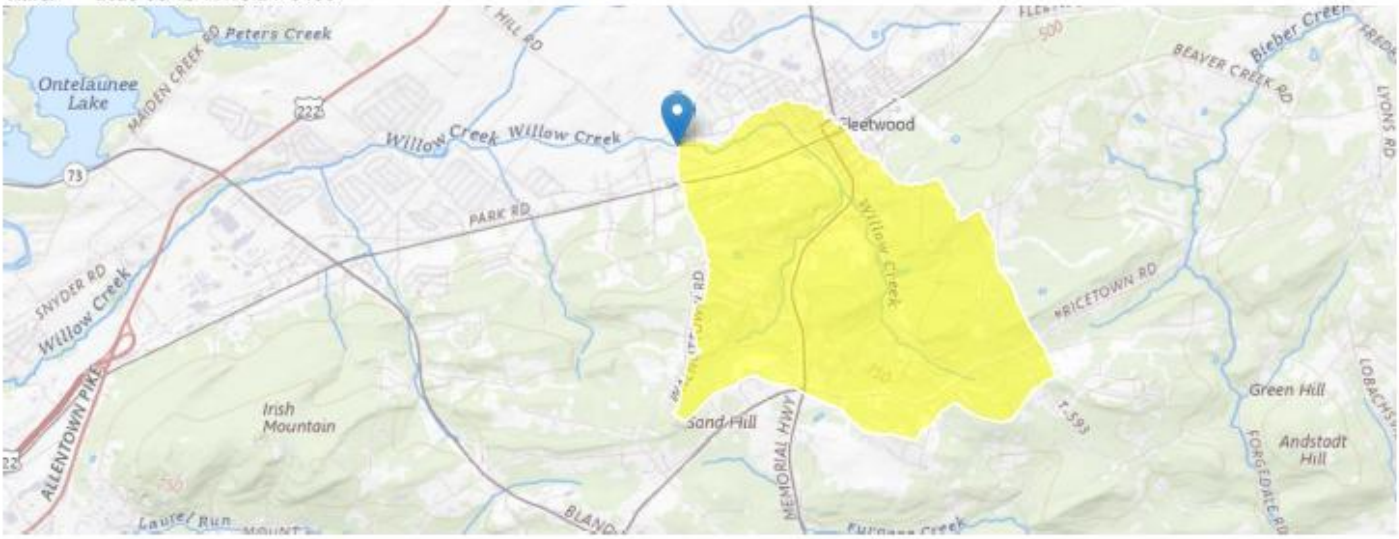
- Pretreatment
- High/Peak Flow Management
- DRBC requirements
- UV Monitoring Conditions
- Hauled-in Waste Restrictions
- Solids Management for Non-Lagoon Treatment Systems
- Whole Effluent Toxicity – No Permit Limits

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP:
☐	Other:

Attachment A
Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
Workspace ID: PA20250813151256996000
Clicked Point (Latitude, Longitude): 40.45105, -75.83858
Time: 2025-08-13 11:13:24 -0400



Fleetwood Borough PA0021636 Modeling Point #1 August 2025

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	5.857	degrees
CARBON	Percentage of area of carbonate rock	19.57	percent
DRNAREA	Area that drains to a point on a stream	3.93	square miles
PRECIP	Mean Annual Precipitation	47	inches
ROCKDEP	Depth to rock	5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.2	miles per square mile
URBAN	Percentage of basin with urban development	8.8032	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [2.0 Percent (0.0665 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	5.857	degrees	1.7	6.4
DRNAREA	Drainage Area	3.93	square miles	4.78	1150
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	8.8032	percent	0	89

Low-Flow Statistics Parameters [98.0 Percent (3.86 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	19.57	percent	0	99

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.93	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	47	inches	35	50.4
ROCKDEP	Depth to Rock	5	feet	3.32	5.65
STRDEN	Stream Density	1.2	miles per square mile	0.51	3.1

Low-Flow Statistics Disclaimers [2.0 Percent (0.0665 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [2.0 Percent (0.0665 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	1.53	ft^3/s
30 Day 2 Year Low Flow	1.83	ft^3/s
7 Day 10 Year Low Flow	0.806	ft^3/s
30 Day 10 Year Low Flow	0.99	ft^3/s
90 Day 10 Year Low Flow	1.33	ft^3/s

Low-Flow Statistics Disclaimers [98.0 Percent (3.86 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report [98.0 Percent (3.86 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	1.38	ft^3/s
30 Day 2 Year Low Flow	1.67	ft^3/s
7 Day 10 Year Low Flow	0.762	ft^3/s
30 Day 10 Year Low Flow	0.907	ft^3/s
90 Day 10 Year Low Flow	1.19	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

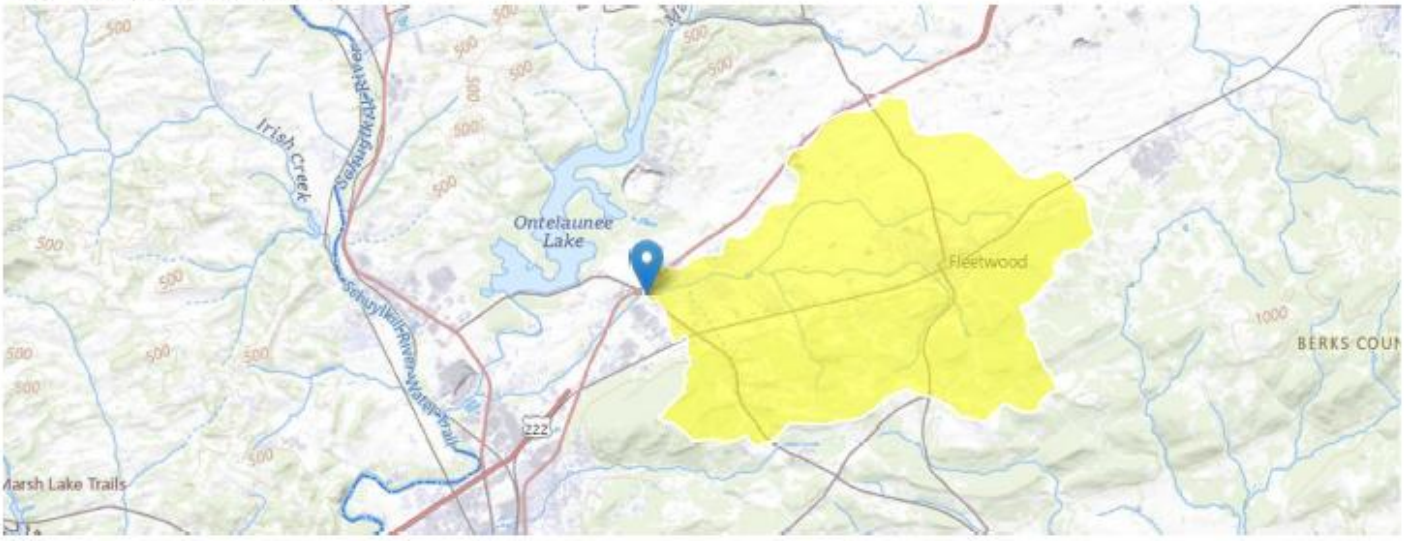
Statistic	Value	Unit
7 Day 2 Year Low Flow	1.38	ft^3/s
30 Day 2 Year Low Flow	1.67	ft^3/s
7 Day 10 Year Low Flow	0.763	ft^3/s
30 Day 10 Year Low Flow	0.909	ft^3/s
90 Day 10 Year Low Flow	1.19	ft^3/s

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/)

StreamStats Report

Region ID: PA
Workspace ID: PA20250813151639706000
Clicked Point (Latitude, Longitude): 40.44729, -75.89639
Time: 2025-08-13 11:17:04 -0400



Fleetwood Borough PA0021636 Modeling Point #3 August 2025

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	4.3408	degrees
CARBON	Percentage of area of carbonate rock	60.99	percent
DRNAREA	Area that drains to a point on a stream	18.2	square miles
PRECIP	Mean Annual Precipitation	46	inches
ROCKDEP	Depth to rock	5.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	0.96	miles per square mile
URBAN	Percentage of basin with urban development	6.4413	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [1.0 Percent (0.124 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	4.3408	degrees	1.7	6.4
DRNAREA	Drainage Area	18.2	square miles	4.78	1150
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	6.4413	percent	0	89

Low-Flow Statistics Parameters [99.0 Percent (18.1 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	60.99	percent	0	99

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	18.2	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46	inches	35	50.4
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
STRDEN	Stream Density	0.96	miles per square mile	0.51	3.1

Low-Flow Statistics Flow Report [1.0 Percent (0.124 square miles) Low Flow Region 1]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.53	ft^3/s	46	46
30 Day 2 Year Low Flow	6.86	ft^3/s	38	38
7 Day 10 Year Low Flow	2.89	ft^3/s	51	51
30 Day 10 Year Low Flow	3.61	ft^3/s	46	46
90 Day 10 Year Low Flow	5.33	ft^3/s	41	41

Low-Flow Statistics Flow Report [99.0 Percent (18.1 square miles) Low Flow Region 2]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	13.9	ft^3/s	38	38
30 Day 2 Year Low Flow	14.9	ft^3/s	33	33
7 Day 10 Year Low Flow	9.91	ft^3/s	51	51
30 Day 10 Year Low Flow	10.5	ft^3/s	46	46
90 Day 10 Year Low Flow	11.2	ft^3/s	36	36

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	13.8	ft^3/s
30 Day 2 Year Low Flow	14.8	ft^3/s
7 Day 10 Year Low Flow	9.84	ft^3/s
30 Day 10 Year Low Flow	10.4	ft^3/s
90 Day 10 Year Low Flow	11.1	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: 4.29.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01465780	Poquessing Creek above Byberry Creek at Phila., Pa.	40.070	-74.975	13.2	N
01465798	Poquessing Creek at Grant Ave. at Philadelphia, Pa.	40.057	-74.985	21.4	N
01465850	South Branch Rancocas Creek at Vincentown, N.J.	39.94	-74.763	64.5	N
01466500	McDonalds Branch in Byrne State Forest, N.J.	39.885	-74.505	2.35	N
01467000	North Branch Rancocas Creek at Pemberton, N.J.	39.97	-74.684	118	N
01467042	Pennypack Creek at Pine Road, at Philadelphia, Pa.	40.090	-75.069	37.9	N
01467048	Pennypack Creek at Lower Rhawn St Bdg, Phila., Pa.	40.050	-75.033	49.8	N
01467050	Wooden Bridge Run at Philadelphia, Pa.	40.055	-75.022	3.35	N
01467081	South Branch Pennsauken Creek at Cherry Hill, N.J.	39.942	-75.001	8.98	N
01467086	Tacony Creek ab Adams Avenue, Philadelphia, Pa.	40.047	-75.111	16.7	N
01467087	Frankford Creek at Castor Ave, Philadelphia, Pa.	40.016	-75.097	30.4	N
01467089	Frankford Creek at Torresdale Ave., Phila., Pa.	40.007	-75.092	33.8	N
01467150	Cooper River at Haddonfield, N.J.	39.903	-75.021	17.0	N
01467500	Schuylkill River at Pottsville, Pa.	40.684	-76.186	53.4	N
01468500	Schuylkill River at Landingville, Pa.	40.629	-76.125	133	N
01469500	Little Schuylkill River at Tamaqua, Pa.	40.807	-75.972	42.9	N
01470500	Schuylkill River at Berne, Pa.	40.523	-75.998	355	N
01470756	Maiden Creek at Virginville, Pa.	40.514	-75.883	159	N
01470779	Tulpehocken Creek near Bernville, Pa.	40.413	-76.172	66.5	N
01470853	Furnace Creek at Robesonia, Pa.	40.340	-76.143	4.18	N
01470960	Tulpehocken Creek at Blue Marsh Damsite near Reading, Pa.	40.371	-76.025	175	Y
01471000	Tulpehocken Creek near Reading, Pa.	40.369	-75.979	211	Y
01471510	Schuylkill River at Reading, Pa.	40.335	-75.936	880	Y
01471875	Manatawny Creek near Spangsville, Pa.	40.340	-75.742	56.9	N
01471980	Manatawny Creek near Pottstown, Pa.	40.273	-75.680	85.5	N
01472000	Schuylkill River at Pottstown, Pa.	40.242	-75.652	1,147	Y
01472157	French Creek near Phoenixville, Pa.	40.151	-75.601	59.1	N
01472174	Pickering Creek near Chester Springs, Pa.	40.090	-75.630	5.98	N
01472198	Perkiomen Creek at East Greenville, Pa.	40.394	-75.515	38.0	N
01472199	West Branch Perkiomen Creek at Hillegass, Pa.	40.374	-75.522	23.0	N
01472500	Perkiomen Creek near Frederick, Pa.	40.275	-75.455	152	N
01472620	East Branch Perkiomen Creek near Dublin, Pa.	40.404	-75.234	4.05	LF
01472810	East Branch Perkiomen Creek near Schwenksville, Pa.	40.259	-75.429	58.7	LF
01473000	Perkiomen Creek at Graterford, Pa.	40.230	-75.452	279	LF
01473120	Skippack Creek near Collegeville, Pa.	40.165	-75.433	53.7	N
01473169	Valley Creek at Pa. Turnpike Br near Valley Forge, Pa.	40.079	-75.461	20.8	N
01473500	Schuylkill River at Norristown, Pa.	40.111	-75.347	1,760	N
01473900	Wissahickon Creek at Fort Washington, Pa.	40.124	-75.220	40.8	N
01473950	Wissahickon Creek at Bells Mill Rd, Phila., Pa.	40.080	-75.226	53.6	N
01473980	Wissahickon Creek at Livezey Lane, Phila., Pa.	40.050	-75.214	59.2	N
01474000	Wissahickon Creek at Mouth, Philadelphia, Pa.	40.015	-75.207	64.0	N
01474500	Schuylkill River at Philadelphia, Pa.	39.968	-75.189	1,893	N
01475000	Mantua Creek at Pitman, N.J.	39.737	-75.113	6.05	N
01475300	Darby Creek at Waterloo Mills near Devon, Pa.	40.023	-75.422	5.15	N
01475510	Darby Creek near Darby, Pa.	39.929	-75.272	37.4	N

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01453000	[3]1904–1927	18	237	312	447	378	546	472
01454700	1968–2005	38	471	510	745	600	902	760
01455500	1930–2008	52	0	.4	7.8	—	—	6.0
01457000	1905–2008	89	40.6	45.6	70.5	52.2	81.7	62.5
01459500	[2]1975–2008	34	1.9	2.1	4.1	2.9	7.1	5.7
01459500	[3]1937–1973	37	.4	.9	2.1	1.3	3.6	2.9
01463500	1914–2008	95	1,540	1,720	2,700	1,960	3,120	2,430
01463620	1974–2008	19	2.4	2.7	7.6	4.8	10.6	8.6
01464000	1925–2008	84	9.4	14.2	25.7	18.7	34.2	29.3
01464500	1942–2008	65	16.4	18.9	34.0	24.4	42.3	37.3
01464645	1987–2008	22	3.3	3.6	12.3	4.4	13.6	5.4
01464720	1992–2008	17	3.0	3.6	5.8	4.5	7.3	6.2
01465000	1886–1934	28	—	3.4	10.1	4.9	15.0	12.9
01465500	1936–2008	73	9.0	12.7	26.4	17.3	37.4	28.6
01465770	1966–1982	16	.3	.4	1.2	.8	1.7	1.7
01465798	1967–2008	42	1.0	1.2	3.6	3.0	6.8	7.9
01465850	1963–2008	19	5.2	8.5	13.2	12.1	19.5	17.1
01466500	1955–2008	54	.8	.8	1.1	.9	1.2	.9
01467000	1923–2008	86	26.2	34.2	51.8	41.6	63.2	53.2
01467042	1966–1981	16	8.6	9.3	16.8	11.3	21.5	17.0
01467048	1967–2008	42	10.7	12.1	18.9	16.6	27.2	26.6
01467050	1967–1981	15	.3	.4	.8	.7	1.3	1.6
01467081	1969–2008	38	2.4	2.9	4.1	3.9	6.0	6.3
01467086	1967–1988	23	3.3	4.4	6.9	6.6	9.9	10.4
01467087	1984–2008	25	1.6	2.1	6.1	4.8	10.1	12.0
01467089	1968–1982	15	4.8	6.6	9.6	10.3	16.0	20.1
01467150	1965–2008	44	3.9	5.4	10.1	7.3	13.2	11.5
01467500	1945–1969	25	14.6	17.2	24.5	19.8	28.5	23.4
01468500	1949–2008	40	40.8	44.5	70.6	52.1	82.4	65.0
01469500	1921–2008	88	4.8	5.5	10.9	7.3	14.4	10.1
01470500	1949–2008	60	69.2	82.3	137	102	164	133
01470756	1974–1995	22	14.8	16.7	30.5	23.4	43.9	35.5
01470779	1976–2008	33	21.9	24.6	39.3	29.4	45.2	34.8
01470853	1984–2005	22	.2	.4	1.2	.8	1.6	1.1
01470960	[2]1980–2008	29	29.4	31.8	52.4	47.0	74.7	66.3
01470960	[3]1967–1978	12	32.7	38.2	74.0	47.6	88.3	59.5
01471000	[2]1980–2008	29	36.9	43.4	69.4	58.9	93.9	81.0
01471000	[3]1952–1978	27	41.8	47.6	77.1	55.3	91.2	68.6
01471510	[2]1980–2008	29	222	244	347	274	422	340
01471510	[3]1916–1930	10	142	173	279	206	337	245
01471875	1995–2008	14	10.9	11.8	21.2	14.1	25.3	19.0
01471980	1976–2004	29	16.5	17.8	29.2	21.7	34.9	29.7
01472000	[2]1980–2008	29	276	301	432	349	527	453
01472000	[3]1929–1978	50	228	258	411	298	486	374
01472157	1970–2008	39	9.5	10.2	17.2	12.5	21.8	17.0

Attachment B

WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet Output Values

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03B	1986	WILLOW CREEK

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)
6.330	Fleetwood Boro	PA0021636	0.700	CBOD5	25		
				NH3-N	1.12	2.24	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03B	1986	WILLOW CREEK

NH3-N Acute Allocation

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.330	Fleetwood Boro	2.9	4.86	2.9	4.86	0	0

NH3-N Chronic Allocation

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.330	Fleetwood Boro	.61	1.12	.61	1.12	0	0

Dissolved Oxygen Allocation

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		
6.33	Fleetwood Boro	25	25	1.12	1.12	5	5	0	0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03B	1986	WILLOW CREEK	**6.330**	381.00	3.93	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	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.205	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.33	8.05	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
Fleetwood Boro	PA0021636	0.7000	0.7000	0.7000	0.000	25.00	7.92

Parameter Data

Parameter Name	Disc Conc (mg/L	Trib Conc (mg/L	Stream Conc (mg/L)	Fate Coef (1/days
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	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
03B	1986	WILLOW CREEK	**3.010**	307.00	18.20	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	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.159	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.33	8.05	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 D.O.Simulation

SWP Basin	Stream Code	Stream Name
03B	1986	WILLOW CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
6.330	0.700	24.288	7.971
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
15.590	0.553	28.169	0.219
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
15.19	1.303	0.64	0.974
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.383	9.719	Tsivoglou	5
Reach Travel Time (days)			
0.927			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.093	13.11	0.59	5.43
0.185	11.32	0.54	5.34
0.278	9.77	0.49	5.55
0.371	8.43	0.45	5.86
0.463	7.28	0.41	6.17
0.556	6.28	0.38	6.46
0.649	5.43	0.34	6.72
0.742	4.68	0.31	6.95
0.834	4.04	0.29	7.15
0.927	3.49	0.26	7.33

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
03B	1986	WILLOW CREEK

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	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flo												
6.330	0.81	0.00	0.81	1.0829	0.00422	.553	15.59	28.17	0.22	0.927	24.29	7.97
Q1-10 Flo												
6.330	0.73	0.00	0.73	1.0829	0.00422	NA	NA	NA	0.21	0.948	24.33	7.97
Q30-10 Flo												
6.330	0.90	0.00	0.90	1.0829	0.00422	NA	NA	NA	0.23	0.901	24.24	7.97

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	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.12	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Fleetwood** NPDES Permit No.: **PA0021636** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **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
0.7	100	7.92						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		604									
	Chloride (PWS)	mg/L		137									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		23.7									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		25									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		3									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		27									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

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

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Fleetwood, NPDES Permit No. PA0021636, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Willow Creek**

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	001986	6.33	381	3.93			Yes
End of Reach 1	001986	3.01	307	18.2			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	6.33	0.205										136	8.05		
End of Reach 1	3.01	0.159										136	8.05		

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	6.33														
End of Reach 1	3.01														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Fleetwood, NPDES Permit No. PA0021636, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 2.266 PMF: 1 Analysis Hardness (mg/l): 115.36 Analysis pH: 7.97

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	15.376	16.0	27.9	Chem Translator of 0.96 applied
Total Lead	0	0		0	75.424	97.9	171	Chem Translator of 0.77 applied
Total Zinc	0	0		0	132.259	135	236	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 2.266 PMF: 1 Analysis Hardness (mg/l): 115.36 Analysis pH: 7.97

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	10.119	10.5	18.4	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.939	3.82	6.66	Chem Translator of 0.77 applied
Total Zinc	0	0		0	133.341	135	236	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 2.266 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	

Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 3.711 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.1	0.16	17.9	27.9	44.8	µg/L	17.9	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	6.66	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	151	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable

Attachment C

WET Results

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/7/2020

Replicate No.	Control	72
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:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/7/2020

Replicate No.	Control	72
1	34	43
2	34	43
3	33	42
4	27	39
5	35	40
6	38	35
7	44	35
8	36	46
9	38	40
10	40	39
11		
12		
13		
14		
15		
Mean	35.900	40.200
Std Dev.	4.557	3.490
# Replicates	10	10

T-Test Result: 8.5943
Deg. of Freedom: 17
Critical T Value: 0.8633
Pass or Fail: PASS

Test Completion Date:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

Data input was in error. See corrected WET result in Attachment E.

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/7/2020

Replicate No.	Control	72%
1	10	10
2	10	9
3	9	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.500
Std Dev.	0.500	0.577
# Replicates	4	4

T-Test Result: 5.3848
Deg. of Freedom: 5
Critical T Value: 0.7267
Pass or Fail: PASS

Test Completion Date:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/7/2020

Replicate No.	Control	72%
1	0.377	0.438
2	0.436	0.468
3	0.495	0.51
4	0.465	0.524
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.443	0.485
Std Dev.	0.050	0.039
# Replicates	4	4

T-Test Result: 5.5973
Deg. of Freedom: 5
Critical T Value: 0.7267
Pass or Fail: PASS

Test Completion Date:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Replicate No.	Test Completion Date: 4/5/2022 Control	TIWC
1	9	10
2	10	9
3	10	9
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.500
Std Dev.	0.500	0.577
# Replicates	4	4

T-Test Result: 5.3848
Deg. of Freedom: 5
Critical T Value: 0.7267
Pass or Fail: PASS

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

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

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

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

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/5/2022

Replicate No.	Control	TIWC
1	0.363	0.354
2	0.369	0.31
3	0.388	0.36
4	0.385	0.399
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.376	0.356
Std Dev.	0.012	0.036
# Replicates	4	4

T-Test Result: 3.9164
Deg. of Freedom: 4
Critical T Value: 0.7407
Pass or Fail: PASS

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/5/2022

Replicate No.	Control	TIWC
1	36	36
2	36	42
3	44	34
4	12	36
5	45	36
6	33	30
7	38	44
8	41	28
9	40	27
10	31	40
11		
12		
13		
14		
15		
Mean	35.600	35.300
Std Dev.	9.419	5.736
# Replicates	10	10

T-Test Result	2.9887
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/5/2022

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:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

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

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/29/2021

Replicate No.	Control	72%
1	9	6
2	10	3
3	10	6
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	6.250
Std Dev.	0.500	2.872
# Replicates	4	4

T-Test Result: -0.4985
Deg. of Freedom: 3
Critical T Value: 0.7649
Pass or Fail: FAIL

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/29/2021

Replicate No.	Control	72%
1	0.356	0.259
2	0.412	0.119
3	0.428	0.272
4	0.377	0.082
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.394	0.183
Std Dev.	0.032	0.097
# Replicates	4	4

T-Test Result	-2.2589
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	FAIL

Test Completion Date:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/29/2021

Replicate No.	Control	72
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	0	1
11		
12		
13		
14		
15		
Mean	0.900	1.000
Std Dev.	0.316	0.000
# Replicates	10	10

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

Test Completion Date

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

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

Test Completion Date

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/29/2021

Replicate No.	Control	72
1	30	36
2	44	39
3	39	46
4	32	40
5	41	37
6	37	40
7	32	29
8	39	42
9	36	30
10	2	34
11		
12		
13		
14		
15		
Mean	33.200	37.300
Std Dev.	11.802	5.272
# Replicates	10	10
T-Test Result	3.8061	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/29/2021

Replicate No.	Control	TIWC
1	0.342	0.372
2	0.331	0.345
3	0.369	0.402
4	0.359	0.365
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.350	0.371
Std Dev.	0.017	0.024
# Replicates	4	4

T-Test Result: 8.0702
Deg. of Freedom: 5
Critical T Value: 0.7267
Pass or Fail: PASS

Test Completion Date:

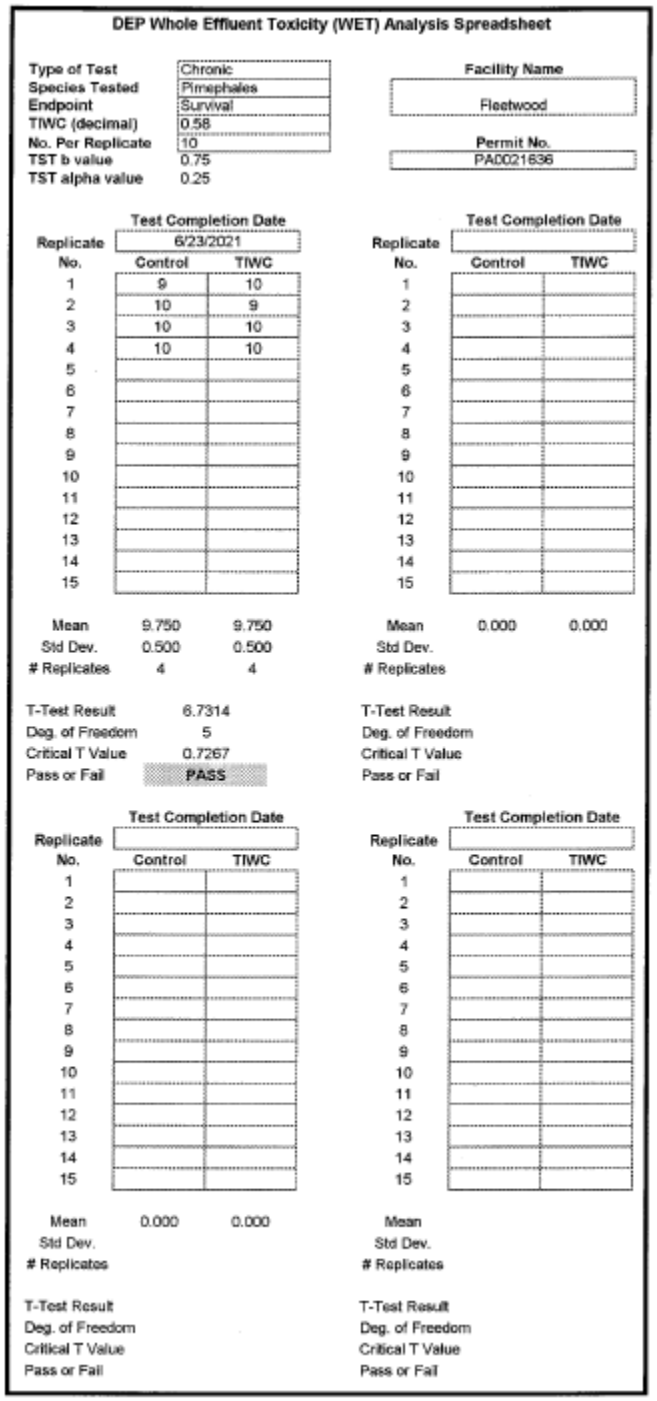
Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

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

Test Completion Date:

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

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



DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Replicate No.	Test Completion Date: 6/23/2021 Control	TIWC
1	9	10
2	10	9
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.750
Std Dev.	0.500	0.500
# Replicates	4	4

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

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

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

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

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

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

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

Page 4 of 13

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 6/13/2024

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 6/13/2024

Replicate No.	Control	TIWC
1	0.463	0.463
2	0.396	0.397
3	0.388	0.48
4	0.4	0.468
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.412	0.452
Std Dev.	0.035	0.037
# Replicates	4	4

T-Test Result	6.3005
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date:

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

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

Test Completion Date:

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 6/12/2024

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

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

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

Test Completion Date

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

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

Test Completion Date

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

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.58
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 6/12/2024

Replicate No.	Control	TIWC
1	32	17
2	24	28
3	34	33
4	34	16
5	18	32
6	27	11
7	18	33
8	5	21
9	6	30
10	26	35
11		
12		
13		
14		
15		
Mean	22.400	25.600
Std Dev.	10.585	8.592
# Replicates	10	10
T-Test Result	2.3788	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Attachment D
Pre-Treatment Approval Letter

REGION 3
PHILADELPHIA, PA 19103

VIA ELECTRONIC MAIL
Craig Conrad
Fleetwood Borough
110 West Arch Street, Suite 104
Fleetwood, PA 19522
craigc@fleetwoodboro.com

Re: Publicly Owned Treatment Works (POTW) Pretreatment Program
NPDES Permit No. PA0021636
Public Notice Number PA-470-NSG

Dear Craig Conrad:

The U.S. Environmental Protection Agency, Region 3 (EPA) has completed its review of the substantial modifications submitted on October 14, 2020, to the Fleetwood Borough POTW Pretreatment Program. Based on this review, EPA has determined that the modifications meet the requirements of 40 CFR 403.8(f).

Pursuant to 40 CFR 403.11(c), EPA is hereby approving the above referenced substantial modifications, as revised, which include changes to local limits. A listing of the documents included in this approval is enclosed. EPA issued a public notice for substantial modification in the *Reading Eagle* on July 5, 2024. By the end of the 30-day comment period, no comments were received.

If you have any questions or need assistance in administering this program, please contact the EPA Region 3 Pretreatment Team at EPA_R3_Pretreatment@epa.gov.

Sincerely,

JENNIFER FULTON Digitally signed by JENNIFER FULTON Date: 2024.11.08 07:18:17 -05'00'

Jennifer Fulton
Chief
Clean Water Branch

Enclosures

cc: Sean Furjanic
Pennsylvania Department of Environment, Central Office

Attachment E
Correspondence

Hong, Nicholas

From: Mary Beth Peters <MPeters@entecheng.com>
Sent: Thursday, August 28, 2025 3:57 PM
To: Hong, Nicholas; craigc@fleetwoodboro.com
Cc: Bebenek, Maria; Martin, Daniel; Rebecca Mason
Subject: [External] Re: Fleetwood / PA0021636 / NPDES renewal application comments.
Attachments: 4.7.2020 - Fleetwood wet_analysis_spreadsheet REV.pdf

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown senders. To report suspicious email, use the Report Phishing button in Outlook.*

Good Afternoon Nick,

Here are my responses to your comments below:

1. After reviewing the WETT results from 2020, the "Control" count for "Replicate No. 3 and 4" were reversed. A corrected WET Analysis Spreadsheet is attached. The test remains "PASS."

2. As part of the NPDES permit renewal process, all effluent sampling results were summarized from February 2021 - February 2024. Per this data set (162 samples in total), there was a Total Copper maximum concentration of 0.025 mg/l. This is the figure that should be utilized.

   Please note - The Greenport reports an Average Monthly concentration of 0.047 mg/l for August 2020. From my understanding of DEP's instructions, we only needed to summarize data for the past two years (even though we did 3 years), which would have placed this event outside of our data range. Without reviewing the data set in its entirety, I do not know how many samples were actually taken in August and/or what the actual maximum concentration was for this month.

3. WET testing has not been completed for 2025. This is currently scheduled for October.

Please review and let me know if you have any further questions or comments.

Thanks!

Mary B. Peters, PE
Project Manager

ENTECH ENGINEERING BEST PLACES to work in PA
239 South Mountain Boulevard | Suite 300 | Mountaintop, PA 18707-9603
(d) 272.268.3393 (f) 570.868.0127

REVISED

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.58
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Fleetwood

Permit No.: PA0021636

Test Completion Date: 4/7/2020

Replicate No.	Control	TIWC
1	10	10
2	10	9
3	10	10
4	9	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.500
Std Dev.	0.500	0.577
# Replicates	4	4

T-Test Result	5.3848
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date:

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

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

Test Completion Date:

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

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

Test Completion Date:

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

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

Attached F
DMR Data

Monitoring Period End Date	DMR Received Date	Parameter Name	Parameter Code	DMR Value	Permit Limit	Units	Statistical Base Code
10/31/2019	11/22/2019	Copper, Total	01042	0.015	0.022	mg/L	Average Monthly
11/30/2019	12/13/2019	Copper, Total	01042	0.017	0.022	mg/L	Average Monthly
12/31/2019	01/14/2020	Copper, Total	01042	0.011	0.022	mg/L	Average Monthly
01/31/2020	02/24/2020	Copper, Total	01042	0.008	0.022	mg/L	Average Monthly
02/29/2020	03/24/2020	Copper, Total	01042	0.012	0.022	mg/L	Average Monthly
03/31/2020	04/21/2020	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
04/30/2020	05/26/2020	Copper, Total	01042	0.009	0.022	mg/L	Average Monthly
05/31/2020	06/22/2020	Copper, Total	01042	0.015	0.022	mg/L	Average Monthly
06/30/2020	07/23/2020	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
07/31/2020	08/13/2020	Copper, Total	01042	0.047	0.022	mg/L	Average Monthly
08/31/2020	09/22/2020	Copper, Total	01042	0.018	0.022	mg/L	Average Monthly
09/30/2020	10/16/2020	Copper, Total	01042	0.02	0.022	mg/L	Average Monthly
10/31/2020	11/20/2020	Copper, Total	01042	0.02	0.022	mg/L	Average Monthly
11/30/2020	12/26/2020	Copper, Total	01042	0.016	0.022	mg/L	Average Monthly
12/31/2020	01/25/2021	Copper, Total	01042	0.01	0.022	mg/L	Average Monthly
01/31/2021	02/23/2021	Copper, Total	01042	0.007	0.022	mg/L	Average Monthly
02/28/2021	03/26/2021	Copper, Total	01042	0.009	0.022	mg/L	Average Monthly
03/31/2021	04/26/2021	Copper, Total	01042	0.009	0.022	mg/L	Average Monthly
04/30/2021	05/24/2021	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
05/31/2021	06/08/2021	Copper, Total	01042	0.015	0.022	mg/L	Average Monthly
06/30/2021	07/23/2021	Copper, Total	01042	0.015	0.022	mg/L	Average Monthly
07/31/2021	08/13/2021	Copper, Total	01042	0.017	0.022	mg/L	Average Monthly
08/31/2021	09/20/2021	Copper, Total	01042	0.018	0.022	mg/L	Average Monthly
09/30/2021	10/12/2021	Copper, Total	01042	0.012	0.022	mg/L	Average Monthly
10/31/2021	11/12/2021	Copper, Total	01042	0.02	0.022	mg/L	Average Monthly
11/30/2021	12/10/2021	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
12/31/2021	01/13/2022	Copper, Total	01042	0.012	0.022	mg/L	Average Monthly
01/31/2022	02/11/2022	Copper, Total	01042	0.01	0.022	mg/L	Average Monthly
02/28/2022	03/18/2022	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
03/31/2022	04/21/2022	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
04/30/2022	05/07/2022	Copper, Total	01042	0.01	0.022	mg/L	Average Monthly
05/31/2022	06/12/2022	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
06/30/2022	07/19/2022	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
07/31/2022	08/11/2022	Copper, Total	01042	0.01	0.022	mg/L	Average Monthly
08/31/2022	09/20/2022	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
09/30/2022	10/14/2022	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly

10/31/2022	11/14/2022	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
11/30/2022	12/14/2022	Copper, Total	01042	0.009	0.022	mg/L	Average Monthly
12/31/2022	01/11/2023	Copper, Total	01042	0.011	0.022	mg/L	Average Monthly
01/31/2023	03/13/2023	Copper, Total	01042	0.007	0.022	mg/L	Average Monthly
02/28/2023	03/13/2023	Copper, Total	01042	0.011	0.022	mg/L	Average Monthly
03/31/2023	04/17/2023	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
04/30/2023	05/24/2023	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
05/31/2023	06/21/2023	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
06/30/2023	07/20/2023	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
07/31/2023	08/22/2023	Copper, Total	01042	0.008	0.022	mg/L	Average Monthly
08/31/2023	09/15/2023	Copper, Total	01042	0.006	0.022	mg/L	Average Monthly
09/30/2023	10/23/2023	Copper, Total	01042	0.011	0.022	mg/L	Average Monthly
10/31/2023	11/20/2023	Copper, Total	01042	0.015	0.022	mg/L	Average Monthly
11/30/2023	12/20/2023	Copper, Total	01042	0.01	0.022	mg/L	Average Monthly
12/31/2023	01/18/2024	Copper, Total	01042	0.007	0.022	mg/L	Average Monthly
01/31/2024	02/22/2024	Copper, Total	01042	0.008	0.022	mg/L	Average Monthly
02/29/2024	03/18/2024	Copper, Total	01042	0.012	0.022	mg/L	Average Monthly
03/31/2024	04/16/2024	Copper, Total	01042	0.016	0.022	mg/L	Average Monthly
04/30/2024	05/20/2024	Copper, Total	01042	0.023	0.022	mg/L	Average Monthly
05/31/2024	06/13/2024	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
06/30/2024	07/22/2024	Copper, Total	01042	0.011	0.022	mg/L	Average Monthly
07/31/2024	08/14/2024	Copper, Total	01042	0.014	0.022	mg/L	Average Monthly
08/31/2024	09/20/2024	Copper, Total	01042	0.011	0.022	mg/L	Average Monthly
09/30/2024	10/21/2024	Copper, Total	01042	0.013	0.022	mg/L	Average Monthly
10/31/2024	11/27/2024	Copper, Total	01042	0.012	0.022	mg/L	Average Monthly
11/30/2024	12/12/2024	Copper, Total	01042	0.01	0.022	mg/L	Average Monthly
12/31/2024	01/13/2025	Copper, Total	01042	0.011	0.022	mg/L	Average Monthly
01/31/2025	02/25/2025	Copper, Total	01042	0.009	0.022	mg/L	Average Monthly
02/28/2025	03/24/2025	Copper, Total	01042	0.012	0.022	mg/L	Average Monthly
03/31/2025	04/24/2025	Copper, Total	01042	0.01	0.022	mg/L	Average Monthly
04/30/2025	05/20/2025	Copper, Total	01042	0.009	0.022	mg/L	Average Monthly
05/31/2025	06/24/2025	Copper, Total	01042	0.009	0.022	mg/L	Average Monthly
		Maximum from 10/2019 to 05/2025		0.047			
		Max from 2022 to 05/2025		0.023			

Attachment G DRBC Docket

DOCKET NO. D-1987-054 CP-7

DELAWARE RIVER BASIN COMMISSION

Fleetwood Borough Authority
Wastewater Treatment Plant
Richmond Township, Berks County, Pennsylvania

PROCEEDINGS

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) on March 28, 2024 (Application), for renewal of the docket holder's existing wastewater treatment plant (WWTP) and its discharge. The Pennsylvania Department of Environmental Protection (PADEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. PA0021636 for this discharge.

The application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Berks County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on August 7, 2024.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew approval of the docket holder's existing 0.7 million gallons per day (mgd) WWTP and its discharge

2. Location. The docket holder's WWTP is located at Walnuttown Road (referred to as Crisscross Road) in Richmond Township, Berks County, Pennsylvania. The WWTP will continue to discharge treated effluent to Willow Creek, at River Mile 92.47 – 86.7 – 0.6 – 6.4 (Delaware River – Schuylkill River – Maiden Creek – Willow Creek).

The location of the WWTP outfall in the Schuylkill River Watershed is as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	40° 27' 4.16"	75° 50' 19.60"

3. Area Served. The docket holder's WWTP will continue to serve a portion of Richmond Township and Fleetwood Borough located in Berks County, Pennsylvania. For the purpose of defining the Area Served, the Type of Discharge and the Service Area sections from the docket holder's Application are incorporated herein by reference, to the extent consistent with all other conditions contained in Section C. DECISION of this docket.

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4. Design Criteria. The docket holder's 0.7 mgd WWTP utilizes an activated sludge treatment process with ultraviolet (UV) disinfection.

The WWTP is designed for an annual average flow of 0.7 mgd, and a hydraulic design capacity of 0.882 mgd.

5. Facilities. The WWTP facilities consist of an mechanical channel grinder, a Muffin Monster, wet well, three (3) influent raw wastewater pumps, four (4) primary settling units with an oxidation ditch treatment system, three (3) secondary clarifier tanks, two (2) surge lagoons, four (4) aerobic digesters, a sludge holding tank and two (2) UV disinfection units.

The project facilities are not located in the 100-year floodplain.

Wasted sludge will continue to be hauled off-site for disposal in accordance with the NPDES Permit No. PA0021636.

6. Water Withdrawals. The potable water supply in the project service area is provided by the Borough of Fleetwood's groundwater withdrawal described in detail in Docket No. D-1995-058 CP-3, which was approved on September 13, 2017.

7. NPDES Permit / DRBC Effluent Requirements. NPDES Permit No. PA0021636 issued by the PADEP includes final effluent limitations for the project discharge to surface waters classified by the PADEP as supporting cold water fishes (CWF). EFFLUENT TABLES C-1 & C-2 included in Section C. DECISION condition C.1. of this docket, contain effluent requirements for DRBC parameters that must be met as a condition of this approval. Effluent requirements for Outfall No. 001 are based on a discharge rate of 0.7 mgd.

8. Relationship to the Comprehensive Plan. The existing WWTP was included in the Comprehensive Plan by Docket No. D-1987-54 CP, on May 25, 1988. The WWTP approval was renewed and modified by the dockets listed below. Issuance of this docket will continue the WWTP and its discharge in the Comprehensive Plan.

DOCKET NO.	DOCKET DESCRIPTION	APPROVAL DATE
D-1987-054 CP-2	Upgrade and re-rated discharge to 0.7 mgd	May 10, 2006
D-1987-054 CP-3	Renewed Approval	March 2, 2011
D-1987-054 CP-4	Disinfection Upgrade	December 8, 2011
D-1987-054 CP-5	Renewed Approval	December 10, 2014
D-1987-054 CP-6	Renewed Approval	March 11, 2020

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B. FINDINGS

The docket holder applied to renew approval of their existing 0.7 mgd WWTP and its discharge.

At the docket holder's WWTP discharge, Willow Creek has an estimated seven-day low flow with a recurrence interval of ten years ($Q_{7\text{-}10}$) of 0.43 mgd (0.80 cfs). The ratio of this low flow to the hydraulic design wastewater discharge rate from the 0.882 mgd WWTP is 0.49 to 1 (0.43 mgd / 0.882 mgd).

The nearest surface water intake of record for public water supply is located on Schuylkill River approximately 40 River Miles downstream of the docket holder's WWTP and is operated by Pottstown Borough Authority.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The effluent limits in the NPDES Permit conform with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge that meets the effluent requirements as set forth in the Commission's *Water Quality Regulations* (*WQR*).

C. DECISION

Effective on the approval date for Docket No. D-1987-054 CP-7 below, the project described in Docket No. D-1987-054 CP-6 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1987-054 CP-7; Docket No. D-1987-054 CP-6 is terminated and replaced by Docket No. D-1987-054 CP-7; and the project and the appurtenant facilities described in Section A "DESCRIPTION" of this docket shall be included in the Comprehensive Plan. The project and appurtenant facilities as described in Section A of this docket are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

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Monitoring and Reporting

1. The docket holder shall comply with the requirements contained in the EFFLUENT TABLES below. The docket holder shall submit the required monitoring results electronically to the DRBC Project Review Section via email **aemr@drbc.gov** on the **Annual Effluent Monitoring Report Form** located at this web address: https://www.nj.gov/drbc/programs/project/docket-app-info.html#3. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations. The following average monthly effluent limits are among those listed in the NPDES Permit and meet or are more stringent than the effluent requirements of the DRBC.

EFFLUENT TABLE C-1: DRBC Parameters Included in NPDES Permit

OUTFALL 001 (Discharging to Willow Creek)		
PARAMETER	**LIMIT**	**MONITORING**
pH (Standard Units)	6 to 9 at all times	As required by NPDES Permit
Total Suspended Solids	30 mg/l	As required by NPDES Permit
BOD_5 (at 20° C) Influent	Monitor & Report	As required by NPDES Permit
$CBOD_5$ (at 20° C) (5-1 to 10-31) (11-1 to 4-30)	14 mg/l (85% Minimum Removal) 25 mg/l (85% Minimum Removal)	As required by NPDES Permit
Ammonia Nitrogen (5-1 to 10-31) (11-1 to 4-30)	1.4 mg/l 4.2 mg/l	As required by NPDES Permit
Fecal Coliform (5-1 to 9-30) (10-1 to 4-30)	200 colonies per 100 ml as a geo. avg. 2000 colonies per 100 ml as a geo. avg.	As required by NPDES Permit
Total Dissolved Solids*	1,000 mg/l *	As required by NPDES Permit

* See DECISION Condition C.3.

The following monitoring requirements and average monthly effluent limits are for DRBC parameters not listed in the NPDES Permit.

EFFLUENT TABLE C-2: DRBC Parameters Not Included in NPDES Permit

OUTFALL 001 (Discharging to Willow Creek)		
PARAMETER	**LIMIT**	**MONITORING**
$CBOD_5$ (at 20° C) Influent	Monitor & Report	Monthly

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Other Conditions

2. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC water quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.

3. The docket holder may request permission from the Executive Director to perform specific conductance monitoring in lieu of TDS monitoring. The request shall be made in writing and shall include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow specific conductance monitoring in lieu of TDS monitoring.

4. Section 2.3.10 of the Commission's *Rules of Practice and Procedure (RPP)* (18 C.F.R. 401.41), limiting the Commission's approval to three years in the absence of an expenditure of substantial funds by the project sponsor in reliance on the approval, is hereby waived for good cause shown in accordance with Section 2.9.3 (18 C.F.R. 401.123) of the same regulations. This approval shall expire on the expiration date set forth below unless prior thereto the docket holder has applied to the Commission to renew or extend this approval.

5. The docket holder is responsible for timely submittal to the DRBC of a docket renewal application on the appropriate application form including the appropriate docket application filing fee (see 18 C.F.R. 401.43) at least 6 months in advance of the docket expiration date set forth below. The docket holder will be subject to late filed renewal surcharges in the event of untimely submittal of its renewal application, whether DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. If a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below, the terms and conditions of the current docket will remain fully effective and enforceable pending the grant or denial of the application for docket approval.

6. The docket holder is permitted to treat and discharge wastewater as set forth in the Area Served Section of this docket, which incorporates by reference the Type of Discharge and Service Area sections of the docket holder's Application to the extent consistent with all other conditions of this section. Any expansion beyond that included in Section A.3. Area Served is subject to DRBC review and approval in accordance with Section 3.8 of the Compact.

7. In accordance with the Commission's regulations at 18 C.F.R. Part 440, the docket holder is prohibited from discharging wastewater from high volume hydraulic fracturing ("HVHF") or HVHF-related activities to waters or land within the Basin. The docket holder is further prohibited from discharging hydraulic fracturing wastewater, whether treated or untreated, from sources within or outside the Basin, without obtaining the Commission's prior review and express approval in the form of a revised docket. Violation of this or any condition of this docket approval may result in enforcement, including the risk of financial penalties, pursuant to Section 14.17 of the Delaware River Basin Compact and Section 2.7.8 (18 CFR 401.98) of the Commission's Rules of Practice and Procedure.

8. The facility and operational records shall be available at all times for inspection by the DRBC.

9. The facility shall be operated at all times to comply with the requirements of the Commission's *WQR*.

10. If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.

11. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

12. The docket holder shall discharge wastewater in such a manner as to avoid injury or damage to fish or wildlife and shall avoid any injury to public or private property.

13. No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

14. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, to ensure proper control, use and management of the water resources of the Basin.

15. The docket holder shall be subject to applicable DRBC regulatory program fees, in accordance with duly adopted DRBC resolutions and/or regulations (see 18 C.F.R. 401.43).

16. This approval is transferable by request to the DRBC Executive Director provided that the project purpose and area served approved by the Commission in this docket will not be materially altered because of the change in project ownership. The request shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 C.F.R. 401.43).

17. The docket holder shall request a name change of the entity to which this approval is issued if the name of the entity to which this approval is issued changes its name. The request for name change shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 C.F.R. 401.43).

18. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

19. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the *Rules of Practice and Procedure (RPP)*. In accordance with Section 15.1(p) of the *Delaware River Basin Compact*, cases and controversies arising under the *Compact* are reviewable in the United States district courts.

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BY THE COMMISSION

APPROVAL DATE: **September 5, 2024**

EXPIRATION DATE: **September 30, 2029**