Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0043052**
Facility Type	**Municipal**	APS ID	**571643**
Major / Minor	**Major**	Authorization ID	**1494361**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Spring Township Berks County**	Facility Name	**Spring Township STP**
Applicant Address	2850 Windmill Road	Facility Address	1000 Reedy Road
	Reading, PA 19608-1668		Sinking Spring, PA 19608-1668
Applicant Contact	Dean Murray	Facility Contact	Andrew Zimmerman
Applicant Phone	(610) 678-5393	Facility Phone	(610) 678-4448
Client ID	76422	Site ID	254023
Ch 94 Load Status	Not Overloaded	Municipality	Spring Township
Connection Status	No Limitations	County	Berks
Date Application Received	August 1, 2024	EPA Waived?	No
Date Application Accepted	August 6, 2024	If No, Reason	Major Facility

Purpose of Application: This is an application for NPDES renewal.

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Spring Township STP located at 1000 Reedy Road, Sinking Spring, PA 19608 in Berks County, municipality of Spring Township. The existing permit became effective on February 1, 2020 and expired on January 31, 2025. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on August 1, 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 2.28 MGD hydraulic design capacity treatment facility. The average annual flow rate for the facility is 2 MGD. The applicant anticipates proposed upgrades to the treatment facility in the next five years. A project is underway that includes replacement of the belt filter press with a new rotary screw press. Press-related piping, controls, sludge conveyors, polymer system, and ancillary equipment will also be replaced.

The NPDES application has been processed as a Major Sewage Facility (Level 1) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to the County of Berks and Township of Spring and

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	August 26, 2025
X		Daniel W. Martin, P.E. / Environmental Engineer Manager *Daniel W. Martin*	August 28, 2025

Summary of Review

the notice was received by the parties on July 8, 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 Cacoosing Creek. The sequence of receiving streams that the Cacoosing Creek discharges into are Tulpehocken Creek, Schuylkill River, and the Delaware River which eventually drains into the Delaware Bay. The receiving water has protected water usage for cold water fishes (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 Cacoosing Creek is a Category 4c and 5 stream listed in the 2024 Integrated List of All Waters (formerly 303d Listed Streams). The surface waters is (1) impaired for aquatic life due to habitat alterations from habitat modification, (2) impaired for aquatic life due to nutrients from agriculture, (3) impaired for aquatic life due to siltation from agriculture; (4) impaired for recreational uses due to pathogens from an unknown source. 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:

- Due to the EPA triennial review, monitoring will be required for E.coli and PFOS parameters
- Consistent with the SOP, monitoring shall be required for Total Nitrogen
- Consistent with DRBC, TDS effluent limit was lowered to 1,000 mg/l
- Monitoring for Total Copper shall be 2x/yr
- Monitoring for dichlorobromomethane was eliminated

Sludge use and disposal description and location(s): Sewage Sludge/Biosolids disposed at Exeter Township located in Berks County as biosolids In landfill

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:	Spring Township STP
NPDES Permit #	PA0043052
Physical Address:	1000 Reedy Road Sinking Spring, PA 19608
Mailing Address:	2850 Windmill Road Reading, PA 19608
Contact:	Andrew Zimmerman Assistant Superintendent (610) 678 – 4448 azimmerman@springtwpberks.org
Consultant:	Matthew Boggs Project Manager Entech Engineering, Inc. mboggs@entecheng.com (610) 373-3345

1.2 Permit History

Permit submittal included the following information.

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

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 1000 Reedy Road, Sinking Spring, PA 19608. 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

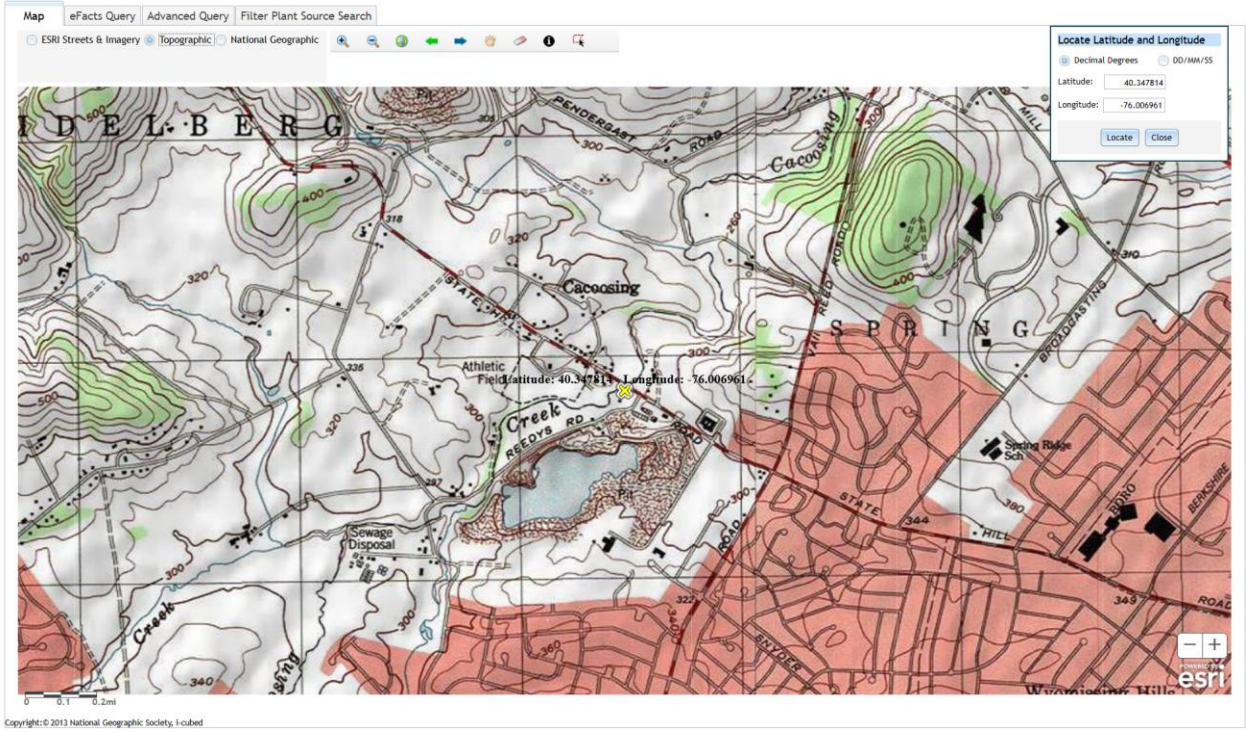
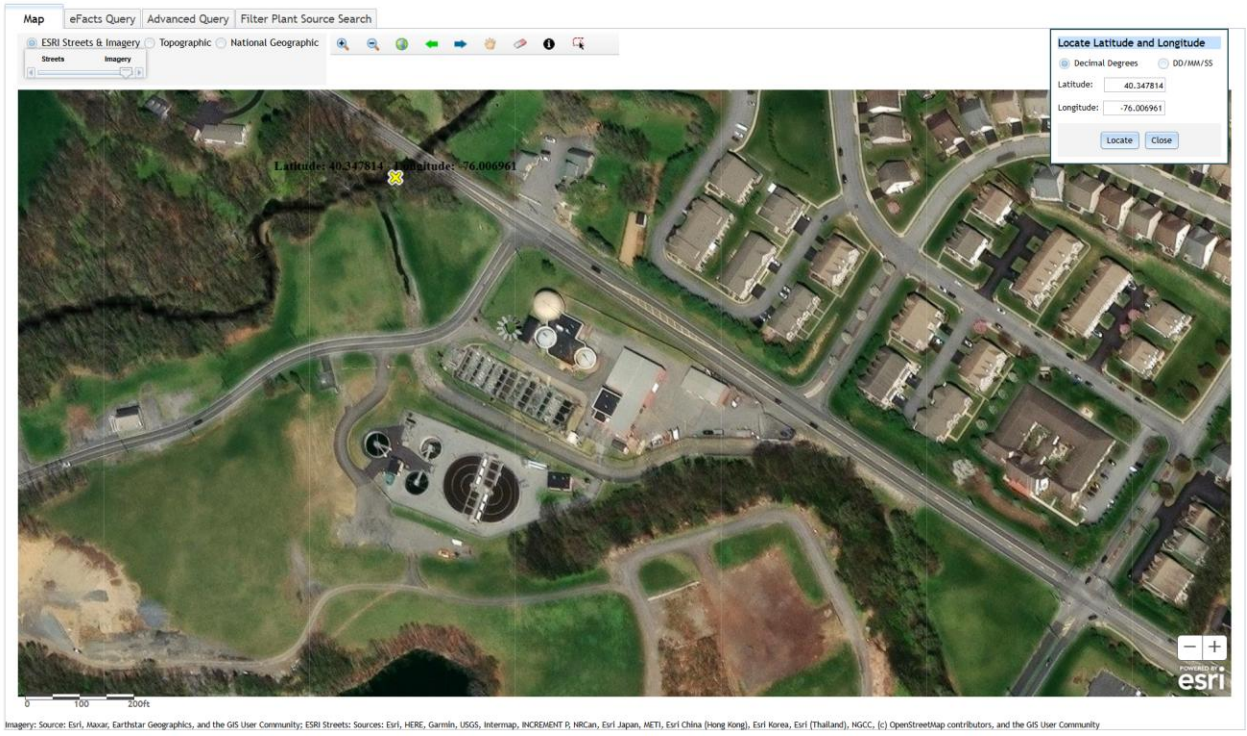


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The table summarizes the municipalities' contributions of flow to the wastewater treatment plant

Treatment Plant Tributaries		
Municipalities Served	**Flow Contribution**	**Population**
Township of Spring	85%	12,069
Lower Heidelberg Township	1%	136
South Heidelsberg Township	10%	1,342
Wymissing Borough	4%	463
Total	100%	-----

The facility received hauled in wastes within the last three years. The facility receives municipal wastes from Spring Township STP headworks. The headworks is located at the same facility as the wastewater treatment plant.

The facility anticipates receiving hauled in wastes within the next five years.

The facility reports they do not have any industrial users.

The facility has the following outfall information for stormwater.

Outfall 002 located at Latitude 40 20 52.13 and Longitude -76 0 25.62

The consultant has made a request for correction. The facility does not have an Outfall 003. DEP permit writer eliminated Outfall 003.

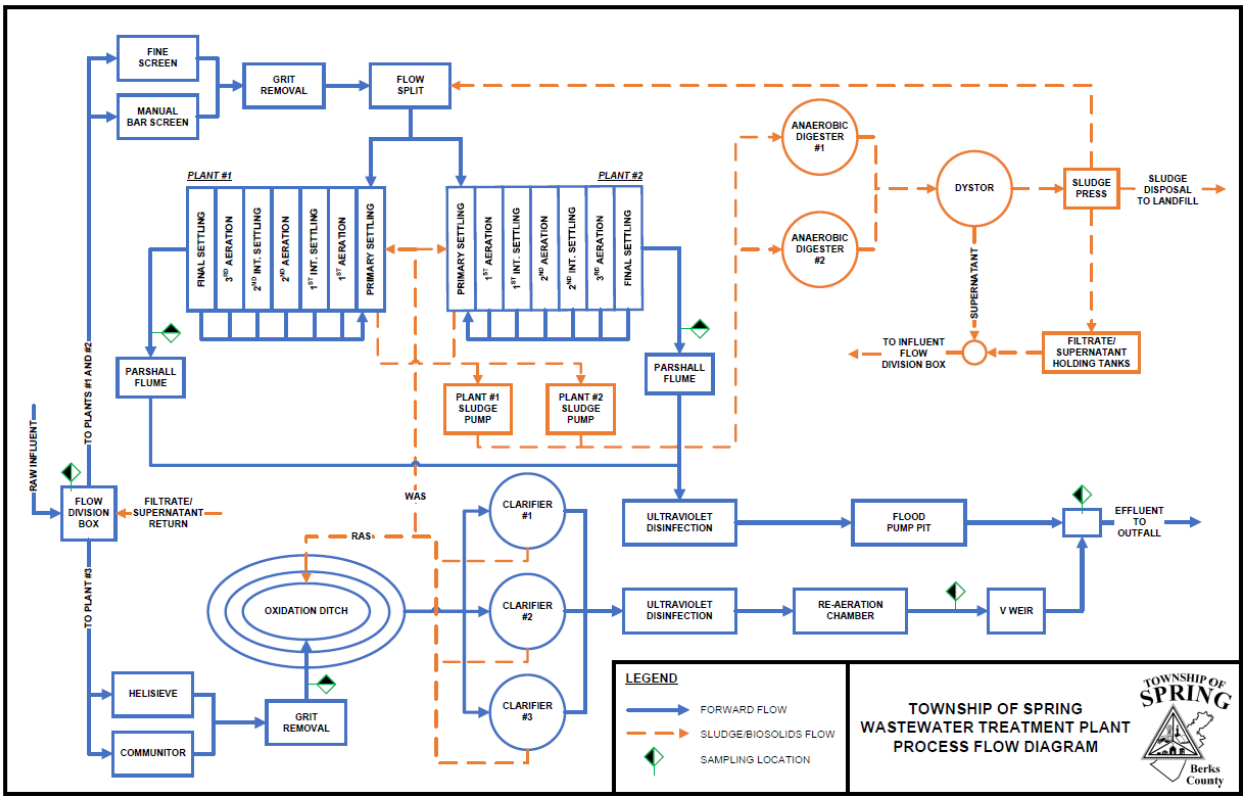
2.2 Description of Wastewater Treatment Process

The subject facility is a 2.28 MGD hydraulic design flow facility. The average annual flow rate is 2 MGD. Plant 1 and Plant 2 treat wastewater through aeration and uv disinfection. Plant #3 treats wastewater using an oxidation ditch and two (2) secondary clarifier and uv disinfection. The facility is being evaluated for flow, pH, dissolved oxygen, CBOD5, TSS, TDS, fecal coliform, nitrogen species, phosphorus, UV readings, Total aluminum, and dichlorobromomethane. 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: Spring Township STP				
WQM Permit No.	**Issuance Date**			
0609404 A-1	07/20/2020			
0609404 A-2	01/11/2024			
0609404 A-3	10/11/2024			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia And Phosphorus	Oxidation Ditch	Ultraviolet	2
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
2.28	5126	Not Overloaded		

A schematic of the wastewater treatment process is depicted.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	2
Latitude	40º 20' 52.07"	**Longitude**	-76º 0' 24.88"
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.

- DelPac for phosphorus removal
- Pollutreat CL 186 for sludge dewatering

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 20' 52.13" , **Longitude** 76º 0' 25.06" , **River Mile Index** 2.0 , **Stream Code** 1850

Receiving Waters: Cacoosing Creek

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **February 1, 2020** through **January 31, 2025**.
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)	417	667	XXX	25	40	50	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	500	750	XXX	30	45	60	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1500.0	XXX	XXX	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	XXX	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	2/week	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	175	XXX	XXX	10.5	XXX	21	2/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Ammonia-Nitrogen May 1 - Oct 31	58	XXX	XXX	3.5	XXX	7	2/week	24-Hr Composite
Total Phosphorus	21	XXX	XXX	1.28	XXX	2.5	2/week	24-Hr Composite
Aluminum, Total	18	XXX	XXX	1.11	XXX	1.74	1/week	24-Hr Composite
Ultraviolet light dosage (mWsec/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Dichlorobromomethane	XXX	XXX	XXX	Report	XXX	XXX	1/month	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.

07/22/2021:

- The facility was cited for violation of 25 PA Code 92a.47(c). This regulation prohibits discharges from SSO.

08/23/2023:

- There was nothing significant to report.

01/02/2025:

- There was nothing significant to report.

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 1.29 MGD in May 2025. The design capacity of the treatment system is 2.28 MGD.

The off-site laboratory used for the analysis of the parameters was MJ Reider Associates, Inc located at 107 Angelica Street, Reading, PA 19611.

The off-site laboratory used for the WET analysis of the parameters was MJ Reider Associates, Inc located at 107 Angelica Street, Reading, PA 19611.

DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	1.2993	1.1015	0.9736	0.9742	0.9094	0.9597	0.8526	0.8571	0.9147	1.0675	1.0266	1.0115
Flow (MGD) Daily Maximum	2.2874	1.3886	1.1545	1.6497	1.0614	1.4217	1.0956	0.9169	0.9650	1.5378	1.2579	1.1852
pH (S.U.) Instantaneous Minimum	7.31	7.31	7.19	7.47	7.13	7.60	7.58	7.81	7.76	7.54	7.43	7.69
pH (S.U.) Instantaneous Maximum	7.76	7.77	7.75	7.82	7.81	7.99	8.06	8.22	8.14	8.09	8.05	8.05
DO (mg/L) Instantaneous Minimum	7.69	7.66	9.25	10.32	9.93	9.94	9.08	8.75	8.07	7.59	7.65	8.07
CBOD5 (lbs/day) Average Monthly	42	41	40	34	25	< 21	< 14	< 15	< 18	< 20	< 24	39
CBOD5 (lbs/day) Weekly Average	48	51	43	40	30	24	< 15	< 18	< 21	22	30	46
CBOD5 (mg/L) Average Monthly	4	4	5	4	3	< 3	< 2	< 2	< 2	< 2	< 3	5
CBOD5 (mg/L) Weekly Average	4	6	5	4	4	3	< 2	< 2	< 3	3	4	5
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	2530	2956	2397	2137	1940	2661	2288	2416	2500	2413	2387	2394
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	3873	4336	4068	3027	3721	4261	4259	5127	3018	3965	4145	4001
BOD5 (mg/L) Raw Sewage Influent Average Monthly	242	312	295	249	249	338	323	333	323	277	277	282
TSS (lbs/day) Average Monthly	< 30	47	29	< 29	< 15	< 26	< 20	34	34	41	40	37

TSS (lbs/day) Raw Sewage Influent Average Monthly	2024	2873	2325	1759	1810	2563	2708	2386	3313	2812	2499	2248
TSS (lbs/day) Raw Sewage Influent Daily Maximum	4175	5917	3802	3276	3967	4786	4389	3268	6288	5355	3876	3329
TSS (lbs/day) Weekly Average	44	67	44	42	< 27	52	< 26	43	47	63	71	51
TSS (mg/L) Average Monthly	< 3	5	4	< 4	< 2	< 3	< 3	5	4	5	5	4
TSS (mg/L) Raw Sewage Influent Average Monthly	193	302	288	207	231	323	385	330	426	324	290	266
TSS (mg/L) Weekly Average	4	7	5	6	< 4	7	< 4	6	6	8	9	6
Total Dissolved Solids (mg/L) Average Monthly	795.00	763.00	961.00	1065.00	897.00	919.00	970.00	939.00	1020.00	877.00	925.00	942.00
Fecal Coliform (No./100 ml) Geometric Mean	43	11	< 4	17	< 10	8	< 8	15	17	32	38	29
Ammonia (lbs/day) Average Monthly	5	10	8	2	1.0	< 0.7	< 0.3	< 0.2	< 0.2	< 0.3	0.7	0.8
Ammonia (mg/L) Average Monthly	0.51	0.98	1.0	0.28	0.19	< 0.09	< 0.04	< 0.03	< 0.03	< 0.04	0.06	0.1
Total Phosphorus (lbs/day) Average Monthly	9	7	6	7	6	5	5	6	7	7	9	9
Total Phosphorus (mg/L) Average Monthly	0.85	0.74	0.77	0.82	0.75	0.68	0.72	0.81	0.96	0.80	0.89	1.03
Total Aluminum (lbs/day) Average Monthly	2	4	4	4	4	3	3	2	4	2	3	3
Total Aluminum (mg/L) Average Monthly	0.22	0.37	0.47	0.55	0.49	0.45	0.36	0.34	0.49	0.29	0.36	0.32

UV Dosage (mWsec/cm²) Instantaneous Minimum	23.83	23.80	23.07	24.21	23.63	24.45	23.46	23.59	28.27	24.32	24.22	23.80
Dichlorobromo-methane (mg/L) Average Monthly	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

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 February 1, 2020 and ending July 15, 2025, the following were observed effluent non-compliances.

Summary of Non-Compliance with NPDES Effluent Limits
Beginning Feb 1, 2020 and Ending July 15, 2025

NON_COMPLIANCE_DATE	ON_COMPL_TYPE_DES	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	DISCHARGE_COMMENTS	FACILITY_COMMENTS
3/31/2020	Late DMR Submission	Other Violations								
7/24/2020	Sample type not in accordance with permit	Other Violations								
7/24/2020	Violation of permit condition	Effluent	Total Phosphorus	1.29	>	1.28	mg/L	Average Monthly		
7/20/2021		Unauthorized Discharges							Traffic Cone & broken MH lid found inside MH blocking flow.	
4/14/2022		Unauthorized Discharges							Clog at trap.	
9/11/2023		Unauthorized Discharges							Clog in the line due to grease from a restaurant on Fritztown Road.	
2/13/2024	Violation of permit condition	Effluent	Total Suspended Solids	60	>	45	mg/L	Weekly Average		RAS Pump malfunction, VFD and Motor Replaced. Pump was switched to different pump.
2/13/2024	Violation of permit condition	Effluent	Total Suspended Solids	760	>	750	lbs/day	Weekly Average		RAS Pump malfunction, VFD and Motor Replaced. Pump was switched to different pump.

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 February 1, 2020 and ending July 15, 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			
Date (YEAR)	Tons Dewatered	% Solids	Dry Tons
January	100.25	15.25	15.288
February	82.65	16.04	26.494
March	82.14	15.72	25.821
April	80.32	16.24	13.04
May	94.04	16.17	30.409
June	62.98	18.08	22.774
July	76.34	18.42	28.096
August	99.23	17.07	33.873
September	83.18	17.06	28.381
October	99	16.55	32.762
November	66.8	17.35	23.178
December	83.15	16.8	27.945

Notes:

Sewage Sludge/Biosolids disposed at Exeter Township located in Berks County as biosolids In landfill

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 Cacoosing Creek. The sequence of receiving streams that the Cacoosing Creek discharges into are Tulpehocken Creek, 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 56 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 waterbody. The surface waters is (1) impaired for aquatic life due to habitat alterations from habitat modification, (2) impaired for aquatic life due to nutrients from agriculture, (3) impaired for aquatic life due to siltation from agriculture; (4) impaired for recreational uses due to pathogens from an unknown source. 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 Tulpehocken Creek (WQN117). This WQN station is located approximately 4 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Tulpehocken Creek near Reading, PA (USGS station number 1471000). This gauge station is located approximately 3 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 7.59 and the stream water temperature was estimated to be 20 C.

The hardness of the stream was estimated by collecting a sample upstream of the facility. The sample was collected on July 17, 2024 approximately 25 miles from the subject facility. The sampling result was 211 mg/l $CaCO_3$.

At the point of discharge, the low flow yield and the Q710 for the subject facility was estimated using StreamStats.

The low flow yield is 0.305 $ft^3/s/mi^2$ and the Q710 is 5.78 ft^3/s.

The previous Fact Sheet utilized a Q710 of 4.093 ft^3/s. This was based upon StreamStats and gauge station data.

DEP suspects that the StreamStats estimation of Q710 more reasonable.

The change in Q710 will affect the target chronic instream waste concentration.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	2
Latitude	40º 20' 52.68"	Longitude	-76º 0' 25.25"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Cacoosing Creek	Stream Code	1850
NHD Com ID	25995698	RMI	2.23
Drainage Area	18.9	Yield (cfs/mi^2)	0.305
Q_{7-10} Flow (cfs)	5.78	Q_{7-10} Basis	StreamStats
Elevation (ft)	266	Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	CWF / MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, PATHOGENS, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, SOURCE UNKNOWN		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	7.59	WQN117; median July to Sept
Temperature (°C)	20	WQN117; median July to Sept
Hardness (mg/L)	211	Sample collected on 07/17/2024
Other:		

Nearest Downstream Public Water Supply Intake	Pottstown Borough Water Authority		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	12,000,000
PWS RMI	55	Distance from Outfall (mi)	25

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	1850	1850	
River Mile Index	2.23	0	miles
Elevation	266	223	feet
Latitude	40.347814	40.366348	
Longitude	-76.006961	-75.994799	
Drainage Area	18.9	21.8	sq miles
Low Flow Yield	0.306	0.350	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 pollutants in Groups 1 through 5.

The NPDES application collected at least three (3) samples to characterize the wastewater effluent stream.

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 35%. The complete dilution series will be 9%, 18%, 35%, 68%, and 100%.

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:

For the current permit, the dilution series used for the tests was: 100%, 72%, 43%, 22%, and 11%. The Target Instream Waste Concentration (TIWC) used for analysis of the results was: 42%.

For the proposed permit, the dilution series used for the tests was: 100%, 68%, 35%, 18%, and 9%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 38%.

Summary of Four Most Recent Test Results

TST Data Analysis

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

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
10/6/2020	PASS	PASS	PASS	PASS
12/15/2020	PASS	PASS	PASS	PASS
4/29/2021	PASS	PASS	PASS	PASS
8/2/2022	PASS	PASS	PASS	PASS
8/15/2023	PASS	FAIL	PASS	PASS
10/9/2023	PASS	FAIL		
1/4/2024	PASS	PASS		
3/4/2024	PASS	PASS	PASS	PASS
9/9/2024	PASS	PASS	PASS	PASS
11/4/2024	PASS	PASS	PASS	PASS
1/6/2025	PASS	PASS	PASS	PASS
5/12/2025	PASS	PASS	PASS	PASS

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

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

Comments:

No reasonable potential identified. WET tests failure occurred in August 2023 and October 2023. a TRE was completed to identify the potential source. The potential source was allegedly eliminated.The WET test failures were followed up by quarterly WET test from March 2024 to May 2025. Those WET test were passing

Data

PMFa =	0.865	
PMFc =	1	
Qd =	2	MGD
Q710 =	5.78	cfs

Step 1: Determine IWC - Acute (IWCa)

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

IWCa = 38.23

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

Type of Test for Permit Renewal:

Chronic tests required

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

TIWCa = IWCA / 0.3

TIWCa = 127.42

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 = 34.87

Step 3: Determine Dilution Series

Dilution Series =	100%	68%	35%	18%	9%

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

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.

5.6.1 DRBC Monitoring/Effluent Limit Requirements

Depicted is the DRBC monitoring requirements for conventional pollutants and toxic pollutants.

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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 Cacoosing 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
Dissolved Oxygen	5.0 mg/l (minimum at all times)	As required by NPDES Permit
$CBOD_5$ (at 20° C)	25 mg/l (minimum 85% removal)	As required by NPDES Permit
Ammonia Nitrogen (5-1 to 10-31) (11-1 to 4-30)	3.5 mg/l 10.5 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

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 Cacoosing Creek)		
PARAMETER	**LIMIT**	**MONITORING**
Total Dissolved Solids Effluent*	Monitor & Report*	Monthly
Total Dissolved Solids Influent*	Monitor & Report*	Monthly
$CBOD_5$ (at 20° C) Influent	Monitor & Report Percent Removal	Monthly

* See DECISION Condition C.2 and C.5.

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

DRBC requires CBOD percent removal.

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection
Spring Township WWTP; PA0043052

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	TBEL	Monitoring:	The monitoring frequency shall be 2x/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 417 lbs/day and 25 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). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 2x/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 500 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 dosage
		Effluent Limit:	No effluent requirements.
		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 2x/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 2.0 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

Spring Township WWTP; PA0043052

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	WQBEL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	During the months of May 1 to Oct 31, the effluent limits shall not exceed 58 lbs/day and 3.5 mg/l as an average monthly.During the months of Nov 1 to Apr 30, the effluent limits shall not exceed 175 lbs/day and 10.5 mg/l as an average monthly.
		Rationale:	Water quality modeling recommends effluent limits. Modeling result was 3.44 mg/l ammonia nitrogen. The effluent limit was rounded to 3.50 mg/l.
Total Nitrogen	SOP	Monitoring:	The monitoring frequency shall be 1x/month as a calculation.
		Effluent Limit:	No efflunt limit
		Rationale:	Consistent with the SOP, monitoring shall be required 1x/month
Total Phosphorus	Anti-backsliding	Monitoring:	The monitoring frequency shall be 2x/yr as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 21 lbs/day and 1.28 mg/l as an average monthly.
		Rationale:	Previous Fact Sheets claim that the receiving waters is impaired for nutrients. Due to anti-backsldiing the current permit limits shall continue to the proposed permit.

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 2.0 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

Two modeling runs with Toxics Management Spreadsheet was conducted.

Run #1 utilized sampling results submitted with the NPDES renewal application

Run #2 utilized adjusted sampling results. Via correspondence on August 22, 2025, Matthew Boggs of Entech Engineering suggested that as a result of a rain event on July 10, 2023 that dumped 6.70" of rain a spike of flow was experienced at the WWTP. This potentially caused a spike of aluminum at 1850 ug/l. From DMR data from February 2020 to June 2025, the maximum aluminum result was 680 ug/l. This value was plugged into TMS.

From Run #1 and Run #2, TMS modeling recommended effluent limits for aluminum.

DMR data from February 2020 to June 2025 was reviewed. Sampling data supports dichlorobromomethane is not a concern. The pollutant has been eliminated from monitoring.

DRBC requires monitoring for influent and effluent TDS.

Summary of Proposed NPDES Parameter Details for Toxics

Spring Township WWTP; PA0043052

Parameter	Permit Limitation Required by[1]:	Recommendation	
TDS	**DRBC**	Monitoring:	The monitoring frequency shall be 1x/month as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 417 lbs/day and 1,000 mg/l as an average monthly.
		Rationale:	Effluent limits consistednt with DRBC requirements.
Aluminum	WQBEL/Antibacksliding	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	The performance effluent limit shall not exceed 18 lbs/day and 1.11 mg/l as a monthly average.
		Rationale:	TMS recommends effluent limits that are less stringent than the current permit limits. Due to anti-backsliding, the current permit limits shall continue to the proposed permit.
Total Copper	WQBEL	Monitoring:	Monitoring shall be required 2x/yr
		Effluent Limit:	No effluent limits
		Rationale:	TMS was conducted for this pollutant without reasonable potential. Monitoring shall be required 2x/yr to collect sufficient samples for the next renewal.Pending favorable results, monitoring may be eliminated in future rneewals.

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 2.0 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.
- Consistent with DEP Management directives issued on February 5, 2024, monitoring for PFAS parameters shall be required. The recommended monitoring frequency is quarterly. The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Summary of Proposed NPDES Parameter Details for polluants monitored under Chapter 92a.61
Spring Township WWTP; PA0043052

Parameter	Permit Limitation Required by[1]:	Recommendation	
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/month 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.
PFOA	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent limit requirement
		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 PFAS related parameters.
PFOS	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent limit requirement
		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 PFAS related parameters.
HFPO-DA	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent limit requirement
		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 PFAS related parameters.
PFBS	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent limit requirement
		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 PFAS related parameters.

Notes:

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

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.

- Due to the EPA triennial review, monitoring will be required for E.coli and PFOS parameters
- Consistent with the SOP, monitoring shall be required for Total Nitrogen
- Consistent with DRBC, TDS effluent limit was lowered to 1,000 mg/l
- Monitoring for Total Copper shall be 2x/yr
- Monitoring for dichlorobromomethane was eliminated

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 20' 52.07" , **Longitude** 76º 0' 24.88" , **River Mile Index** 2.23 , **Stream Code** 1850

Receiving Waters: Cacoosing Creek

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	Daily Maximum	Instantaneous Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	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)	417	667 Wkly Avg	XXX	25	40 Wkly Avg	50	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
CBOD5 Minimum % Removal (%, %) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	500	750 Wkly Avg	XXX	30	45 Wkly Avg	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.00	XXX	XXX	1/month	24-Hr Composite
Total Dissolved Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/month	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	Daily Maximum	Instantaneous Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	XXX	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	1/month	Grab
Total Nitrogen	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	175	XXX	XXX	10.5	XXX	21	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	58	XXX	XXX	3.5	XXX	7	2/week	24-Hr Composite
Total Phosphorus	21	XXX	XXX	1.28	XXX	2.5	2/week	24-Hr Composite
Aluminum, Total	18	XXX	XXX	1.11	XXX	1.74	1/week	24-Hr Composite
Copper, Total	Report SEMI AVG	Report	XXX	Report SEMI AVG	XXX	XXX	1/6 months	24-Hr Composite
Ultraviolet light dosage (mWsec/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
PFOA (ng/L)[A]	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)[A]	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)[A]	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)[A]	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

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

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

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

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

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

[ft^3/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 (ft^3/s)	7-day, 10-year (ft^3/s)	7-day, 2-year (ft^3/s)	30-day, 10-year (ft^3/s)	30-day, 2-year (ft^3/s)	90-day, 10-year (ft^3/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
03C	1850	CACOOSING 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)
2.230	Spring Twp	PA0043052	2.000	CBOD5	25		
				NH3-N	3.44	6.88	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03C	1850	CACOOSING CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.230	Spring Twp	6.42	7	6.42	7	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.230	Spring Twp	1.11	3.44	1.11	3.44	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.23	Spring Twp	25	25	3.44	3.44	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
03C	1850	CACOOSING CREEK	**2.230**	266.00	18.90	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.306	0.00	5.78	0.000	0.000	0.0	0.00	0.00	20.00	7.59	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
Spring Twp	PA0043052	2.0000	2.0000	2.0000	0.000	25.00	7.72

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	3.50	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
03C	1850	CACOOSING CREEK	**0.000**	223.00	21.80	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.350	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.59	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	0.00	7.00

Parameter Data

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

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
03C	1850	CACOOSING CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.230	2.000	21.743	7.631
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
34.875	0.699	49.904	0.364
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
10.02	1.245	1.20	0.801
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.112	13.168	Tsivoglou	5
Reach Travel Time (days)			
0.374			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.037	9.53	1.16	7.09
0.075	9.06	1.13	7.10
0.112	8.61	1.10	7.14
0.150	8.19	1.06	7.20
0.187	7.78	1.03	7.26
0.225	7.40	1.00	7.32
0.262	7.04	0.97	7.39
0.299	6.69	0.94	7.45
0.337	6.36	0.92	7.51
0.374	6.05	0.89	7.57

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
03C	1850	CACOOSING 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 (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.230	5.78	0.00	5.78	3.094	0.00365	.699	34.88	49.9	0.36	0.374	21.74	7.63
Q1-10 Flow												
2.230	5.26	0.00	5.26	3.094	0.00365	NA	NA	NA	0.35	0.387	21.85	7.63
Q30-10 Flow												
2.230	6.47	0.00	6.47	3.094	0.00365	NA	NA	NA	0.38	0.359	21.62	7.63

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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Toxics Management Spreadsheet
Version 1.4, May 2023

RUN #1

Discharge Information

Instructions | Discharge | Stream

Facility: **Spring Township STP** NPDES Permit No.: **PA0043052** 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
2	295	7.72						

					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		1120									
	Chloride (PWS)	mg/L		325									
	Bromide	mg/L		0.15									
	Sulfate (PWS)	mg/L		38.9									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		1850									
	Total Antimony	µg/L		0.4									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		76									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		200									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.4									
	Total Copper	µg/L		7									
	Free Cyanide	µg/L	<	1									
	Total Cyanide	µg/L	<	6									
	Dissolved Iron	µg/L		20									
	Total Iron	µg/L		30									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		10									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		3.1									
	Total Phenols (Phenolics) (PWS)	µg/L		1080									
	Total Selenium	µg/L		1									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.3									
	Total Zinc	µg/L		37									
	Total Molybdenum	µg/L		6									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5										
	Chlorobenzene	µg/L	<	0.5										
	Chlorodibromomethane	µg/L	<	0.5										
	Chloroethane	µg/L	<	0.5										
	2-Chloroethyl Vinyl Ether	µg/L	<	5										
	Chloroform	µg/L	<	0.5										
	Dichlorobromomethane	µg/L	<	0.5										
	1,1-Dichloroethane	µg/L	<	0.5										
	1,2-Dichloroethane	µg/L	<	0.5										
	1,1-Dichloroethylene	µg/L	<	0.5										
	1,2-Dichloropropane	µg/L	<	0.5										
	1,3-Dichloropropylene	µg/L	<	0.5										
	1,4-Dioxane	µg/L	<	5										
	Ethylbenzene	µg/L	<	0.5										
	Methyl Bromide	µg/L	<	0.5										
	Methyl Chloride	µg/L	<	0.5										
	Methylene Chloride	µg/L	<	0.5										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5										
	Tetrachloroethylene	µg/L	<	0.5										
	Toluene	µg/L		1										
	1,2-trans-Dichloroethylene	µg/L	<	0.5										
	1,1,1-Trichloroethane	µg/L	<	0.5										
	1,1,2-Trichloroethane	µg/L	<	0.5										
	Trichloroethylene	µg/L	<	0.5										
	Vinyl Chloride	µg/L	<	0.5										
Group 4	2-Chlorophenol	µg/L	<	5										
	2,4-Dichlorophenol	µg/L	<	5										
	2,4-Dimethylphenol	µg/L	<	5										
	4,6-Dinitro-o-Cresol	µg/L	<	10										
	2,4-Dinitrophenol	µg/L	<	10										
	2-Nitrophenol	µg/L	<	10										
	4-Nitrophenol	µg/L	<	5										
	p-Chloro-m-Cresol	µg/L	<	5										
	Pentachlorophenol	µg/L	<	10										
	Phenol	µg/L		91.1										
	2,4,6-Trichlorophenol	µg/L	<	5										
Group 5	Acenaphthene	µg/L	<	2.5										
	Acenaphthylene	µg/L	<	2.5										
	Anthracene	µg/L	<	2.5										
	Benzidine	µg/L	<	50										
	Benzo(a)Anthracene	µg/L	<	2.5										
	Benzo(a)Pyrene	µg/L	<	2.5										
	3,4-Benzofluoranthene	µg/L	<	2.5										
	Benzo(ghi)Perylene	µg/L	<	2.5										
	Benzo(k)Fluoranthene	µg/L	<	2.5										
	Bis(2-Chloroethoxy)Methane	µg/L	<	5										
	Bis(2-Chloroethyl)Ether	µg/L	<	5										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	5										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5										
	4-Bromophenyl Phenyl Ether	µg/L	<	5										
	Butyl Benzyl Phthalate	µg/L	<	5										
	2-Chloronaphthalene	µg/L	<	5										
	4-Chlorophenyl Phenyl Ether	µg/L	<	5										
	Chrysene	µg/L	<	2.5										
	Dibenzo(a,h)Anthrancene	µg/L	<	2.5										
	1,2-Dichlorobenzene	µg/L	<	0.5										
	1,3-Dichlorobenzene	µg/L	<	0.5										
	1,4-Dichlorobenzene	µg/L	<	0.5										
	3,3-Dichlorobenzidine	µg/L	<	5										
	Diethyl Phthalate	µg/L	<	5										
	Dimethyl Phthalate	µg/L	<	2.5										
	Di-n-Butyl Phthalate	µg/L		5.3										
	2,4-Dinitrotoluene	µg/L	<	5										

	2,6-Dinitrotoluene	µg/L	<	5										
	Di-n-Octyl Phthalate	µg/L	<	5										
	1,2-Diphenylhydrazine	µg/L	<	5										
	Fluoranthene	µg/L	<	2.5										
	Fluorene	µg/L	<	2.5										
	Hexachlorobenzene	µg/L	<	5										
	Hexachlorobutadiene	µg/L	<	0.5										
	Hexachlorocyclopentadiene	µg/L	<	5										
	Hexachloroethane	µg/L	<	2.5										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5										
	Isophorone	µg/L	<	5										
	Naphthalene	µg/L	<	0.5										
	Nitrobenzene	µg/L	<	5										
	n-Nitrosodimethylamine	µg/L	<	5										
	n-Nitrosodi-n-Propylamine	µg/L	<	5										
	n-Nitrosodiphenylamine	µg/L	<	5										
	Phenanthrene	µg/L	<	2.5										
	Pyrene	µg/L	<	2.5										
	1,2,4-Trichlorobenzene	µg/L	<	0.5										
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

Spring Township STP, NPDES Permit No. PA0043052, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Cacoosing 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	001850	2.23	266	18.9			Yes
End of Reach 1	001850	0	223	21.8			Yes

Q_{7-10}

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	2.23	0.305	5.78									211	7.59		
End of Reach 1	0	0.3504										211	7.59		

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	2.23														
End of Reach 1	0														

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Toxics Management Spreadsheet
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Model Results

Spring Township STP, NPDES Permit No. PA0043052, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.865 Analysis Hardness (mg/l): 243.1 Analysis pH: 7.64

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,962	
Total Antimony	0	0		0	1,100	1,100	2,878	
Total Arsenic	0	0		0	340	340	890	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	54,947	
Total Boron	0	0		0	8,100	8,100	21,194	
Total Cadmium	0	0		0	4.773	5.26	13.8	Chem Translator of 0.907 applied
Total Chromium (III)	0	0		0	1179.391	3,732	9,766	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	42.6	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	249	
Total Copper	0	0		0	31.036	32.3	84.6	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	57.6	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	167.345	253	662	Chem Translator of 0.662 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.31	Chem Translator of 0.85 applied
Total Nickel	0	0		0	992.760	995	2,603	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	14.824	17.4	45.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	170	
Total Zinc	0	0		0	248.735	254	665	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.85	

Acrylonitrile	0	0		0	650	650	1,701	
Benzene	0	0		0	640	640	1,675	
Bromoform	0	0		0	1,800	1,800	4,710	
Carbon Tetrachloride	0	0		0	2,800	2,800	7,326	
Chlorobenzene	0	0		0	1,200	1,200	3,140	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	47,098	
Chloroform	0	0		0	1,900	1,900	4,971	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	39,248	
1,1-Dichloroethylene	0	0		0	7,500	7,500	19,624	
1,2-Dichloropropane	0	0		0	11,000	11,000	28,782	
1,3-Dichloropropylene	0	0		0	310	310	811	
Ethylbenzene	0	0		0	2,900	2,900	7,588	
Methyl Bromide	0	0		0	550	550	1,439	
Methyl Chloride	0	0		0	28,000	28,000	73,263	
Methylene Chloride	0	0		0	12,000	12,000	31,398	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,617	
Tetrachloroethylene	0	0		0	700	700	1,832	
Toluene	0	0		0	1,700	1,700	4,448	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	17,792	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,850	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,896	
Trichloroethylene	0	0		0	2,300	2,300	6,018	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,465	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,448	
2,4-Dimethylphenol	0	0		0	660	660	1,727	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	209	
2,4-Dinitrophenol	0	0		0	660	660	1,727	
2-Nitrophenol	0	0		0	8,000	8,000	20,932	
4-Nitrophenol	0	0		0	2,300	2,300	6,018	
p-Chloro-m-Cresol	0	0		0	160	160	419	
Pentachlorophenol	0	0		0	16.517	16.5	43.2	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,204	
Acenaphthene	0	0		0	83	83.0	217	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	785	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.31	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	78,496	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	11,774	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	706	
Butyl Benzyl Phthalate	0	0		0	140	140	366	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	2,146	
1,3-Dichlorobenzene	0	0		0	350	350	916	
1,4-Dichlorobenzene	0	0		0	730	730	1,910	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	10,466	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,541	
Di-n-Butyl Phthalate	0	0		0	110	110	288	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	4,186	
2,6-Dinitrotoluene	0	0		0	990	990	2,590	
1,2-Diphenylhydrazine	0	0		0	15	15.0	39.2	
Fluoranthene	0	0		0	200	200	523	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	26.2	
Hexachlorocyclopentadiene	0	0		0	5	5.0	13.1	
Hexachloroethane	0	0		0	60	60.0	157	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	26,165	
Naphthalene	0	0		0	140	140	366	
Nitrobenzene	0	0		0	4,000	4,000	10,466	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	44,481	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	785	
Phenanthrene	0	0		0	5	5.0	13.1	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	340	

☑ ***CFC*** CCT (min): 20.033 PMF: 1 Analysis Hardness (mg/l): 240.29 Analysis pH: 7.63

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	631	
Total Arsenic	0	0		0	150	150	430	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	11,759	
Total Boron	0	0		0	1,600	1,600	4,589	
Total Cadmium	0	0		0	0.452	0.52	1.49	Chem Translator of 0.872 applied
Total Chromium (III)	0	0		0	151.957	177	507	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	29.8	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	54.5	
Total Copper	0	0		0	18.942	19.7	56.6	Chem Translator of 0.96 applied

Free Cyanide	0	0		0	5.2	5.2	14.9	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	4,302	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	6.442	9.71	27.9	Chem Translator of 0.663 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.6	Chem Translator of 0.85 applied
Total Nickel	0	0		0	109.183	110	314	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	14.3	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	37.3	
Total Zinc	0	0		0	248.306	252	722	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	8.6	
Acrylonitrile	0	0		0	130	130	373	
Benzene	0	0		0	130	130	373	
Bromoform	0	0		0	370	370	1,061	
Carbon Tetrachloride	0	0		0	560	560	1,606	
Chlorobenzene	0	0		0	240	240	688	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	10,038	
Chloroform	0	0		0	390	390	1,119	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	8,891	
1,1-Dichloroethylene	0	0		0	1,500	1,500	4,302	
1,2-Dichloropropane	0	0		0	2,200	2,200	6,310	
1,3-Dichloropropylene	0	0		0	61	61.0	175	
Ethylbenzene	0	0		0	580	580	1,664	
Methyl Bromide	0	0		0	110	110	315	
Methyl Chloride	0	0		0	5,500	5,500	15,775	
Methylene Chloride	0	0		0	2,400	2,400	6,884	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	602	
Tetrachloroethylene	0	0		0	140	140	402	
Toluene	0	0		0	330	330	946	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	4,015	
1,1,1-Trichloroethane	0	0		0	610	610	1,750	
1,1,2-Trichloroethane	0	0		0	680	680	1,950	
Trichloroethylene	0	0		0	450	450	1,291	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	315	
2,4-Dichlorophenol	0	0		0	340	340	975	
2,4-Dimethylphenol	0	0		0	130	130	373	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	45.9	
2,4-Dinitrophenol	0	0		0	130	130	373	
2-Nitrophenol	0	0		0	1,600	1,600	4,589	
4-Nitrophenol	0	0		0	470	470	1,348	

p-Chloro-m-Cresol	0	0		0	500	500	1,434	
Pentachlorophenol	0	0		0	12.672	12.7	36.3	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	261	
Acenaphthene	0	0		0	17	17.0	48.8	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	169	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.29	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	17,209	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,610	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	155	
Butyl Benzyl Phthalate	0	0		0	35	35.0	100	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	459	
1,3-Dichlorobenzene	0	0		0	69	69.0	198	
1,4-Dichlorobenzene	0	0		0	150	150	430	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,295	
Dimethyl Phthalate	0	0		0	500	500	1,434	
Di-n-Butyl Phthalate	0	0		0	21	21.0	60.2	
2,4-Dinitrotoluene	0	0		0	320	320	918	
2,6-Dinitrotoluene	0	0		0	200	200	574	
1,2-Diphenylhydrazine	0	0		0	3	3.0	8.6	
Fluoranthene	0	0		0	40	40.0	115	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	5.74	
Hexachlorocyclopentadiene	0	0		0	1	1.0	2.87	
Hexachloroethane	0	0		0	12	12.0	34.4	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	6,023	
Naphthalene	0	0		0	43	43.0	123	
Nitrobenzene	0	0		0	810	810	2,323	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	9,752	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	169	
Phenanthrene	0	0		0	1	1.0	2.87	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	74.6	

☑ ***THH*** CCT (min): 20.033 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	16.1	
Total Arsenic	0	0		0	10	10.0	28.7	
Total Barium	0	0		0	2,400	2,400	6,884	
Total Boron	0	0		0	3,100	3,100	8,891	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	11.5	
Dissolved Iron	0	0		0	300	300	860	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	2,868	
Total Mercury	0	0		0	0.050	0.05	0.14	
Total Nickel	0	0		0	610	610	1,750	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.69	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	8.6	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	287	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	16.3	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	94.6	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	195	

Methyl Bromide	0	0		0	100	100.0	287	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	163	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	287	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	28,681	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	86.0	
2,4-Dichlorophenol	0	0		0	10	10.0	28.7	
2,4-Dimethylphenol	0	0		0	100	100.0	287	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5.74	
2,4-Dinitrophenol	0	0		0	10	10.0	28.7	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	11,473	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	201	
Anthracene	0	0		0	300	300	860	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	574	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.29	
2-Chloronaphthalene	0	0		0	800	800	2,295	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	2,868	
1,3-Dichlorobenzene	0	0		0	7	7.0	20.1	
1,4-Dichlorobenzene	0	0		0	300	300	860	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,721	
Dimethyl Phthalate	0	0		0	2,000	2,000	5,736	
Di-n-Butyl Phthalate	0	0		0	20	20.0	57.4	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	

2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	57.4	
Fluorene	0	0		0	50	50.0	143	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	11.5	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	97.5	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	28.7	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	57.4	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.2	

☑ ***CRL*** CCT (min): 15.350 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	

Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.73	
Benzene	0	0		0	0.58	0.58	7.03	
Bromoform	0	0		0	7	7.0	84.9	
Carbon Tetrachloride	0	0		0	0.4	0.4	4.85	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	9.7	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	11.5	
1,2-Dichloroethane	0	0		0	9.9	9.9	120	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	10.9	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3.27	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	243	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.43	
Tetrachloroethylene	0	0		0	10	10.0	121	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	6.67	
Trichloroethylene	0	0		0	0.6	0.6	7.28	
Vinyl Chloride	0	0		0	0.02	0.02	0.24	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.36	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	18.2	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.001	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.36	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3.88	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	1.46	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.001	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.61	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.61	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.61	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.36	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.001	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.12	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1.21	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.012	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.008	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.061	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	40.0	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	21.0	32.7	1,258	1,962	3,145	µg/L	1,258	AFC	Discharge Conc ≥ 50% WQBEL (RP)

Total Copper	Report	Report	Report	Report	Report	µg/L	54.2	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
Total Antimony	16.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	6,884	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,589	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	1.49	µg/L	Discharge Conc < TQL
Total Chromium (III)	507	µg/L	Discharge Conc < TQL
Hexavalent Chromium	27.3	µg/L	Discharge Conc < TQL
Total Cobalt	54.5	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	11.5	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	860	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	4,302	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	27.9	µg/L	Discharge Conc < TQL
Total Manganese	2,868	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.14	µg/L	Discharge Conc < TQL
Total Nickel	314	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	14.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	29.2	µg/L	Discharge Conc < TQL
Total Thallium	0.69	µg/L	Discharge Conc < TQL
Total Zinc	427	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	5.03	µg/L	Discharge Conc < TQL
Acrylonitrile	0.73	µg/L	Discharge Conc < TQL
Benzene	7.03	µg/L	Discharge Conc < TQL
Bromoform	84.9	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	4.85	µg/L	Discharge Conc < TQL
Chlorobenzene	287	µg/L	Discharge Conc < TQL
Chlorodibromomethane	9.7	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	10,038	µg/L	Discharge Conc < TQL

Chloroform	16.3	µg/L	Discharge Conc < TQL
Dichlorobromomethane	11.5	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	120	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	94.6	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	10.9	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	3.27	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	195	µg/L	Discharge Conc < TQL
Methyl Bromide	287	µg/L	Discharge Conc < TQL
Methyl Chloride	15,775	µg/L	Discharge Conc < TQL
Methylene Chloride	243	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2.43	µg/L	Discharge Conc < TQL
Tetrachloroethylene	121	µg/L	Discharge Conc < TQL
Toluene	163	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	287	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,750	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	6.67	µg/L	Discharge Conc < TQL
Trichloroethylene	7.28	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.24	µg/L	Discharge Conc < TQL
2-Chlorophenol	86.0	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	28.7	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	287	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5.74	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	28.7	µg/L	Discharge Conc < TQL
2-Nitrophenol	4,589	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,348	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	268	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.36	µg/L	Discharge Conc < TQL
Phenol	11,473	µg/L	Discharge Conc ≤ 25% WQBEL
2,4,6-Trichlorophenol	18.2	µg/L	Discharge Conc < TQL
Acenaphthene	48.8	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	860	µg/L	Discharge Conc < TQL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.012	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.012	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.12	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.36	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	574	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	3.88	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	155	µg/L	Discharge Conc < TQL

Butyl Benzyl Phthalate	0.29	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	2,295	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	1.46	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.001	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	459	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	20.1	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	430	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.61	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,721	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	1,434	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	57.4	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.61	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.61	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.36	µg/L	Discharge Conc < TQL
Fluoranthene	57.4	µg/L	Discharge Conc < TQL
Fluorene	143	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.001	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.12	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	2.87	µg/L	Discharge Conc < TQL
Hexachloroethane	1.21	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.012	µg/L	Discharge Conc < TQL
Isophorone	97.5	µg/L	Discharge Conc < TQL
Naphthalene	123	µg/L	Discharge Conc < TQL
Nitrobenzene	28.7	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.008	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.061	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	40.0	µg/L	Discharge Conc < TQL
Phenanthrene	2.87	µg/L	Discharge Conc < TQL
Pyrene	57.4	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.2	µg/L	Discharge Conc < TQL

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RUN #2

Discharge Information

Instructions | Discharge | Stream

Facility: **Spring Township STP** NPDES Permit No.: **PA0043052** 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
2	295	7.72						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		1120									
	Chloride (PWS)	mg/L		325									
	Bromide	mg/L		0.15									
	Sulfate (PWS)	mg/L		38.9									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		680									
	Total Antimony	µg/L		0.4									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		76									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		200									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.4									
	Total Copper	µg/L		7									
	Free Cyanide	µg/L	<	1									
	Total Cyanide	µg/L	<	6									
	Dissolved Iron	µg/L		20									
	Total Iron	µg/L		30									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		10									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		3.1									
	Total Phenols (Phenolics) (PWS)	µg/L		1080									
	Total Selenium	µg/L		1									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.3									
	Total Zinc	µg/L		37									
	Total Molybdenum	µg/L		6									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L	<	0.5									
	Dichlorobromomethane	µg/L	<	5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	5									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L		1									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	5									
	2,4-Dichlorophenol	µg/L	<	5									
	2,4-Dimethylphenol	µg/L	<	5									
	4,6-Dinitro-o-Cresol	µg/L	<	10									
	2,4-Dinitrophenol	µg/L	<	10									
	2-Nitrophenol	µg/L	<	10									
	4-Nitrophenol	µg/L	<	5									
	p-Chloro-m-Cresol	µg/L	<	5									
	Pentachlorophenol	µg/L	<	10									
	Phenol	µg/L		91.1									
	2,4,6-Trichlorophenol	µg/L	<	5									
Group 5	Acenaphthene	µg/L	<	2.5									
	Acenaphthylene	µg/L	<	2.5									
	Anthracene	µg/L	<	2.5									
	Benzidine	µg/L	<	50									
	Benzo(a)Anthracene	µg/L	<	2.5									
	Benzo(a)Pyrene	µg/L	<	2.5									
	3,4-Benzofluoranthene	µg/L	<	2.5									
	Benzo(ghi)Perylene	µg/L	<	2.5									
	Benzo(k)Fluoranthene	µg/L	<	2.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	5									
	Bis(2-Chloroethyl)Ether	µg/L	<	5									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	5									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5									
	4-Bromophenyl Phenyl Ether	µg/L	<	5									
	Butyl Benzyl Phthalate	µg/L	<	5									
	2-Chloronaphthalene	µg/L	<	5									
	4-Chlorophenyl Phenyl Ether	µg/L	<	5									
	Chrysene	µg/L	<	2.5									
	Dibenzo(a,h)Anthrancene	µg/L	<	2.5									
	1,2-Dichlorobenzene	µg/L	<	0.5									
	1,3-Dichlorobenzene	µg/L	<	0.5									
	1,4-Dichlorobenzene	µg/L	<	0.5									
	3,3-Dichlorobenzidine	µg/L	<	5									
	Diethyl Phthalate	µg/L	<	5									
	Dimethyl Phthalate	µg/L	<	2.5									
	Di-n-Butyl Phthalate	µg/L		5.3									
	2,4-Dinitrotoluene	µg/L	<	5									

	2,6-Dinitrotoluene	µg/L	<	5									
	Di-n-Octyl Phthalate	µg/L	<	5									
	1,2-Diphenylhydrazine	µg/L	<	5									
	Fluoranthene	µg/L	<	2.5									
	Fluorene	µg/L	<	2.5									
	Hexachlorobenzene	µg/L	<	5									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	5									
	Hexachloroethane	µg/L	<	2.5									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5									
	Isophorone	µg/L	<	5									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	5									
	n-Nitrosodimethylamine	µg/L	<	5									
	n-Nitrosodi-n-Propylamine	µg/L	<	5									
	n-Nitrosodiphenylamine	µg/L	<	5									
	Phenanthrene	µg/L	<	2.5									
	Pyrene	µg/L	<	2.5									
	1,2,4-Trichlorobenzene	µg/L	<	0.5									
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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Stream / Surface Water Information

Spring Township STP, NPDES Permit No. PA0043052, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Cacoosing 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	001850	2.23	266	18.9			Yes
End of Reach 1	001850	0	223	21.8			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	2.23	0.305	5.78									211	7.59		
End of Reach 1	0	0.3504										211	7.59		

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	2.23														
End of Reach 1	0														

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Model Results

Spring Township STP, NPDES Permit No. PA0043052, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.865 Analysis Hardness (mg/l): 243.1 Analysis pH: 7.64

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,962	
Total Antimony	0	0		0	1,100	1,100	2,878	
Total Arsenic	0	0		0	340	340	890	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	54,947	
Total Boron	0	0		0	8,100	8,100	21,194	
Total Cadmium	0	0		0	4.773	5.26	13.8	Chem Translator of 0.907 applied
Total Chromium (III)	0	0		0	1179.391	3,732	9,766	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	42.6	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	249	
Total Copper	0	0		0	31.036	32.3	84.6	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	57.6	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	167.345	253	662	Chem Translator of 0.662 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.31	Chem Translator of 0.85 applied
Total Nickel	0	0		0	992.760	995	2,603	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	14.824	17.4	45.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	170	
Total Zinc	0	0		0	248.735	254	665	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.85	

Acrylonitrile	0	0		0	650	650	1,701	
Benzene	0	0		0	640	640	1,675	
Bromoform	0	0		0	1,800	1,800	4,710	
Carbon Tetrachloride	0	0		0	2,800	2,800	7,326	
Chlorobenzene	0	0		0	1,200	1,200	3,140	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	47,098	
Chloroform	0	0		0	1,900	1,900	4,971	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	39,248	
1,1-Dichloroethylene	0	0		0	7,500	7,500	19,624	
1,2-Dichloropropane	0	0		0	11,000	11,000	28,782	
1,3-Dichloropropylene	0	0		0	310	310	811	
Ethylbenzene	0	0		0	2,900	2,900	7,588	
Methyl Bromide	0	0		0	550	550	1,439	
Methyl Chloride	0	0		0	28,000	28,000	73,263	
Methylene Chloride	0	0		0	12,000	12,000	31,398	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,617	
Tetrachloroethylene	0	0		0	700	700	1,832	
Toluene	0	0		0	1,700	1,700	4,448	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	17,792	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,850	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,896	
Trichloroethylene	0	0		0	2,300	2,300	6,018	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,465	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,448	
2,4-Dimethylphenol	0	0		0	660	660	1,727	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	209	
2,4-Dinitrophenol	0	0		0	660	660	1,727	
2-Nitrophenol	0	0		0	8,000	8,000	20,932	
4-Nitrophenol	0	0		0	2,300	2,300	6,018	
p-Chloro-m-Cresol	0	0		0	160	160	419	
Pentachlorophenol	0	0		0	16.517	16.5	43.2	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,204	
Acenaphthene	0	0		0	83	83.0	217	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	785	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.31	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	78,496	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	11,774	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	706	
Butyl Benzyl Phthalate	0	0		0	140	140	366	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	2,146	
1,3-Dichlorobenzene	0	0		0	350	350	916	
1,4-Dichlorobenzene	0	0		0	730	730	1,910	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	10,466	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,541	
Di-n-Butyl Phthalate	0	0		0	110	110	288	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	4,186	
2,6-Dinitrotoluene	0	0		0	990	990	2,590	
1,2-Diphenylhydrazine	0	0		0	15	15.0	39.2	
Fluoranthene	0	0		0	200	200	523	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	26.2	
Hexachlorocyclopentadiene	0	0		0	5	5.0	13.1	
Hexachloroethane	0	0		0	60	60.0	157	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	26,165	
Naphthalene	0	0		0	140	140	366	
Nitrobenzene	0	0		0	4,000	4,000	10,466	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	44,481	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	785	
Phenanthrene	0	0		0	5	5.0	13.1	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	340	

☑ ***CFC*** CCT (min): 20.033 PMF: 1 Analysis Hardness (mg/l): 240.29 Analysis pH: 7.63

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	631	
Total Arsenic	0	0		0	150	150	430	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	11,759	
Total Boron	0	0		0	1,600	1,600	4,589	
Total Cadmium	0	0		0	0.452	0.52	1.49	Chem Translator of 0.872 applied
Total Chromium (III)	0	0		0	151.957	177	507	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	29.8	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	54.5	
Total Copper	0	0		0	18.942	19.7	56.6	Chem Translator of 0.96 applied

Free Cyanide	0	0		0	5.2	5.2	14.9	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	4,302	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	6.442	9.71	27.9	Chem Translator of 0.663 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.6	Chem Translator of 0.85 applied
Total Nickel	0	0		0	109.183	110	314	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	14.3	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	37.3	
Total Zinc	0	0		0	248.306	252	722	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	8.6	
Acrylonitrile	0	0		0	130	130	373	
Benzene	0	0		0	130	130	373	
Bromoform	0	0		0	370	370	1,061	
Carbon Tetrachloride	0	0		0	560	560	1,606	
Chlorobenzene	0	0		0	240	240	688	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	10,038	
Chloroform	0	0		0	390	390	1,119	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	8,891	
1,1-Dichloroethylene	0	0		0	1,500	1,500	4,302	
1,2-Dichloropropane	0	0		0	2,200	2,200	6,310	
1,3-Dichloropropylene	0	0		0	61	61.0	175	
Ethylbenzene	0	0		0	580	580	1,664	
Methyl Bromide	0	0		0	110	110	315	
Methyl Chloride	0	0		0	5,500	5,500	15,775	
Methylene Chloride	0	0		0	2,400	2,400	6,884	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	602	
Tetrachloroethylene	0	0		0	140	140	402	
Toluene	0	0		0	330	330	946	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	4,015	
1,1,1-Trichloroethane	0	0		0	610	610	1,750	
1,1,2-Trichloroethane	0	0		0	680	680	1,950	
Trichloroethylene	0	0		0	450	450	1,291	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	315	
2,4-Dichlorophenol	0	0		0	340	340	975	
2,4-Dimethylphenol	0	0		0	130	130	373	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	45.9	
2,4-Dinitrophenol	0	0		0	130	130	373	
2-Nitrophenol	0	0		0	1,600	1,600	4,589	
4-Nitrophenol	0	0		0	470	470	1,348	

p-Chloro-m-Cresol	0	0		0	500	500	1,434	
Pentachlorophenol	0	0		0	12.672	12.7	36.3	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	261	
Acenaphthene	0	0		0	17	17.0	48.8	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	169	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.29	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	17,209	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,610	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	155	
Butyl Benzyl Phthalate	0	0		0	35	35.0	100	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	459	
1,3-Dichlorobenzene	0	0		0	69	69.0	198	
1,4-Dichlorobenzene	0	0		0	150	150	430	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,295	
Dimethyl Phthalate	0	0		0	500	500	1,434	
Di-n-Butyl Phthalate	0	0		0	21	21.0	60.2	
2,4-Dinitrotoluene	0	0		0	320	320	918	
2,6-Dinitrotoluene	0	0		0	200	200	574	
1,2-Diphenylhydrazine	0	0		0	3	3.0	8.6	
Fluoranthene	0	0		0	40	40.0	115	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	5.74	
Hexachlorocyclopentadiene	0	0		0	1	1.0	2.87	
Hexachloroethane	0	0		0	12	12.0	34.4	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	6,023	
Naphthalene	0	0		0	43	43.0	123	
Nitrobenzene	0	0		0	810	810	2,323	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	9,752	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	169	
Phenanthrene	0	0		0	1	1.0	2.87	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	74.6	

☑ ***THH*** CCT (min): 20.033 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	16.1	
Total Arsenic	0	0		0	10	10.0	28.7	
Total Barium	0	0		0	2,400	2,400	6,884	
Total Boron	0	0		0	3,100	3,100	8,891	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	11.5	
Dissolved Iron	0	0		0	300	300	860	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	2,868	
Total Mercury	0	0		0	0.050	0.05	0.14	
Total Nickel	0	0		0	610	610	1,750	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.69	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	8.6	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	287	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	16.3	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	94.6	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	195	

Methyl Bromide	0	0		0	100	100.0	287	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	163	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	287	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	28,681	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	86.0	
2,4-Dichlorophenol	0	0		0	10	10.0	28.7	
2,4-Dimethylphenol	0	0		0	100	100.0	287	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5.74	
2,4-Dinitrophenol	0	0		0	10	10.0	28.7	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	11,473	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	201	
Anthracene	0	0		0	300	300	860	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	574	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.29	
2-Chloronaphthalene	0	0		0	800	800	2,295	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	2,868	
1,3-Dichlorobenzene	0	0		0	7	7.0	20.1	
1,4-Dichlorobenzene	0	0		0	300	300	860	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,721	
Dimethyl Phthalate	0	0		0	2,000	2,000	5,736	
Di-n-Butyl Phthalate	0	0		0	20	20.0	57.4	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	

2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	57.4	
Fluorene	0	0		0	50	50.0	143	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	11.5	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	97.5	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	28.7	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	57.4	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.2	

☑ ***CRL*** CCT (min): 15.350 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	

Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.73	
Benzene	0	0		0	0.58	0.58	7.03	
Bromoform	0	0		0	7	7.0	84.9	
Carbon Tetrachloride	0	0		0	0.4	0.4	4.85	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	9.7	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	11.5	
1,2-Dichloroethane	0	0		0	9.9	9.9	120	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	10.9	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3.27	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	243	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.43	
Tetrachloroethylene	0	0		0	10	10.0	121	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	6.67	
Trichloroethylene	0	0		0	0.6	0.6	7.28	
Vinyl Chloride	0	0		0	0.02	0.02	0.24	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.36	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	18.2	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.001	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.36	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3.88	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	1.46	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.001	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.61	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.61	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.61	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.36	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.001	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.12	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1.21	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.012	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.008	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.061	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	40.0	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	21.0	32.7	1,258	1,962	3,145	µg/L	1,258	AFC	Discharge Conc ≥ 50% WQBEL (RP)

Total Copper	Report	Report	Report	Report	Report	µg/L	54.2	AFC	Discharge Conc > 10% WQBEL (no RP)
Dichlorobromomethane	Report	Report	Report	Report	Report	µg/L	11.5	CRL	Discharge Conc > 25% 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
Total Antimony	16.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	6,884	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,589	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	1.49	µg/L	Discharge Conc < TQL
Total Chromium (III)	507	µg/L	Discharge Conc < TQL
Hexavalent Chromium	27.3	µg/L	Discharge Conc < TQL
Total Cobalt	54.5	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	11.5	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	860	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	4,302	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	27.9	µg/L	Discharge Conc < TQL
Total Manganese	2,868	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.14	µg/L	Discharge Conc < TQL
Total Nickel	314	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	14.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	29.2	µg/L	Discharge Conc < TQL
Total Thallium	0.69	µg/L	Discharge Conc < TQL
Total Zinc	427	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	5.03	µg/L	Discharge Conc < TQL
Acrylonitrile	0.73	µg/L	Discharge Conc < TQL
Benzene	7.03	µg/L	Discharge Conc < TQL
Bromoform	84.9	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	4.85	µg/L	Discharge Conc < TQL
Chlorobenzene	287	µg/L	Discharge Conc < TQL
Chlorodibromomethane	9.7	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	10,038	µg/L	Discharge Conc < TQL

Chloroform	16.3	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	120	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	94.6	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	10.9	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	3.27	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	195	µg/L	Discharge Conc < TQL
Methyl Bromide	287	µg/L	Discharge Conc < TQL
Methyl Chloride	15,775	µg/L	Discharge Conc < TQL
Methylene Chloride	243	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2.43	µg/L	Discharge Conc < TQL
Tetrachloroethylene	121	µg/L	Discharge Conc < TQL
Toluene	163	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	287	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,750	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	6.67	µg/L	Discharge Conc < TQL
Trichloroethylene	7.28	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.24	µg/L	Discharge Conc < TQL
2-Chlorophenol	86.0	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	28.7	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	287	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5.74	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	28.7	µg/L	Discharge Conc < TQL
2-Nitrophenol	4,589	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,348	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	268	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.36	µg/L	Discharge Conc < TQL
Phenol	11,473	µg/L	Discharge Conc ≤ 25% WQBEL
2,4,6-Trichlorophenol	18.2	µg/L	Discharge Conc < TQL
Acenaphthene	48.8	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	860	µg/L	Discharge Conc < TQL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.012	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.012	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.12	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.36	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	574	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	3.88	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	155	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.29	µg/L	Discharge Conc < TQL

2-Chloronaphthalene	2,295	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	1.46	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.001	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	459	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	20.1	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	430	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.61	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,721	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	1,434	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	57.4	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.61	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.61	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.36	µg/L	Discharge Conc < TQL
Fluoranthene	57.4	µg/L	Discharge Conc < TQL
Fluorene	143	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.001	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.12	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	2.87	µg/L	Discharge Conc < TQL
Hexachloroethane	1.21	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.012	µg/L	Discharge Conc < TQL
Isophorone	97.5	µg/L	Discharge Conc < TQL
Naphthalene	123	µg/L	Discharge Conc < TQL
Nitrobenzene	28.7	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.008	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.061	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	40.0	µg/L	Discharge Conc < TQL
Phenanthrene	2.87	µg/L	Discharge Conc < TQL
Pyrene	57.4	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.2	µg/L	Discharge Conc < TQL

Attachment C

WET Testing

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 4/29/2021

Replicate No.	Control	100.00%
1	10	7
2	10	10
3	10	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.000
Std Dev.	0.000	1.414
# Replicates	4	4

T-Test Result: 2.0838
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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 4/29/2021

Replicate No.	Control	100.00%
1	0.434	0.36
2	0.427	0.49
3	0.406	0.484
4	0.452	0.488
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.430	0.456
Std Dev.	0.019	0.064
# Replicates	4	4

T-Test Result: 4.0797
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 4/28/2021

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Test Completion Date:

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 4/28/2021

Replicate No.	Control	TIWC
1	30	28
2	28	21
3	26	25
4	17	26
5	26	24
6	28	22
7	22	30
8	33	26
9	27	31
10	17	33
11		
12		
13		
14		
15		
Mean	25.400	26.600
Std Dev.	5.254	3.893
# Replicates	10	10

T-Test Result: 4.3104
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name

Spring Township Berk County

Permit No.

PA0043052

Test Completion Date 8/2/2022

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 8/15/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	32	34
2	34	21
3	36	37
4	36	36
5	21	36
6	23	33
7	30	32
8	23	33
9	36	39
10	32	36
11		
12		
13		
14		
15		
Mean	30.300	33.700
Std Dev.	5.870	4.945
# Replicates	10	10

T-Test Result	5.2419
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	**PASS**

Test Completion Date: 8/15/2023

Replicate No.	Control	TIWC
1	33	19
2	35	22
3	25	22
4	26	22
5	27	24
6	32	19
7	28	12
8	31	18
9	26	9
10	27	12
11		
12		
13		
14		
15		
Mean	29.000	17.900
Std Dev.	3.464	5.152
# Replicates	10	10

T-Test Result	-2.1100
Deg. of Freedom	14
Critical T Value	0.8681
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	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Township Berks County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	10	10
2	8	10
3	10	9
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	9.750
Std Dev.	1.000	0.500
# Replicates	4	4

T-Test Result	5.2627
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 8/15/2023

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	8	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	9.750
Std Dev.	1.000	0.500
# Replicates	4	4

T-Test Result	5.2627
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	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name
Spring Township Berks County

Permit No.
PA0043052

Test Completion Date 8/2/2022

Replicate No.	Control	TIWC
1	0.861	0.956
2	0.703	0.975
3	0.806	0.851
4	0.876	0.93
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.812	0.928
Std Dev.	0.078	0.055
# Replicates	4	4

T-Test Result 7.9671
Deg. of Freedom 5
Critical T Value 0.7267
Pass or Fail **PASS**

Test Completion Date 8/15/2023

Replicate No.	Control	TIWC
1	0.564	0.517
2	0.589	0.527
3	0.413	0.568
4	0.537	0.504
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.526	0.529
Std Dev.	0.078	0.028
# Replicates	4	4

T-Test Result 4.1583
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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 12/15/2020

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

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

Test Completion Date:

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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 12/15/2020

Replicate No.	Control	TIWC
1	0.346	0.335
2	0.384	0.485
3	0.353	0.355
4	0.343	0.35
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.357	0.381
Std Dev.	0.019	0.070
# Replicates	4	4

T-Test Result	3.2032
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		
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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 12/15/2020

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date:

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 12/15/2020

Replicate No.	Control	TIWC
1	38	32
2	30	35
3	34	46
4	40	36
5	37	40
6	31	36
7	41	34
8	36	35
9	34	26
10	34	38
11		
12		
13		
14		
15		
Mean	35.500	35.800
Std Dev.	3.598	5.181
# Replicates	10	10

T-Test Result: 4.9667
Deg. of Freedom: 15
Critical T Value: 0.8662
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	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

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: 8/15/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date: 10/9/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date: 1/4/2024

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Cerlodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Replicate No.	Test Completion Date 8/2/2022 Control	TIWC
1	32	34
2	34	21
3	36	37
4	36	36
5	21	36
6	23	33
7	30	32
8	23	33
9	36	39
10	32	36
11		
12		
13		
14		
15		
Mean	30.300	33.700
Std Dev.	5.870	4.945
# Replicates	10	10

T-Test Result	5.2419
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Replicate No.	Test Completion Date 8/15/2023 Control	TIWC
1	33	19
2	35	22
3	25	22
4	26	22
5	27	24
6	32	19
7	28	12
8	31	18
9	26	9
10	27	12
11		
12		
13		
14		
15		
Mean	29.000	17.900
Std Dev.	3.464	5.152
# Replicates	10	10

T-Test Result	-2.1100
Deg. of Freedom	14
Critical T Value	0.8681
Pass or Fail	FAIL

Replicate No.	Test Completion Date 10/9/2023 Control	TIWC
1	27	20
2	25	17
3	26	20
4	22	17
5	28	14
6	35	13
7	32	13
8	34	19
9	33	26
10	33	26
11		
12		
13		
14		
15		
Mean	29.300	18.500
Std Dev.	4.572	4.743
# Replicates	10	10

T-Test Result	-1.8775
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	FAIL

Replicate No.	Test Completion Date 1/4/2024 Control	TIWC
1	34	31
2	30	34
3	28	34
4	18	16
5	30	27
6	29	30
7	28	19
8	25	27
9	30	32
10	16	26
11		
12		
13		
14		
15		
Mean	26.800	27.600
Std Dev.	5.653	6.059
# Replicates	10	10

T-Test Result	3.2072
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

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: 8/15/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date: 3/4/2024

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		
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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	32	34
2	34	21
3	36	37
4	36	36
5	21	36
6	23	33
7	30	32
8	23	33
9	36	39
10	32	36
11		
12		
13		
14		
15		
Mean	30.300	33.700
Std Dev.	5.870	4.945
# Replicates	10	10

T-Test Result	5.2419
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Test Completion Date: 8/15/2023

Replicate No.	Control	TIWC
1	33	19
2	35	22
3	25	22
4	26	22
5	27	24
6	32	19
7	28	12
8	31	18
9	26	9
10	27	12
11		
12		
13		
14		
15		
Mean	29.000	17.900
Std Dev.	3.464	5.152
# Replicates	10	10

T-Test Result	-2.1100
Deg. of Freedom	14
Critical T Value	0.8681
Pass or Fail	FAIL

Test Completion Date: 3/4/2024

Replicate No.	Control	TIWC
1	30	37
2	29	34
3	25	33
4	32	31
5	27	21
6	26	31
7	28	30
8	30	23
9	26	28
10	29	35
11		
12		
13		
14		
15		
Mean	28.200	30.300
Std Dev.	2.201	5.100
# Replicates	10	10

T-Test Result	5.3977
Deg. of Freedom	13
Critical T Value	0.8702
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		
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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name

Spring Township Berks County

Permit No.

PA0043052

Test Completion Date 8/2/2022

Replicate No.	Control	TIWC
1	10	10
2	8	10
3	10	9
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	9.750
Std Dev.	1.000	0.500
# Replicates	4	4

T-Test Result	5.2627
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date 8/15/2023

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	8	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	9.750
Std Dev.	1.000	0.500
# Replicates	4	4

T-Test Result	5.2627
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date 3/5/2024

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

T-Test Result	5.7714
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		
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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Township Berks County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	0.861	0.956
2	0.703	0.975
3	0.806	0.851
4	0.876	0.93
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.812	0.928
Std Dev.	0.078	0.055
# Replicates	4	4

T-Test Result	7.9671
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 8/15/2023

Replicate No.	Control	TIWC
1	0.564	0.517
2	0.589	0.527
3	0.413	0.568
4	0.537	0.504
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.526	0.529
Std Dev.	0.078	0.028
# Replicates	4	4

T-Test Result	4.1583
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 3/5/2024

Replicate No.	Control	TIWC
1	0.617	0.578
2	0.64	0.514
3	0.676	0.734
4	0.562	0.579
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.624	0.601
Std Dev.	0.048	0.094
# Replicates	4	4

T-Test Result	2.6632
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		
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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Township Berks County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	0.861	0.956
2	0.703	0.975
3	0.806	0.851
4	0.876	0.93
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.812	0.928
Std Dev.	0.078	0.055
# Replicates	4	4

T-Test Result	7.9671
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 8/15/2023

Replicate No.	Control	TIWC
1	0.564	0.517
2	0.589	0.527
3	0.413	0.568
4	0.537	0.504
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.526	0.529
Std Dev.	0.078	0.028
# Replicates	4	4

T-Test Result	4.1583
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 3/5/2024

Replicate No.	Control	TIWC
1	0.617	0.578
2	0.64	0.514
3	0.676	0.734
4	0.562	0.579
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.624	0.601
Std Dev.	0.048	0.094
# Replicates	4	4

T-Test Result	2.6632
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		
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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Township Berks County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	0.861	0.956
2	0.703	0.975
3	0.806	0.851
4	0.876	0.93
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.812	0.928
Std Dev.	0.078	0.055
# Replicates	4	4

T-Test Result: 7.9671
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name
Spring Township Berk County

Permit No.
PA0043052

Test Completion Date 8/2/2022

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	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	32	34
2	34	21
3	36	37
4	36	36
5	21	36
6	23	33
7	30	32
8	23	33
9	36	39
10	32	36
11		
12		
13		
14		
15		
Mean	30.300	33.700
Std Dev.	5.870	4.945
# Replicates	10	10

T-Test Result	5.2419
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	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 3/9/2021

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

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

Test Completion Date:

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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 3/9/2021

Replicate No.	Control	TIWC
1	0.351	0.362
2	0.36	0.311
3	0.321	0.361
4	0.336	0.37
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.342	0.351
Std Dev.	0.017	0.027
# Replicates	4	4

T-Test Result	6.3257
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	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 3/9/2021

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 3/9/2021

Replicate No.	Control	TIWC
1	34	30
2	33	37
3	29	45
4	34	36
5	28	28
6	32	34
7	32	24
8	27	38
9	33	20
10	34	43
11		
12		
13		
14		
15		
Mean	31.600	33.500
Std Dev.	2.633	8.003
# Replicates	10	10

T-Test Result: 3.7594
Deg. of Freedom: 12
Critical T Value: 0.8726
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	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Test Completion Date: 8/2/2022

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: 8/15/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date: 10/9/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date:

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Township Berk County

Permit No.: PA0043052

Replicate No.	Test Completion Date 8/2/2022 Control	TIWC
1	32	34
2	34	21
3	36	37
4	36	36
5	21	36
6	23	33
7	30	32
8	23	33
9	36	39
10	32	36
11		
12		
13		
14		
15		
Mean	30.300	33.700
Std Dev.	5.870	4.945
# Replicates	10	10
T-Test Result	5.2419	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 8/15/2023 Control	TIWC
1	33	19
2	35	22
3	25	22
4	26	22
5	27	24
6	32	19
7	28	12
8	31	18
9	26	9
10	27	12
11		
12		
13		
14		
15		
Mean	29.000	17.900
Std Dev.	3.464	5.152
# Replicates	10	10
T-Test Result	-2.1100	
Deg. of Freedom	14	
Critical T Value	0.8681	
Pass or Fail	FAIL	

Replicate No.	Test Completion Date 10/9/2023 Control	TIWC
1	27	20
2	25	17
3	26	20
4	22	17
5	26	14
6	35	13
7	32	13
8	34	19
9	33	26
10	33	26
11		
12		
13		
14		
15		
Mean	29.300	18.500
Std Dev.	4.572	4.743
# Replicates	10	10
T-Test Result	-1.8775	
Deg. of Freedom	16	
Critical T Value	0.8647	
Pass or Fail	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	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 10/6/2020

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

T-Test Result: 12.5523
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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 10/6/2020

Replicate No.	Control	TIWC
1	0.258	0.383
2	0.28	0.402
3	0.342	0.426
4	0.296	0.396
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.294	0.402
Std Dev.	0.036	0.018
# Replicates	4	4

T-Test Result: 11.2583
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring Twsp

Permit No.: PA0043052

Test Completion Date: 10/5/2020

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

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

Test Completion Date:

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Spring TWSP

Permit No.: PA0043052

Test Completion Date: 10/5/2020

Replicate No.	Control	TIWC
1	33	28
2	25	23
3	26	28
4	34	22
5	24	24
6	25	27
7	23	28
8	31	32
9	29	24
10	22	17
11		
12		
13		
14		
15		
Mean	27.200	25.300
Std Dev.	4.264	4.191
# Replicates	10	10

T-Test Result	2.9393
Deg. of Freedom	16
Critical T Value	0.8647
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	Pimephales
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 9/17/2024

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

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

Test Completion Date: 2/18/2020

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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 9/17/2024

Replicate No.	Control	TIWC
1	0.452	0.418
2	0.426	0.389
3	0.409	0.416
4	0.428	0.39
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.429	0.403
Std Dev.	0.018	0.016
# Replicates	4	4

T-Test Result	7.8884
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 9/17/2024

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 9/17/2024

Replicate No.	Control	TIWC
1	37	36
2	37	47
3	38	45
4	29	40
5	32	32
6	36	46
7	38	43
8	34	38
9	31	40
10	40	42
11		
12		
13		
14		
15		
Mean	35.200	40.900
Std Dev.	3.553	4.701
# Replicates	10	10

T-Test Result	8.4855
Deg. of Freedom	15
Critical T Value	0.8662
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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 11/12/2024

Replicate No.	Control	TIWC
1	10	10
2	9	10
3	10	9
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: 2/18/2020

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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name
Township of Spring

Permit No.
PA0043052

Test Completion Date: 11/12/2024

Replicate No.	Control	TIWC
1	0.356	0.363
2	0.266	0.285
3	0.351	0.326
4	0.321	0.344
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.324	0.330
Std Dev.	0.041	0.033
# Replicates	4	4

T-Test Result	3.8196
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	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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 11/12/2024

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 11/12/2024

Replicate No.	Control	TIWC
1	34	31
2	32	37
3	37	32
4	35	38
5	33	30
6	37	39
7	32	36
8	34	34
9	33	39
10	28	35
11		
12		
13		
14		
15		
Mean	33.500	35.100
Std Dev.	2.635	3.281
# Replicates	10	10

T-Test Result	8.2348
Deg. of Freedom	15
Critical T Value	0.8662
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	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 1/7/2025

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

T-Test Result	6.9275
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 2/18/2020

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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name

Township of Spring

Permit No.

PA0043052

Test Completion Date 11/12/2024

Replicate No.	Control	TIWC
1	0.288	0.302
2	0.3	0.363
3	0.281	0.307
4	0.325	0.325
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.299	0.324
Std Dev.	0.019	0.028
# Replicates	4	4

T-Test Result	6.4288
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 1/7/2025

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 1/7/2025

Replicate No.	Control	TIWC
1	41	36
2	39	39
3	40	43
4	37	42
5	45	39
6	33	46
7	34	42
8	37	37
9	39	39
10	39	42
11		
12		
13		
14		
15		
Mean	38.400	40.500
Std Dev.	3.438	3.028
# Replicates	10	10

T-Test Result: 9.3031
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	Survival
TIWC (decimal)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 5/20/2025

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

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

Test Completion Date: 2/18/2020

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)	0.43
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 5/20/2025

Replicate No.	Control	TIWC
1	0.283	0.316
2	0.35	0.347
3	0.316	0.281
4	0.312	0.349
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.315	0.323
Std Dev.	0.027	0.032
# Replicates	4	4

T-Test Result	4.5673
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 5/20/2025

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

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

Test Completion Date:

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)	0.43
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Township of Spring

Permit No.: PA0043052

Test Completion Date: 5/20/2025

Replicate No.	Control	TIWC
1	32	34
2	42	40
3	40	41
4	35	32
5	36	34
6	36	44
7	5	43
8	33	34
9	25	36
10	32	38
11		
12		
13		
14		
15		
Mean	31.600	37.600
Std Dev.	10.448	4.222
# Replicates	10	10

T-Test Result	4.9385
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	

Attachment D
Correspondence

Hong, Nicholas

From: Matthew Boggs <MBoggs@entecheng.com>
Sent: Friday, August 22, 2025 10:08 AM
To: Hong, Nicholas
Cc: Martin, Daniel; Martin, Daniel; Andrew Zimmerman; Dale T. Miller; Marci Poli; Kyle Smith; Ricky Steinman; Dean Murray
Subject: [External] RE: Spring TWP / NPDES renewal application / PA0043052

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.*

Nick,

Regarding your questions below, I offer the following responses:

1. As a result of a rain event on 7/10/23 that dumped 6.70" of rain and caused a spike of flow into the WWTP, the Aluminum sample was 1850 ug/L. However, the monthly average was 0.66 mg/L for that month when incorporating the other tests performed.
2. EDMR's from 4/2020 for TDS was a typo and was revised to the correct value which was 736mg/l. TDS for 5/2020 EDMR was also revised the actual value was 717mg/l.
3. The results for Dichlorobromomethane test since Spring started have been <0.005mg/L. Spring has revised the EDMR's to reflect this, 2/2020, 3/2020, 4/2020, 5/2020, 6/2020 & 8/2020 were corrected.

I will respond to your other e-mail momentarily. Let me know if you have any additional questions. Thanks.

-Matt

Matthew L. Boggs, P.E.
Entech Engineering, Inc.
c. (484) 390-9056

From: Hong, Nicholas <nhong@pa.gov>
Sent: Tuesday, August 12, 2025 12:55 PM
To: pdarrah@springtwpberks.org; Matthew Boggs <MBoggs@entecheng.com>
Cc: Martin, Daniel <daniemarti@pa.gov>
Subject: RE: Spring TWP / NPDES renewal application / PA0043052

On the monitoring data confirm the following discrepancies.

1. The tabulated data on the Pollutant Group 2 lists aluminum at 1850 ug/l. Data from DMR from 02/2020 to 06/2025 shows the maximum aluminum concentration at 680 ug/l in February 2020. Clarify if the maximum sample result is 1850 ug/l.

1

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Parameter Name	DMR Value	Permit Limit	Units	Sta
02/01/2020	02/29/2020	03/31/2020	Aluminum, Total	0.68	1.11	mg/L	Average Mont
03/01/2020	03/31/2020	04/24/2020	Aluminum, Total	0.59	1.11	mg/L	Average Mont
04/01/2020	04/30/2020	05/28/2020	Aluminum, Total	0.02	1.11	mg/L	Average Mont
05/01/2020	05/31/2020	06/25/2020	Aluminum, Total	0.29	1.11	mg/L	Average Mont
06/01/2020	06/30/2020	07/24/2020	Aluminum, Total	0.67	1.11	mg/L	Average Mont
07/01/2020	07/31/2020	08/25/2020	Aluminum, Total	0.33	1.11	mg/L	Average Mont
08/01/2020	08/31/2020	09/22/2020	Aluminum, Total	0.26	1.11	mg/L	Average Mont
09/01/2020	09/30/2020	10/16/2020	Aluminum, Total	0.37	1.11	mg/L	Average Mont
10/01/2020	10/31/2020	11/17/2020	Aluminum, Total	0.49	1.11	mg/L	Average Mont
11/01/2020	11/30/2020	12/16/2020	Aluminum, Total	0.55	1.11	mg/L	Average Mont
12/01/2020	12/31/2020	01/21/2021	Aluminum, Total	0.66	1.11	mg/L	Average Mont
01/01/2021	01/31/2021	02/17/2021	Aluminum, Total	0.52	1.11	mg/L	Average Mont
02/01/2021	02/28/2021	03/22/2021	Aluminum, Total	0.62	1.11	mg/L	Average Mont
03/01/2021	03/31/2021	04/21/2021	Aluminum, Total	0.39	1.11	mg/L	Average Mont
04/01/2021	04/30/2021	05/24/2021	Aluminum, Total	0.41	1.11	mg/L	Average Mont
05/01/2021	05/31/2021	06/17/2021	Aluminum, Total	0.61	1.11	mg/L	Average Mont
06/01/2021	06/30/2021	07/20/2021	Aluminum, Total	0.46	1.11	mg/L	Average Mont
07/01/2021	07/31/2021	08/19/2021	Aluminum, Total	0.37	1.11	mg/L	Average Mont
08/01/2021	08/31/2021	09/27/2021	Aluminum, Total	0.32	1.11	mg/L	Average Mont
09/01/2021	09/30/2021	10/15/2021	Aluminum, Total	0.28	1.11	mg/L	Average Mont
10/01/2021	10/31/2021	11/16/2021	Aluminum, Total	0.29	1.11	mg/L	Average Mont
11/01/2021	11/30/2021	12/17/2021	Aluminum, Total	0.46	1.11	mg/L	Average Mont
12/01/2021	12/31/2021	01/12/2022	Aluminum, Total	0.46	1.11	mg/L	Average Mont
01/01/2022	01/31/2022	02/16/2022	Aluminum, Total	0.42	1.11	mg/L	Average Mont
02/01/2022	02/28/2022	03/15/2022	Aluminum, Total	0.54	1.11	mg/L	Average Mont
03/01/2022	03/31/2022	04/14/2022	Aluminum, Total	0.39	1.11	mg/L	Average Mont
04/01/2022	04/30/2022	05/16/2022	Aluminum, Total	0.32	1.11	mg/L	Average Mont
05/01/2022	05/31/2022	06/20/2022	Aluminum, Total	0.31	1.11	mg/L	Average Mont
06/01/2022	06/30/2022	07/20/2022	Aluminum, Total	0.38	1.11	mg/L	Average Mont
07/01/2022	07/31/2022	08/12/2022	Aluminum, Total	0.38	1.11	mg/L	Average Mont
08/01/2022	08/31/2022	09/16/2022	Aluminum, Total	0.34	1.11	mg/L	Average Mont
09/01/2022	09/30/2022	10/17/2022	Aluminum, Total	0.27	1.11	mg/L	Average Mont
10/01/2022	10/31/2022	11/15/2022	Aluminum, Total	0.23	1.11	mg/L	Average Mont
11/01/2022	11/30/2022	12/15/2022	Aluminum, Total	0.29	1.11	mg/L	Average Mont
12/01/2022	12/31/2022	01/10/2023	Aluminum, Total	0.4	1.11	mg/L	Average Mont
01/01/2023	01/31/2023	02/16/2023	Aluminum, Total	0.25	1.11	mg/L	Average Mont
02/01/2023	02/28/2023	03/14/2023	Aluminum, Total	0.36	1.11	mg/L	Average Mont
03/01/2023	03/31/2023	04/11/2023	Aluminum, Total	0.37	1.11	mg/L	Average Mont
04/01/2023	04/30/2023	05/11/2023	Aluminum, Total	0.43	1.11	mg/L	Average Mont
05/01/2023	05/31/2023	06/13/2023	Aluminum, Total	0.48	1.11	mg/L	Average Mont
06/01/2023	06/30/2023	07/19/2023	Aluminum, Total	0.37	1.11	mg/L	Average Mont
07/01/2023	07/31/2023	08/15/2023	Aluminum, Total	0.66	1.11	mg/L	Average Mont
08/01/2023	08/31/2023	09/08/2023	Aluminum, Total	0.3	1.11	mg/L	Average Mont
09/01/2023	09/30/2023	10/13/2023	Aluminum, Total	0.24	1.11	mg/L	Average Mont
10/01/2023	10/31/2023	11/17/2023	Aluminum, Total	0.27	1.11	mg/L	Average Mont

2. Confirm the data in the table below for TDS for the months of April 2020 to May 2020

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Parameter Name	DMR Value	Permit Limit	Units	
02/01/2020	02/29/2020	03/31/2020	Total Dissolved	706	1500.00	mg/L	Ave
03/01/2020	03/31/2020	04/24/2020	Total Dissolved	797	1500.00	mg/L	Ave
04/01/2020	04/30/2020	05/28/2020	Total Dissolved	0.736	1500.00	mg/L	Ave
05/01/2020	05/31/2020	06/25/2020	Total Dissolved	0.000	1500.00	mg/L	Ave
06/01/2020	06/30/2020	07/24/2020	Total Dissolved	808.1	1500.00	mg/L	Ave
07/01/2020	07/31/2020	08/26/2020	Total Dissolved	867	1500.00	mg/L	Ave
08/01/2020	08/31/2020	09/22/2020	Total Dissolved	681	1500.00	mg/L	Ave
09/01/2020	09/30/2020	10/16/2020	Total Dissolved	897	1500.00	mg/L	Ave
10/01/2020	10/31/2020	11/17/2020	Total Dissolved	923	1500.00	mg/L	Ave
11/01/2020	11/30/2020	12/16/2020	Total Dissolved	739	1500.00	mg/L	Ave
12/01/2020	12/31/2020	01/21/2021	Total Dissolved	770	1500.00	mg/L	Ave
01/01/2021	01/31/2021	02/17/2021	Total Dissolved	703	1500.00	mg/L	Ave
02/01/2021	02/28/2021	03/22/2021	Total Dissolved	880	1500.00	mg/L	Ave
03/01/2021	03/31/2021	04/21/2021	Total Dissolved	718	1500.00	mg/L	Ave
04/01/2021	04/30/2021	05/24/2021	Total Dissolved	758	1500.00	mg/L	Ave
05/01/2021	05/31/2021	06/17/2021	Total Dissolved	968	1500.00	mg/L	Ave
06/01/2021	06/30/2021	07/20/2021	Total Dissolved	894	1500.00	mg/L	Ave
07/01/2021	07/31/2021	08/19/2021	Total Dissolved	901	1500.00	mg/L	Ave
08/01/2021	08/31/2021	09/27/2021	Total Dissolved	897	1500.00	mg/L	Ave
09/01/2021	09/30/2021	10/15/2021	Total Dissolved	732	1500.00	mg/L	Ave
10/01/2021	10/31/2021	11/16/2021	Total Dissolved	830	1500.00	mg/L	Ave
11/01/2021	11/30/2021	12/17/2021	Total Dissolved	936	1500.00	mg/L	Ave
12/01/2021	12/31/2021	01/12/2022	Total Dissolved	687	1500.00	mg/L	Ave
01/01/2022	01/31/2022	02/16/2022	Total Dissolved	812	1500.00	mg/L	Ave
02/01/2022	02/28/2022	03/15/2022	Total Dissolved	826	1500.00	mg/L	Ave
03/01/2022	03/31/2022	04/14/2022	Total Dissolved	811	1500.00	mg/L	Ave
04/01/2022	04/30/2022	05/16/2022	Total Dissolved	737	1500.00	mg/L	Ave
05/01/2022	05/31/2022	06/20/2022	Total Dissolved	723	1500.00	mg/L	Ave
06/01/2022	06/30/2022	07/20/2022	Total Dissolved	821	1500.00	mg/L	Ave
07/01/2022	07/31/2022	08/12/2022	Total Dissolved	817	1500.00	mg/L	Ave
08/01/2022	08/31/2022	09/16/2022	Total Dissolved	953	1500.00	mg/L	Ave
09/01/2022	09/30/2022	10/17/2022	Total Dissolved	1065	1500.00	mg/L	Ave
10/01/2022	10/31/2022	11/15/2022	Total Dissolved	790	1500.00	mg/L	Ave
11/01/2022	11/30/2022	12/15/2022	Total Dissolved	781	1500.00	mg/L	Ave
12/01/2022	12/31/2022	01/10/2023	Total Dissolved	803	1500.00	mg/L	Ave
01/01/2023	01/31/2023	02/16/2023	Total Dissolved	706	1500.00	mg/L	Ave
02/01/2023	02/28/2023	03/14/2023	Total Dissolved	795	1500.00	mg/L	Ave
03/01/2023	03/31/2023	04/11/2023	Total Dissolved	794	1500.00	mg/L	Ave
04/01/2023	04/30/2023	05/11/2023	Total Dissolved	896	1500.00	mg/L	Ave
05/01/2023	05/31/2023	06/13/2023	Total Dissolved	943	1500.00	mg/L	Ave
06/01/2023	06/30/2023	07/19/2023	Total Dissolved	952	1500.00	mg/L	Ave
07/01/2023	07/31/2023	08/15/2023	Total Dissolved	857	1500.00	mg/L	Ave
08/01/2023	08/31/2023	09/08/2023	Total Dissolved	990	1500.00	mg/L	Ave
09/01/2023	09/30/2023	10/13/2023	Total Dissolved	962	1500.00	mg/L	Ave
10/01/2023	10/31/2023	11/17/2023	Total Dissolved	956	1500.00	mg/L	Ave

3. Confirm the data for dichlorobromomethane for May 2020.
   Confirm that the data in the table is 0.005 mg/l or <0.005 mg/l

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Parameter Name	DMR Value	Units	St
02/01/2020	02/29/2020	03/31/2020	Dichlorobromomethane	0.005	mg/L	Ave
03/01/2020	03/31/2020	04/24/2020	Dichlorobromomethane	0.005	mg/L	Ave
04/01/2020	04/30/2020	05/28/2020	Dichlorobromomethane	0.005	mg/L	Ave
05/01/2020	05/31/2020	06/25/2020	Dichlorobromomethane	717	mg/L	Ave
06/01/2020	06/30/2020	07/24/2020	Dichlorobromomethane	0.005	mg/L	Ave
07/01/2020	07/31/2020	08/25/2020	Dichlorobromomethane	< 0.005	mg/L	Ave
08/01/2020	08/31/2020	09/22/2020	Dichlorobromomethane	0.005	mg/L	Ave
09/01/2020	09/30/2020	10/16/2020	Dichlorobromomethane	< 0.005	mg/L	Ave
10/01/2020	10/31/2020	11/17/2020	Dichlorobromomethane	< 0.005	mg/L	Ave
11/01/2020	11/30/2020	12/16/2020	Dichlorobromomethane	< 0.005	mg/L	Ave
12/01/2020	12/31/2020	01/21/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
01/01/2021	01/31/2021	02/17/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
02/01/2021	02/28/2021	03/22/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
03/01/2021	03/31/2021	04/21/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
04/01/2021	04/30/2021	05/24/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
05/01/2021	05/31/2021	06/17/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
06/01/2021	06/30/2021	07/20/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
07/01/2021	07/31/2021	08/19/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
08/01/2021	08/31/2021	09/27/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
09/01/2021	09/30/2021	10/15/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
10/01/2021	10/31/2021	11/16/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
11/01/2021	11/30/2021	12/17/2021	Dichlorobromomethane	< 0.005	mg/L	Ave
12/01/2021	12/31/2021	01/12/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
01/01/2022	01/31/2022	02/16/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
02/01/2022	02/28/2022	03/15/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
03/01/2022	03/31/2022	04/14/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
04/01/2022	04/30/2022	05/16/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
05/01/2022	05/31/2022	06/20/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
06/01/2022	06/30/2022	07/20/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
07/01/2022	07/31/2022	08/12/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
08/01/2022	08/31/2022	09/16/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
09/01/2022	09/30/2022	10/17/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
10/01/2022	10/31/2022	11/15/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
11/01/2022	11/30/2022	12/15/2022	Dichlorobromomethane	< 0.005	mg/L	Ave
12/01/2022	12/31/2022	01/10/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
01/01/2023	01/31/2023	02/16/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
02/01/2023	02/28/2023	03/14/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
03/01/2023	03/31/2023	04/11/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
04/01/2023	04/30/2023	05/11/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
05/01/2023	05/31/2023	06/13/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
06/01/2023	06/30/2023	07/19/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
07/01/2023	07/31/2023	08/15/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
08/01/2023	08/31/2023	09/08/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
09/01/2023	09/30/2023	10/13/2023	Dichlorobromomethane	< 0.005	mg/L	Ave
10/01/2023	10/31/2023	11/17/2023	Dichlorobromomethane	< 0.005	mg/L	Ave

6

Nick Hong, PE | Environmental Engineer
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THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050

From: Hong, Nicholas
Sent: Tuesday, August 12, 2025 9:27 AM
To: pdarrah@springtwpberks.org; mboggs@entecheng.com
Cc: Bebenek, Maria <mbebenek@pa.gov>; Martin, Daniel <daniemarti@pa.gov>
Subject: Spring TWP / NPDES renewal application / PA0043052

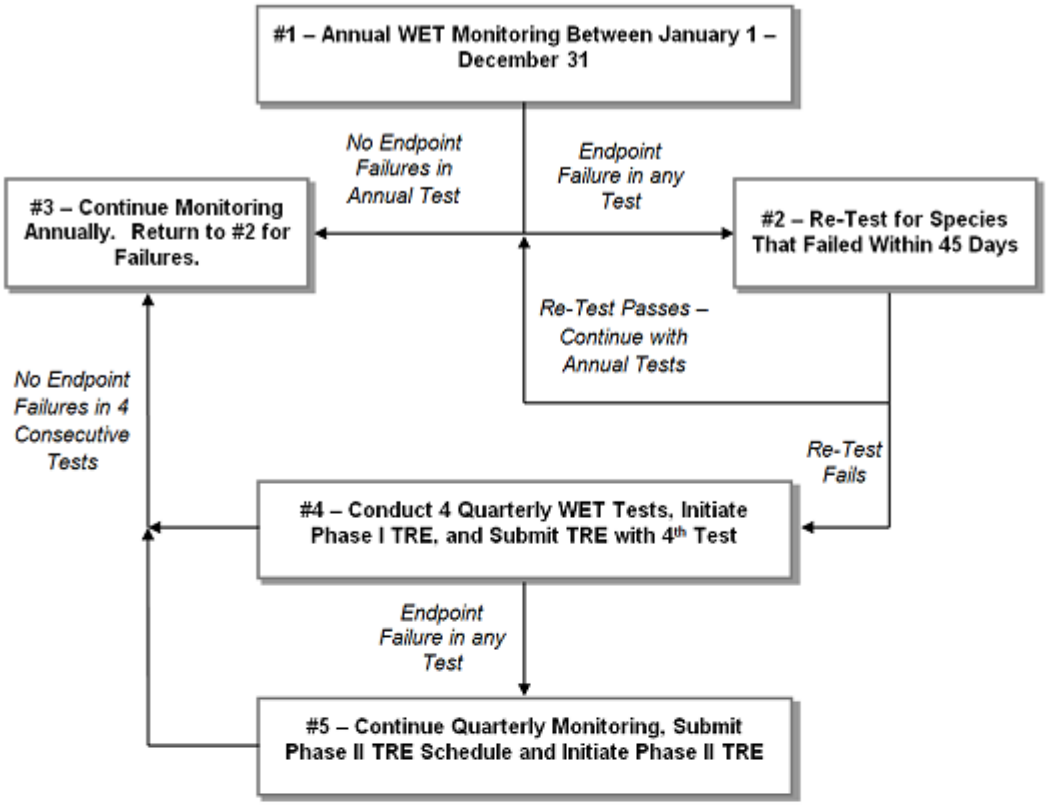
Spring TWP:

DEP has the following preliminary comments on the NDPES renewal application.

The NPDES application reports that the facility received hauled in wastes from Spring Twp headworks.

- Confirm if the Spring Twp headworks is the same facility is the Spring Twp WWTP (PA0043052)
- Confirm if the facility is increasing flow rate.
- Provide the latitude and longitude for the stormwater outfalls. The coordinates in the NPDES permit are exactly the same for both outfalls. Clarify the discrepancy.
- The table summarizes pass/fail results for WET testing from 2020 to 2024. Since there were WET test failures for 08/15/2023 and 10/9/2023, DEP is requesting WET tests for the last two quarters of 2024 and the first two quarters of 2025.
  Refer to the WET test flow chart for the recommended WET testing schedule should there be a WET test failure.

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
10/6/2020	PASS	PASS	PASS	PASS
12/15/2020	PASS	PASS	PASS	PASS
4/29/2021	PASS	PASS	PASS	PASS
8/2/2022	PASS	PASS	PASS	PASS
8/16/2023	PASS	FAIL	PASS	PASS
10/9/2023	PASS	FAIL		
1/4/2024	PASS	PASS		
3/4/2024	PASS	PASS	PASS	PASS



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THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050

Hong, Nicholas

From: Matthew Boggs <MBoggs@entecheng.com>
Sent: Friday, August 22, 2025 10:39 AM
To: Hong, Nicholas
Cc: Bebenek, Maria; Martin, Daniel; Andrew Zimmerman; Dale T. Miller; Marci Poli; Kyle Smith; Ricky Steinman; Dean Murray
Subject: [External] RE: Spring TWP / NPDES renewal application / PA0043052
Attachments: Outfall 001 and Stormwater Outfall 002.jpg; Spring Township STP TRE Report.pdf; Spring Township STP TRE Report.pdf; WETT 9-9-2024 566-01-01PpCdchr American Aquatic.pdf; WETT 11-4-2024 566-01-02PpCdchr American Aquatic.pdf; WETT Results 1-6-2025 Passing 566-01-03PpCDCh.pdf; WETT Results 5-12-2025 Passing 566-01-04PpCdchr.pdf

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Nick,

I do have responses to your items below. I offer the following:

- Confirm if the Spring Twp headworks is the same facility is the Spring Twp WWTP (PA0043052)
  This is confirmed.
- Confirm if the facility is increasing flow rate.
  While the Chapter 94 Report does indicate additional flow coming to the existing facility, the permitted hydraulic design capacity does not need to be increased.
- Provide the latitude and longitude for the stormwater outfalls. The coordinates in the NPDES permit are exactly the same for both outfalls. Clarify the discrepancy.
  After some investigation it was discovered that the long/lat for our outfall for the Plant 001 (Part A) and stormwater outfalls 002 and 003 are all shown as the same coordinates. This is incorrect. Spring only has one stormwater outfall so the permit should only have 002 and the coordinates are: Stormwater Outfall 002; 76° 0'25.62"W 40°20'52.13"N. Outfall 003 should be removed from the permit.
  The Part A outfall should be corrected; it is approx. 30 feet away from the stormwater outfall. Those coordinates for Outfall 001 should be: Outfall 001; 76° 0'24.88"W 40°20'52.07"N.
  Attached is a Google Earth image showing where the two are located.
- The table summarizes pass/fail results for WET testing from 2020 to 2024. Since there were WET test failures for 08/15/2023 and 10/9/2023, DEP is requesting WET tests for the last two quarters of 2024 and the first two quarters of 2025.
  Entech has prepared at TRE Report and it is attached. In addition, attached are copies of the last 4 passing WET Test reports (9/9/2024, 11/4/2024, 1/6/2025, & 5/12/2025).

Please let me know if you have any questions or comments. Have a nice weekend.

-Matt

Matthew L. Boggs, P.E.
Entech Engineering, Inc.
c. (484) 390-9056

1

From: Hong, Nicholas <nhong@pa.gov>
Sent: Tuesday, August 12, 2025 9:27 AM
To: pdarrah@springtwpberks.org; Matthew Boggs <MBoggs@entecheng.com>
Cc: Bebenek, Maria <mbebenek@pa.gov>; Martin, Daniel <daniemarti@pa.gov>
Subject: Spring TWP / NPDES renewal application / PA0043052

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- Confirm if the facility is increasing flow rate.
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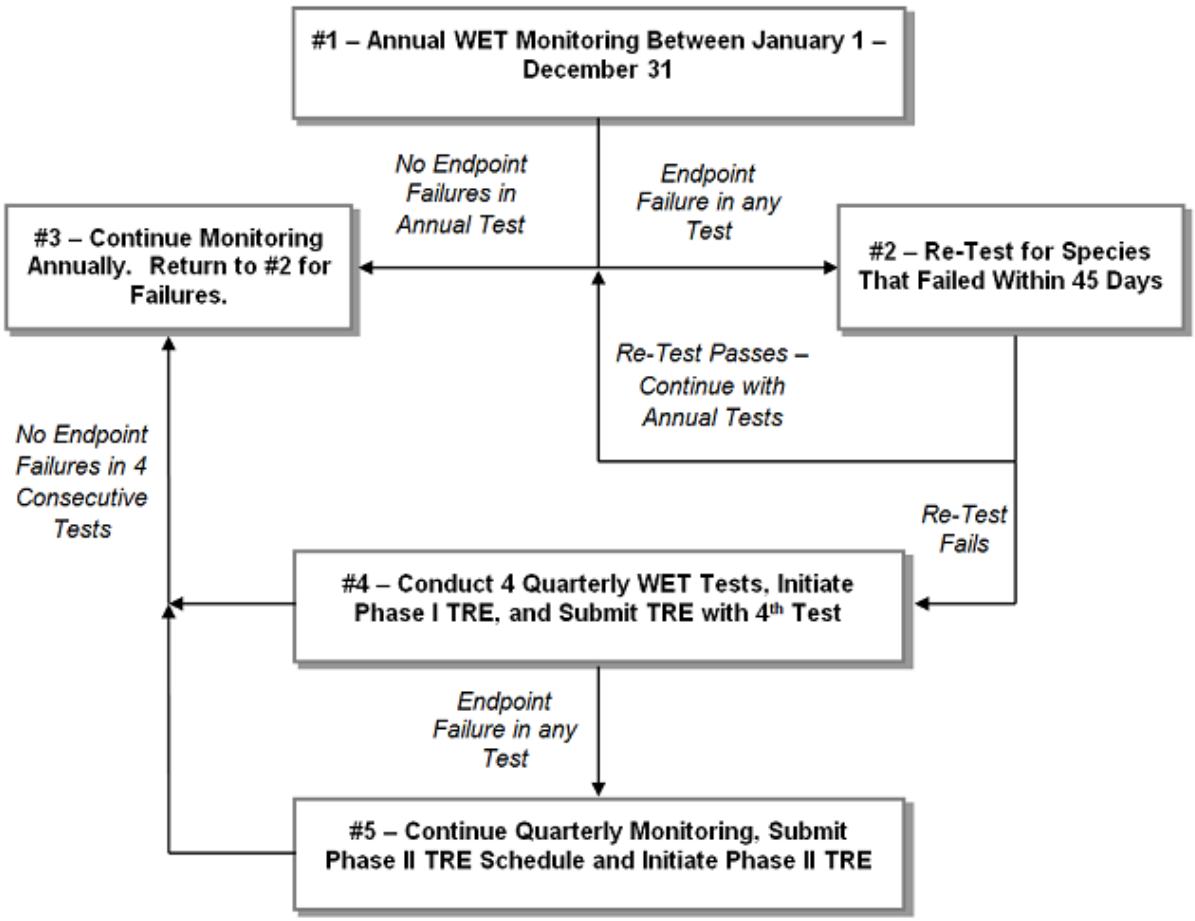
- The table summarizes pass/fail results for WET testing from 2020 to 2024. Since there were WET test failures for 08/15/2023 and 10/9/2023, DEP is requesting WET tests for the last two quarters of 2024 and the first two quarters of 2025.
  Refer to the WET test flow chart for the recommended WET testing schedule should there be a WET test failure.

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
1[illegible]/2020	PASS	PASS	PASS	PASS
12/15/2020	PASS	PASS	PASS	PASS
4/29/2021	PASS	PASS	PASS	PASS
8/2/2022	PASS	PASS	PASS	PASS
8/15/2023	PASS	FAIL	PASS	PASS
10/9/2023	PASS	FAIL		
1[illegible]/2024	PASS	PASS		
3/4/2024	PASS	PASS	PASS	PASS

2



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THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050

Attachment E
DRBC

DOCKET NO. D-1988-077 CP-6

DELAWARE RIVER BASIN COMMISSION

Township of Spring
Wastewater Treatment Plant
Spring 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 October 1, 2023 (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. PA0043052 for this discharge. The PADEP also issued Water Quality Management Permit No. 0609404 A-2 for upgrades to the facility on January 11, 2024.

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 approve a modification to the docket holder's existing 2.0 million gallons per day (mgd) WWTP and its discharge. The proposed modifications consist of replacing the belt filter press with a screw press, installing a polymer system, and relocating phosphorus polishing pumps.

2. Location. The docket holder's WWTP is located at Reedy Road in Spring Township, Berks County, Pennsylvania. The WWTP will continue to discharge treated effluent to Cacoosing Creek at River Mile 92.47 – 76.8 – 4.0 – 2.0 (Delaware River – Schuylkill River – Tulpehocken Creek – Cacoosing Creek).

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

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	40° 20' 52"	76° 0' 25"

3. Area Served. The docket holder's WWTP will continue to serve portions of the following Berks County municipalities: Spring Township, South Heidelberg Township, Lower Heidelberg Township, and Wyomissing Borough. 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.

4. Design Criteria. The docket holder's 2.0 mgd WWTP operates as a 3-Plant system with a fixed film activated sludge process employed at Plants 1 and 2 and an oxidative ditch treatment process at Plant 3. All three plants utilize grit and screenings removal and ultraviolet (UV) disinfection. The WWTP is designed for an annual average flow of 2.0 mgd and a hydraulic design capacity of 2.28 mgd.

5. Facilities. The existing WWTP facilities consist of a septage receiving station with a flow splitter to separate the influent flows between Plants 1 and 2 from flows to Plant 3. Plants 1 and 2 operate with a fine screen and grit removal station, 3 submerged aeration fixed-film reactors in a 7-stage process followed by two Parshall flumes and a UV disinfection unit. Plant 3 consists of a coarse screen and grit chamber, a screw pump to convey flow to an oxidation ditch with 3 final clarifier units, and a UV disinfection unit with a post-aeration tank. The WWTP sludge handling facilities consist of 2 anaerobic digesters, one Dystor gas and sludge storage tank, and a belt filter press. A septage receiving station that flows to Plant 3 is not used at this time.

The proposed WWTP modifications consist of replacing the sludge handling facility's belt filter press with a screw press and installing a polymer system to condition the sludge prior to dewatering. In addition, pumps that are used for phosphorus polishing will be relocated to a different building on the property to improve the treatment plant hydraulics.

Several of the WWTP facilities located within Plants 1 and 2 are located in the 100-year floodplain. Plant 3 is not located in the 100-year floodplain. Any future construction located at Plants 1 or 2 facilities located in the floodplain will need to be floodproofed up to the flood protection elevation (one foot above the 100-year flood elevation).

Wasted sludge will continue to be hauled off-site for disposal in accordance with the NPDES Permit No. PA0043052.

6. Water Withdrawals. The potable water supply in the project service area is provided by groundwater withdrawals owned and operated by Pennsylvania American Water Company, described in detail in docket No. D-1998-043 CP-3, which was approved on September 16, 2015.

D-1988-077 CP-6 (Township of Spring - WWTP) **3**

7. NPDES Permit / DRBC Effluent Requirements. NPDES Permit No. PA0043052 issued by the PADEP includes final effluent limitations for the project discharge to surface waters classified by the PADEP as supporting migratory fishes (MF) and 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 2.0 mgd.

8. Relationship to the Comprehensive Plan. The existing WWTP was included in the Comprehensive Plan by Docket No. D-1965-140 CP on December 29, 1965. The WWTP approval was renewed and/or modified by the Docket Nos. listed below. Issuance of this docket will continue the WWTP and its discharge in the Comprehensive Plan.

DOCKET NO.	APPROVAL DATE	DOCKET ACTION
D-1988-077 CP	February 22, 1989	WWTP Modification & Expansion
D-1988-077 CP-2	May 5, 2010	WWTP Modification & Expansion
D-1988-077 CP-3	June 10, 2015	WWTP Approval Renewal
D-1988-077 CP-4	February 12, 2020	WWTP Approval Renewal
D-1988-077 CP-5	August 11, 2021	WWTP Modification

B. FINDINGS

The docket holder applied to request approval for a modification to the docket holder's existing 2.0 million gallons per day (mgd) WWTP and its discharge.

1. Total Dissolved Solids

Section 3.10.4.D.2 of the Commission's Water Quality Regulations (WQR) states the following:

> *"Total dissolved solids shall not exceed 1000 mg/l, or a concentration established by the Commission which is compatible with designated water uses and stream quality objectives and recognizes the need for reserve capacity to serve future dischargers."*

On May 5, 2010, the DRBC approved Docket No. D-1988-077 CP-2, which contained a TDS effluent limit of 1,000 mg/l with required quarterly TDS monitoring. Due to multiple exceedances of the TDS effluent limit, the docket holder performed additional influent and effluent testing, where influent samplings indicated influent TDS concentrations to be above 1,000 mg/l. On March 19, 2015, the docket holder and DRBC staff agreed on additional influent and effluent TDS testing to investigate the sources and possible mitigation of TDS. Docket No. D-2007-034 CP-3 (approved on June 10, 2015) contained a temporary TDS effluent variance of 1,500 mg/l while performing testing and track down study of the potential TDS sources.

Since the docket holder performed the track down study and maintained consistent monitoring of TDS influent and effluent, TDS concentrations have remained below 1,000 mg/l. However, values still remain elevated and close to 1,000 mg/l. Monitoring over the past year has produced an average of 886 mg/l TDS. Therefore, this docket continues the requirement for the docket holder to conduct monthly monitoring of the influent and effluent TDS concentrations (See Section C. DECISION Condition C.1.).

The docket holder will also continue to monitor the potential sources of TDS. The docket maintains Condition C.2. to request a reduction in the effluent monitoring from monthly to quarterly and elimination of the TDS influent testing upon the completion and additional 12 months of monthly monitoring without an effluent exceedance of 1,000 mg/l (see Section C. DECISION Condition C.2.).

2. Other

At the docket holder's WWTP discharge, the Cacoosing Creek has an estimated seven-day low flow with a recurrence interval of ten years (Q_{7-10}) of 2.65 mgd (4.1 cfs). The ratio of this low flow to the wastewater discharge rate from the 2.0 mgd WWTP is 1.3 to 1.

The nearest surface water intake of record for public water supply is located on the Schuylkill River approximately 25 River Miles downstream of the docket holder's WWTP and is operated by Pottstown Borough Water 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-1988-077 CP-6 below, the project described in Docket No. D-1988-077 CP-5 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1988-077 CP-6; Docket No. D-1988-077 CP-5 is terminated and replaced by Docket No. D-1988-077 CP-6; 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:

D-1988-077 CP-6 (Township of Spring - WWTP) **5**

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 Cacoosing 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
Dissolved Oxygen	5.0 mg/l (minimum at all times)	As required by NPDES Permit
$CBOD_5$ (at 20° C)	25 mg/l (minimum 85% removal)	As required by NPDES Permit
Ammonia Nitrogen (5-1 to 10-31) (11-1 to 4-30)	3.5 mg/l 10.5 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

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 Cacoosing Creek)		
PARAMETER	**LIMIT**	**MONITORING**
Total Dissolved Solids Effluent*	Monitor & Report*	Monthly
Total Dissolved Solids Influent*	Monitor & Report*	Monthly
$CBOD_5$ (at 20° C) Influent	Monitor & Report Percent Removal	Monthly

* See DECISION Condition C.2 and C.5.

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Other Conditions

2. The docket holder is required to perform monthly influent and effluent TDS testing in accordance with EFFLUENT TABLE C-2 above. After completing 12 consecutive months of monthly monitoring without an effluent exceedance of 1,000 mg/l, the docket holder may request in writing to the Executive Director a reduction in the effluent monitoring frequency from monthly to quarterly and may request elimination of the TDS influent testing.

3. Nothing in this docket constitutes a defense to any penalty action for past conduct of the docket holder or ongoing activity not authorized by this approval. In particular, renewal of this docket does not resolve violations – whether in the past or continuing – of provisions of the Delaware River Basin *Compact ("Compact")* or any rule, regulation, order or approval duly issued by the Commission or the Executive Director pursuant to the Compact. The Commission reserves its right to take appropriate enforcement action against the docket holder, including but not limited to recovery of financial penalties consistent with Section 14.17 of the Compact, for any and all such prior or continuing violations.

4. 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*.

5. 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.

6. 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.

7. 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.

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8. 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.

9. 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.

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

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

12. 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.

13. 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.

14. 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.

15. 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).

16. 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.

17. 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).

18. 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).

19. 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).

20. 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.

21. Prior to allowing connections from any new service areas or any new developments not in compliance with the Ordinances described in Section B.1. above, the docket holder shall submit and have approved by the Executive Director of the DRBC a Non-Point Source Pollution Control Plan (NPSPCP) in accordance with Section 3.10.3.A.2.e.

22. 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.

BY THE COMMISSION

APPROVAL DATE: **September 5, 2024**

EXPIRATION DATE: **January 31, 2030**

Attachment F
TRE Report

201 Penn Street | Suite 300 | P.O. Box 32 | Reading, PA 19603

August 13, 2025

Entech No. 4644.035

Mr. Nick Hong, PE
PA Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, PA 17110

Re: Spring Township STP
Permit PA0043052
Toxicity Reduction Evaluation (TRE) Report

Dear Mr. Hong:

In August 2023 the Spring Township STP failed the Whole Effluent Toxicity (WET) test for Ceriodaphnia and failed the subsequent retest in October 2023. In both instances, the WET test passed for survival but failed for reproduction. Subsequently, there were passing endpoint tests performed in December 2023 and February 2024.

An internal investigation was conducted to determine the cause of the WET test failures. The investigation included a review of all chemicals used in plant operation. During the investigation, plant staff determined that a new chemical called Strike had been introduced for pest control starting in the summer of 2023. Plant personnel contacted the outside ecotoxicology lab, EA Engineering, Science, and Technology, Inc., PBC to determine if this chemical could cause the WET test failures. Based on the outside lab's understanding of the properties of this chemical, they determined it was likely the cause of the WET test failures. Strike is a 30-day slow-release pellet. The last time the plant was dosed with Strike was 5/21/2024, which was one day after the 5/20/2024 test was taken that resulted in a failed water flea test. Spring Township immediately began to coordinate with the laboratory for a re-test; however, there were issues with the lab for the samples taken in May 2024 and in July, a new lab was utilized and the first sample taken was in September 2024. The results of the September 2024 WET test indicated that after stopping the use of Strike the facility passed for both reproduction and survival. The facility initiated quarterly sampling in September 2024, and by May 2025 the four quarterly WET tests since then have passed.

For reference, attached is the Safety Data Sheet (SDS) for Strike. This TRE is to be considered a companion document to the past four quarters of WET test results provided to DEP.

Sincerely,

Matthew Boggs, PE
Project Manager