Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0028649**
Facility Type	**Municipal**	APS ID	**684586**
Major / Minor	**Major**	Authorization ID	**1500002**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Borough of Sinking Spring**	Facility Name	**Sinking Spring WWTP**
Applicant Address	3940 Penn Avenue Sinking Spring, PA 19608-1168	Facility Address	2305 Reedy Road Sinking Spring, PA 19608-9668
Applicant Contact	Michael Hart* , Borough Manager (610) 678-4903 mhart@sinkimgsprimgboro.org	Facility Contact	Michael Hart mhart@sinkimgsprimgboro.org & Kim Cherry, Superintendent kcherry@sinkingspringboro.org
Applicant Phone		Facility Phone	610-678-4903 2024
Client ID	189293	Site ID	451898
Ch 94 Load Status	Not Overloaded (pre-populated and per appl)	Municipality	Spring Township
Connection Status	No Limitations (pre-populated)	County	Berks
Date Application Received	April 2, 2024	EPA Waived?	No
Date Application Accepted	April 16, 2024	If No, Reason	Major Facility
Purpose of Application	Renewal of NPDES permit for municipal sewage treatment plant		

Summary of Review

Starts on next page.

Approve	Deny	Signatures	Date
x		*Bonnie Boylan* Bonnie Boylan / Environmental Engineering Specialist	March 3, 2025
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	March 7, 2025
x		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Environmental Program Manager	March 7, 2025

The facility's existing NPDES permit was issued September 16, 2019 with an expiration date of September 30, 2024. The permit has been administratively extended past the expiration date. The renewal application was received using DEP's electronic Public Upload system, Reference ID #224569.

The facility serves Borough of Sinking Spring, Spring Township, Lower Heidelberg Township, and South Heidelberg Township.

Design Flow

The existing permit's limits were based on a design flow of 1.25 MGD. The draft renewal permit includes the same design flow of 1.25 MGD.

DMRs from the last 3 years (1/1/2022-12/31/2024) indicate an average flow of 0.6 MGD. The 90th percentile of their reported monthly average flows was 0.9 MGD. (See attached.)

The facility's 2023 Chapter 94 Municipal Wasteload Report did not indicate existing or projected hydraulic overloads for next 5 years.

Combined Sewers

Not Applicable.

Hauled-in Wastes

According to the renewal application, they have received hauled-in municipal wastes in the past three years but they do not anticipate accepting hauled-in wastes over the next 5 years.

Industrial Users (IUs)

There were three IUs listed in the application (see attached), one of which is not a categorical industry subject to federal Effluent Limitation Guidelines (ELGs):

Alcon Mfr'ing, not a CIU; 17,641 gpd of "sanitary" wastewater sent to the STP but the application stated:

> Manufacturer of surgical devices and instruments. Waste discharge to sanitary sewer is of domestic quality combined flow of sanitary and process water.

Aluminum Alloys, 40 CFR Part 467 Forging Subcategory, an SIU; sends 828 gpd of "sanitary" wastewater per their application:

> Wastewater dischared to sanitary swer is of domestic strenth and quality.

Grafika Commercial Printing, 40 CFR Part 447 Subpart A, Oil Base Solvent Wash Ink, an SIU; 3200 gpd of "sanitary" wastewater but the application stated:

> Flexo, offest and silksreen printing. Waste discharge to sanitary sewer is of domestic quality combined flow of sanitary and process water.

3200 gpd is only 0.26% of the STP's total discharge.

The ELG 40 CFR Part 447 Subpart A does not include a Pretreatment Standard for existing sources but includes a Pretreatment Standard for New Sources (post-July 28, 1975) as follows: "There shall be no discharge of process water pollutants to a publicly owned treatment works."

EPA Pretreatment Program

Not required in existing permit or in draft renewal permit based on small volume contributed by industrial users.

Variances

There were no variances requested.

Sludge use and disposal

The facility is approved for coverage under the general permit (PAG-08) for Beneficial Use of Biosolids by Land Application. Permit No. PAG-08-3567 issued by DEP February 1, 2017.

Outstanding Violations

As of the writing of this Fact Sheet, there were no outstanding violations according to DEP's Compliance History Summary Report by Client (Power BI).

Delaware River Basin Commission (DRBC)

The discharge is within the Delaware River watershed. A copy of the draft permit and Fact Sheet will therefore be sent to the DRBC for their review in accordance with State regulations and an interagency agreement. Any comments from the DRBC will be considered.

The most recent DRBC docket #D-1994-031 CP-5 was approved September 5, 2024 and expires September 30, 2029.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.25
Latitude	40º 20' 28" (per application)	Longitude	-76º 1' 21" (per application)
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Cacoosing Creek	Stream Code	01850
NHD Com ID	25995768	RMI	3.37
Drainage Area	8.2 sq.mi.	Yield (cfs/mi^2)	0.2
Q_{7-10} Flow (cfs)	1.6 cfs (estimated)	Q_{7-10} Basis	USGS Pa Stream Stats online tool
Elevation (ft)	285	Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	CWF, MF
Existing Use	none	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-

Assessment Status	Impaired for Aquatic life due to habitat modification/alterations (assess. ID 22926) and Impaired for Recreational Use due to pathogens (assess. ID 18814) Slightly downstream, starting at RMI 3.2: also impaired for siltation and nutrients (assessment ID 22925)
Cause(s) of Impairment	Nutrients, Siltation, Pathogens
Source(s) of Impairment	Agriculture probable
TMDL Status	None — Name: (this stream is NOT part of the TMDL for Little Cacoosing Creek)

Secondary Waters:

Cacoosing Creek flows into Tuplehocken Creek (WWF) at RMI 3.9 (Impaired for Aquatic life due to nutrients, possibly from agriculture) which flows into Schuylkill River (WWF) at RMI 77 (Impaired for fish consumption due to PCBs, with a TMDL)

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

Nearest Downstream Public Water Supply Intake		Pottstown Borough Water Authority, Pumping capacity 12 MGD	
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	Approx. 57	Distance from Outfall (mi)	27

NOTE:
Cacoosing Creek is considered Trout Natural Reproduction

Correlation with stream gages had been used in the past to estimate stream low-flow, Q7-10, but low flow data collection ended many years ago. For this reason, correlation with stream gages was not used to estimate the design stream low-flow Q7-10 (7 consecutive days over a 10-year period).

Treatment Facility Summary

Treatment Facility Name: Sinking Spring STP

WQM Permit No.		Issuance Date
0608403 A-2	rehab of some reed beds	1/30/2025
0608403 A-1	1 influent flow meter	10/3/2022
0608403		12/23/2008

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Oxidation Ditch	Gaseous Chlorine With Dechlorination	1.25

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.65	2502		Aerobic Digestion	Other WWTP

Per application:

-Screening + grit removal; 2 parallel oxidation ditches; 3 final clarifiers; gaseous chlorination; dechlorination;

-Continuous effluent discharge;

-Phosphorus reduction (biological uptake and precipitation with Aluminum chloride);

-The STP is not currently designed to reduce Total Nitrogen;

-Operating Procedures in place for managing peak flows;

-No hauled-in sludge.

Last DEP Inspection Report:

Treatment Units

TP-1	Are all treatment units operable?

Treatment Units	Total	On-Line	Inoperable	Comments
Influent Screen	1	1		
Other	1	1		Influent wet well, 3 raw pumps
Grit Removal	1	1		
Oxidation Ditch	2	2		in series, ditch 1 cycles low/high speed
Secondary Clarifier	3	2		Some ashing and suspending solids.
Chlorine Contact Tank	2	2		1 unit being cleaned
Dechlorination System	1	1		
Aerated Digester	1	1		Aerated (previously anaerobic)
Aerated Digester	3	3		
Reed Beds	20	20		See comments

EXISTING PERMIT LIMITS, OUTFALL 001:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.13	XXX	0.43	1/day	Grab
CBOD5	260	417 Wkly Avg	XXX	25.0	40.0	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	312	469 Wkly Avg	XXX	30.0	45.0	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	1000.0 Daily Max	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Ammonia Nov 1 - Apr 30	78	XXX	XXX	7.5	XXX	15	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	26	XXX	XXX	2.5	XXX	5	2/week	24-Hr Composite
Total Phosphorus	16.7	XXX	XXX	1.6	XXX	3.2	2/week	24-Hr Composite
Dibromochloromethane	Report	Report	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
Tetrachloroethylene	Report	Report	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite

Compliance History

DMR Data for Outfall 001 (from December 1, 2023 to November 30, 2024)

Parameter	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23
Flow (MGD) Average Monthly	0.457	0.436	0.448	0.522	0.479	0.481	0.657	1.167	1.063	0.881	1.298	0.852
Flow (MGD) Daily Maximum	0.549	0.487	0.485	0.773	0.798	0.590	0.831	2.090	1.602	1.181	2.180	2.173
pH (S.U.) Daily Minimum	6.94	6.86	6.92	7.03	6.98	7.14	7.13	7.3	7.31	7.3	7.28	7.05
pH (S.U.) Daily Maximum	7.30	7.36	7.15	7.21	7.54	7.35	7.52	7.71	7.68	7.6	7.63	7.58
DO (mg/L) Daily Minimum	5.35	5.29	5.29	5.02	5.16	5.65	5.66	6.37	7.28	7.4	8.06	6.32
TRC (mg/L) Average Monthly	< 0.08	< 0.03	< 0.04	< 0.03	< 0.02	< 0.03	< 0.02	< 0.02	< 0.02	0.08	< 0.01	< 0.02
TRC (mg/L) Instantaneous Maximum	1.60	0.08	0.38	0.05	0.04	0.24	0.05	0.04	0.05	1.88	0.03	0.04
CBOD5 (lbs/day) Average Monthly	17	< 10	< 9	14	< 15	11	< 14	< 20	< 18	< 17	< 28	31
CBOD5 (lbs/day) Weekly Average	20	13	11	17	20	13	16	< 28	< 21	25	41	52
CBOD5 (mg/L) Average Monthly	5.0	< 3.0	< 3.0	3.0	< 4.0	3.0	< 3.0	< 2.0	< 2.0	< 2.0	< 3.0	4.0
CBOD5 (mg/L) Weekly Average	6.0	4.0	3.0	3.0	5.0	4.0	3.0	< 2.0	< 2.0	3.0	4.0	6.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	999	960	894	948	890	196	885	923	1007	946	1115	1089
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	1224	1090	1055	1182	1361	249	1188	1405	1503	1542	1927	1839
BOD5 (mg/L) Raw Sewage Influent Average Monthly	272	269	242	218	225	781	166	100	115	133	103	161
TSS (lbs/day) Average Monthly	< 16	< 17	< 19	< 22	< 21	< 18	< 22	< 40	< 40	< 32	< 73	< 38

TSS (lbs/day) Raw Sewage Influent Average Monthly	722	690	767	810	664	175	775	821	940	589	823	921
TSS (lbs/day) Raw Sewage Influent Daily Maximum	922	893	953	968	982	232	1113	1395	1326	922	1745	2306
TSS (lbs/day) Weekly Average	17	20	23	33	25	< 22	< 24	< 55	< 44	< 34	< 107	62
TSS (mg/L) Average Monthly	< 4.0	< 5.0	< 5.0	< 5.0	< 5.0	< 4.0	< 4.0	< 4.0	< 5.0	< 5.0	< 6.0	< 5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	197	193	207	186	168	694	145	89	109	84	75	125
TSS (mg/L) Weekly Average	5.0	6.0	7.0	6.0	7.0	< 5.0	4.0	< 5.0	< 5.0	< 5.0	< 9.0	6.0
Total Dissolved Solids (mg/L) Daily Maximum			922.0			798.0			732.0			750.0
Fecal Coliform (No./100 ml) Geometric Mean	118	122	130	40	52	31	22	< 17	45	25	15	17
Fecal Coliform (No./100 ml) Instantaneous Maximum	3600	400	423	408	184	65	112	176	1900	152	77	48
Ammonia (lbs/day) Average Monthly	< 0.4	< 0.4	< 0.4	< 2	< 0.4	< 0.4	< 0.5	< 1.0	< 0.9	< 0.7	< 1	< 0.7
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (lbs/day) Average Monthly	3.9	5.0	4.7	4.1	6.6	5.4	8.1	13.1	10.0	7.2	10.7	8.6
Total Phosphorus (mg/L) Average Monthly	1.07	1.39	1.28	< 0.4	1.67	1.31	1.51	1.23	1.14	1.04	0.95	1.23
Dibromochloro-methane (lbs/day) Average Monthly	2	< 2	< 3.0	< 2	< 2	< 2	4	< 6	< 4	< 4	< 7	< 4
Dibromochloro-methane (lbs/day) Daily Maximum	3	< 2	4	< 3	2	2	4	< 9	< 4	5	< 9	< 5

Dibromochloro-methane (mg/L) Average Monthly	0.6	< 0.5	< 0.8	< 0.5	< 0.6	< 0.6	0.7	< 0.5	< 0.5	< 0.6	< 0.5	< 0.5
Dibromochloro-methane (mg/L) Daily Maximum	0.7	< 0.5	1.1	< 0.5	0.6	0.6	0.7	0.5	0.5	0.6	< 0.5	< 0.5
Tetrachloro-ethylene (lbs/day) Average Monthly	< 2	< 2	< 2	< 2	< 2	< 2	< 3	< 6	< 4	< 4	< 7	< 4
Tetrachloro-ethylene (lbs/day) Daily Maximum	< 2	< 2	< 2	< 3	< 2	< 2	< 3	< 9	< 4	< 4	< 9	< 5
Tetrachloro-ethylene (mg/L) Average Monthly	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloro-ethylene (mg/L) Daily Maximum	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Compliance History

Effluent Violations for Outfall 001, from: January 1, 2023 through January 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	11/30/24	IMAX	1.60	mg/L	.43	mg/L
Total Phosphorus	07/31/24	Avg Mo	1.67	mg/L	1.6	mg/L
TRC	02/29/24	IMAX	1.88	mg/L	.43	mg/L
Fecal Coliform	8/31/2023	IMAX	2500	No/100 mL	1000	No/100 mL
Total Phosphorus	3/31/2023	Avg Mo	1.62	mg/L	1.6	mg/L

Summary of Most Recent DEP Clean Water Inspections (according to DEP's WMS database**):**

August 5, 2021 – No Violations.

One clarifier was not online. RAS pump being serviced. Effluent samples are collected post Chlorine Contact Tank. Ultrasonic flow meter. Autodialer and SCADA alarm. Have emergency generator. Facility has had issues with water flea (Daphnia) blooms in clarifier but none observed during inspection. No solids observed in stream at outfall. No hauled-in wastes since April 2021. Liquid sludge is hauled to Pottstown WWTP, screenings and grit disposed to landfill, biosolids spread on farms. Reed beds 2-12 are planned to be rehabilitated. Local limits have been implemented for industrial users. 3 collection systems owned by others contribute to facility's system. Only 1 Pump station in facility's collection system.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.25
Latitude 40º 20' 28.20" (existing permit) **Longitude** -76º 1' 19.47" (existing permit)
Wastewater Description: Sewage Effluent

Permit limits can be Technology Based Effluent Limitations (TBELs) or Water Quality Based Effluent Limitations (WQBELs). Both are discussed in this Fact Sheet, in separate sections. Existing permit limits can also be carried forward in accordance with anti-backsliding provisions.

Technology-Based Effluent Limitations (TBELs)

The following technology-based limitations apply to sewage dischargers, where applicable:

	Limit (mg/l)	Statistical Base Code	Federal Regulation	State Regulation	DRBC*
$CBOD_5$	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 (TSS)	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 (TRC)	0.5	Average Monthly	-	92a.48(b)(2)	
Total Phosphorus**	2.0	Avg. Monthly		96.5(c)	
Total Dissolved Solids (TDS)	2000 mg/l if increase TDS load by more than 5000 lbs/day from Aug 2010 baseline load, unless granted a waiver	Average Monthly		95.1	
Total Dissolved Solids (TDS)	1000 ***	"not to exceed"	-	-	based on 18 CFR Part 410
Ammonia as N	20	Average Monthly	-	-	18 CFR Part 410

*DEP has an interagency agreement with the Delaware River Basin Commission (DRBC) and incorporates their requirements (18 CFR Part 410 Water Quality Regulations and approved dockets) into our permits where appropriate.

**applicable to discharges to a receiving water that is known to be impaired for nutrients (this stream has been assessed as impaired for nutrients).

***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 (i.e. a limit based on a TDS Determination submitted to DRBC proving that the discharge will not cause the TDS in the receiving water to exceed the lesser of 500 mg/l or 133% of background. The DRBC docket for this facility does not include such a TDS variance).

The **$CBOD_5$, TSS, pH,** and **Fecal Coliform** TBELs shown in the above table are included in the draft renewal permit. They are the same limits as in the existing permit.

TRC: The WQBELs (discussed in the WQBEL section of this Fact Sheet) are more stringent than the TBELs and have been imposed in the permit.

Total Phosphorus: The existing permit limits of 1.6 mg/l as a monthly average and 3.2 mg/l as an instantaneous maximum (IMAX) have been carried forward into the draft renewal permit, in accordance with 40 CFR §122.44(l)(1).

TDS: The 1000 mg/l limit from the DRBC docket has been imposed in the permit. The same limit is in the existing permit. The sampling frequency of once per quarter in the existing permit has not been changed in the draft renewal permit.

Ammonia:
The existing permit limits for **Ammonia** are more stringent than the TBELs in the above table and have been carried forward into the draft renewal permit.

Best Professional Judgment (BPJ) Limitations

According to the December 2018 Fact Sheet (associated with the existing permit), the **Total Phosphorus** limits are BPJ limits. The TP load was held at current levels when the plant was expanded from 1.0 MGD to 1.25 MGD.

Water Quality-Based Effluent Limitations (WQBELs)

Total Maximum Daily Load (TMDL) for Impaired Waters:

There is not a TMDL for Cacoosing Creek, only for Little Cacoosing Creek (to the north). The facility is not located within the Little Cacoosing Creek watershed; therefore, no local watershed TMDL has been taken into consideration at this time.

WQBELs other than TMDL:

DEP uses a model known as **WQM 7.0** to determine appropriate limits for CBOD5, Ammonia (NH3-N), and Dissolved Oxygen (DO). DEP's 'Implementation Guidance for Section 93.7 Ammonia Criteria', document #386-2000-022, provides the methods and calculations contained in the WQM 7.0 model for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. For more explanation of the WQM 7.0 model, see 'Technical Reference Guide WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen', document #386-2000-016. There is one nearby sewage treatment plant on Cacoosing Creek so it was included in the modeling: Spring Township Sewage Treatment Plant (STP).

The source of the River Mile Indices (RMI's) and elevations that were used in the WM 7.0 model (and TMS model discussed below) was DEP's eMapPA while the source of the Drainage Areas and stream design low-flows was the USGS PA Stream Stats online tool (see attached). Low Flow Yield (LFY) is calculated as stream low-flow Q7-10 divided by Drainage Area.

Because this is an existing discharger who is not expanding, the model was not re-run using a DO goal of 8 mg/l despite its discharge to a 'CWF with naturally reproducing salmonid in early life stages' designated stream, consistent with DEP's Standard Operating Procedure (SOP) Establishing Effluent Limitations in Individual Sewage NPDES Permits.

DEP's uses a **TRC model** (Excel spreadsheet) to determine WQBELs for TRC: the model utilizes the equations and calculations provided in DEP's 'Implementation Guidance Total Residual Chlorine (TRC) Regulation' for TRC, document #386-2000-011.

DEP uses a model called the **Toxics Management Spreadsheet** (TMS) for toxic pollutants. It is a macro-enabled Excel version of DEP's former PENTOX model. It evaluates the reasonable potential for discharges to cause in-stream exceedances of water quality criteria and recommends Water Quality-Based Effluent Limitations (WQBELs) be imposed as permit limits and may recommend monitoring be required (without limits) for some parameters to better evaluate in the future 'reasonable potential' to cause an in-stream exceedance of a water quality criteria. The TMS is coded to

recommend limits in the draft permit when the discharge concentration input value equals or exceeds 50% of the calculated WQBEL. The TMS is coded to recommend a monitoring requirement (without limits) in the draft permit when the discharge concentration is between 25% and 50% of the WQBEL in the case of non-conservative pollutants or between 10% and 50% of the WQBEL in the case of conservative pollutants. For more explanation of the TMS/PENTOX model, see Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, document #386-2000-015.

When there are less than 10 data points, the maximum effluent concentration of the available data (such as from the permit application and from DMRs) is used by DEP as the discharge concentration input value in the TMS, with the exception of discharge Hardness for which the average effluent concentration is typically used.

For this facility, there were also effluent results from their Discharge Monitoring Reports (DMRs) for **Dibromochloromethane** (also known as Chlorodibromomethane) and **Tetrachloroethylene (PCE**). The past three years of DMRs were reviewed (see attached). Three years of on-going monitoring indicate a maximum concentration of 1.2 ug/l for Dibromochloromethane and a maximum concentration of <0.5 ug/l for PCE. Using these concentrations as input values in the TMS model caused the model to not recommend a limit or a monitoring requirement for either parameter. Results are attached. (Note: because the model did not recommend limits or monitoring when the maximum discharge concentration was entered in the model—a conservative approach--there is no need to use DEP's statistical spreadsheet TOXCONC which can otherwise be used to determine the discharge concentration model input when there are more than 10 effluent sample results). Whereas the existing permit included a monitoring requirement for these two parameters, the draft renewal permit has dropped them based on new data that indicates there is no reasonable potential to cause an exceedance of in-stream water quality criteria.

Three years of past DMR monitoring results were also available for **Total Dissolved Solids**. There were 12 effluent results for Daily Maximum with the maximum being 933 mg/l, the same maximum concentration shown in the application. The model did not recommend a WQBEL for TDS, even using the maximum concentration reported (rather than TOXCONC). The basis of the TDS limits in the permit are the DRBC docket instead.

Some default values were used in the models in the absence of site-specific data including:

Stream Temperature = 20°C
Stream pH = 7 s.u.
Stream chlorine demand = 0.3
Background $CBOD_5$ in stream = 2 mg/l
Background Ammonia in stream = 0 mg/l
Background DO in stream = 8.24 mg/l
Background stream concentrations for toxic parameters = 0 ug/l
Discharge chlorine demand = 0
Discharge Temperature = 25°C
Discharge pH = 7 s.u.
Coefficient of Variability in data = 0.5

In addition the WQM 7.0 and TMS models estimated the stream width, depth, and velocity.

The following limitations and monitoring requirements were determined through water quality modeling (input values used and output files are attached). Also see the discussion below the two tables:

Parameter	Limit (mg/l)	Statistical Base Code	Model
Total Residual Chlorine (TRC)	0.13 / 0.43	Avg.Monthly / IMAX	TRC Excel Spreadsheet
CBOD5	25.0 *	Average Monthly	WQM 7.0
Dissolved Oxygen (DO)	5.0 *	Minimum	WQM 7.0
Ammonia	2.5 / 5 *	Avg.Monthly / Max.	WQM 7.0

*the model defaulted to the existing permit limits meaning no more stringent limits are necessary to protect the receiving water. The existing permit limits have been carried forward for CBOD5, DO, and Ammonia.

Parameter	units	Average Monthly	Daily Maximum	Model
Total Aluminum	ug/l	Report	Report	Toxics Management Spreadsheet (TMS)
Total Copper	ug/l	Report	Report	Toxics Management Spreadsheet (TMS)
Free Cyanide	ug/l	Report	Report	Toxics Management Spreadsheet (TMS)
Total Zinc	ug/l	Report	Report	Toxics Management Spreadsheet (TMS)
Chloroform	ug/l	10.5	16.4	Toxics Management Spreadsheet (TMS)
Dichlorobromomethane	ug/l	Report	Report	Toxics Management Spreadsheet (TMS)

The above monitoring requirements for 5 parameters have been included in the draft renewal permit to ensure there is not reasonable potential to exceed in-stream water quality criteria.

The above WQBELs for Chloroform have been included in the draft renewal permit. It is not evident whether the permittee can immediately meet the new WQBEL. A Pre-Draft Survey was sent to them on January 29, 2025, in accordance with standard procedures. They responded by email on February 28, 2025, that "available tests show variable levels of chloroform in plant influent" and that they were uncertain they could achieve the proposed WQBELs for Chloroform immediately. As a result of their responses, a 3 year compliance schedule has been included in the draft renewal permit: enough time to gather site-specific data if they choose to do so to determine the accuracy of the WQBEL (which was calculated using some default values), to conduct a Toxics Reduction Evaluation (TRE), to eliminate sources if appropriate, to research treatment options if needed, and time for DEP to issue a permit amendment before the final limits take effect if such is warranted..

Anti-Backsliding

All permit limits proposed in the draft renewal permit are at least as stringent as the permit limits specified in the existing permit in accordance with 40 CFR §122.44(l)(1).

Mass Load vs. Concentration Limits

Consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and DEP's SOP for Establishing Effluent Limitations for Individual Sewage Permits, average monthly mass loading limits have been established for $CBOD_5$, TSS, and NH3, and average weekly mass loading limits have additionally been established for $CBOD_5$ and TSS. The mass loading limits for Total Phosphorus were carried forward from the existing permit.

Mass Loading Limitations

All effluent mass loading limits have been based on the formula: design flow x concentration limit x conversion factor of 8.34.

Sample Types and Frequencies

Sample Types and Frequencies are consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and/or carried forward from the previous permit when deemed appropriate. Sample frequencies to gather data do not need to be as frequent as sample frequencies to ensure compliance with a permit limit. A sample frequency of once per month will provide more than 60 data points for each parameter for the evaluation of reasonable potential to exceed water quality criteria conducted for the next renewal permit.

Flow Monitoring

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Influent BOD5 & TSS Monitoring

Influent monitoring for BOD5 and TSS are required by DEP in NPDES permits for major wastewater treatment facilities. The information is used for evaluating treatment performance and by DEP Sewage Planning (Act 537 Plans and Chapter 94 Municipal Loading Reports).

E. Coli Monitoring

Consistent with DEP's SOP Establishing Effluent Limitations for Individual Sewage Permits and due to the regulatory change in the State Water Quality Standards, PA Code Chapter 93, E. Coli monitoring has been included in the draft renewal permit. The statutory basis for this requirement is provided at PA Code § 92a.61.

Total Nitrogen (TN) and Total Phosphorus (TP) Monitoring

In an effort to understand nutrient loading on PA streams, sewage dischargers with design flows greater than 2000 gpd are being required to monitor for TN and TP, at a minimum, in new and reissued permits. The statutory basis for this requirement is provided at PA Code § 92a.61. Because the downstream Cacoosing Creek has been identified as being nutrient-impaired, the existing permit already had a limit for TP. DMRs from January 1, 2022 through December 31, 2024 indicate an average TP concentration in the discharge of 1.3 mg/l and an average load of 6.1 lbs/day. Monitoring for TN has been added to the draft renewal permit, but no limit has been imposed.

Per- and Polyfluoroalkyl Substances (PFAS) Monitoring

The application submitted was on the most recent form but did not include any sampling results for PFAS parameters. The new form includes 4 PFAS parameters in the Pollutant Group 1 table. DEP has initiated a policy to identify PFAS in discharges using 4 indicator parameters: Perfluorooctanoic acid (PFOA), Perfluorooctane sulfonic acid (PFOS), Perfluorobutane sulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA).

A discharge monitoring requirement for these 4 indicator parameters is now routinely included in NPDES permits for Major Sewage facilities, with a footnote allowing the monitoring to be discontinued if 4 consecutive monitoring periods indicate non-detect results at or below sufficiently sensitive Quantitation Levels. Consistent with instructions from DEP's Bureau of Clean Water-Central Office, dated February 5, 2024, a yearly monitoring frequency for the 4 indicator PFAS compounds has been imposed in the draft renewal permit.

Also, the general Pretreatment conditions in Part B.I.D. have changed to require that facilities report to EPA industrial contributors to the treatment plant who fall within categories that are suspected of having PFAS in their wastewater:

> *Each POTW without an approved Pretreatment Program shall, within six (6) months of the permit effective date, develop a list of Industrial Users (IUs) in industry categories expected or suspected of per- and polyfluoroalkyl substance (PFAS) discharges to the POTW and submit the list to EPA at EPA_R3_Pretreatment@epa.gov and to DEP at RA-EPNPDES_PERMITS@pa.gov. These industry categories shall include airports; centralized waste treatment; electroplating; electric and electronic components; fire training; landfills; leather tanning & finishing; metal finishing; organic chemicals, plastics & synthetic fibers (OCPSF); paint formulating; plastics molding & forming; pulp, paper & paperboard; textile mills; sites known or suspected of PFAS contamination; and any other sources expected or suspected of PFAS discharges. The list must contain the names, addresses, NAICS codes, and industry categories (as listed above) of any IUs identified.*

Stormwater Requirements

Outfall 002 discharges stormwater that requires coverage under a NPDES permit in accordance with 40 CFR §122.26(b)(14)(ix). DEP's standard conditions for stormwater discharges at major sewage treatment facilities have been included in the Part C Conditions, the same as in the existing permit: Best Management Practices, a Pollution Prevention and Protection Plan, and routine inspections.

Other Permit Conditions

Conditions standard for Major Sewage facilities are included in Part C of the draft renewal permit, including restrictions of hauled-in wastes during periods of high flow, Solids Management requirements, and Whole Effluent Toxicity (WET) testing requirements. These conditions were also in the existing permit. Newly added permit conditions are found in Part C. III. of the draft permit: allowing the permittee the option to gather site-specific data to refine the accuracy of the new WQBELs after which the permit could be amended if warranted; requiring a Toxics Reduction Evaluation (TRE) for parameters with new WQBELs imposed in the permit; allowing the permittee the option to develop site-specific criteria; allowing a compliance schedule to meet the final limits for newly imposed WQBELs with interim deadlines (interim deadlines are required when the compliance schedule exceeds one year).

Anti-degradation Requirements

All effluent limitations and monitoring requirements have been developed such that the designated stream uses and the level of water quality necessary to protect the designated uses are maintained and protected. No High Quality or Exceptional Value waters are impacted by this discharge.

Class A Trout Waters

The receiving stream is not considered Class A Trout Water (according to DEP's eMapPA).

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☒ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☐ Other:

The dilution series used for the tests was: 100%, 77%, 54%, 27%, and 14%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 54%.

Four Most Recent Test Results

TST Data Analysis – see the attached WET Analysis Spreadsheets: passing results, 16 endpoints, 2 species.

Note: 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**

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

Acute Partial Mix Factor (PMFa): 1 (from TMS model) Chronic Partial Mix Factor (PMFc): 1 (from TMS model)

1. **Determine IWC – Acute (IWCa)**:

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

   [(1.25 MGD x 1.547) / ((1.6 cfs x 1) + (1.25 MGD x 1.547))] x 100 = 54% = **IWCa%**

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

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

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

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

   [(1.25 MGD x 1.547) / ((1.6 cfs x 1) + (1.25 MGD x 1.547))] x 100 = [1.9 / 3.5] x 100 = 54% = **TIWCc%**

3. **Determine Dilution Series**

   Dilution Series = 100%, 77%, 54%, 27%, and 14%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 54%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

Proposed Effluent Limitations and Monitoring Requirements:

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

Outfall 001, Effective Period: Permit Effective Date through Permit Effective Date + 3 Years.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. 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
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.13	XXX	0.43	1/day	Grab
CBOD5	260	417 Wkly Avg	XXX	25.0	40.0 Wkly Avg	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	312	469 Wkly Avg	XXX	30.0	45.0 Wkly Avg	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	1000.0	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia Nov 1 - Apr 30	78	XXX	XXX	7.5	XXX	15	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	26	XXX	XXX	2.5	XXX	5	2/week	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Kjehldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	16.7	XXX	XXX	1.6	XXX	3.2	2/week	24-Hr Composite
Total Aluminum	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Total Copper	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Free Cyanide	Report	Report	XXX	Report	Report	XXX	1/month	Grab
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Chloroform (ug/l)	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Dichlorobromomethane (ug/l)	Report	Report	XXX	Report	Report	XXX	1/month	Grab
PFOA (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab
PFOS (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab
PFBS (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab
HFPO-DA (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab

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

Compliance Sampling Location: at outfall 001

Proposed Effluent Limitations and Monitoring Requirements, continued:

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

Outfall 001, Effective Period: Permit Effective Date + 3 Years through Permit Expiration Date.

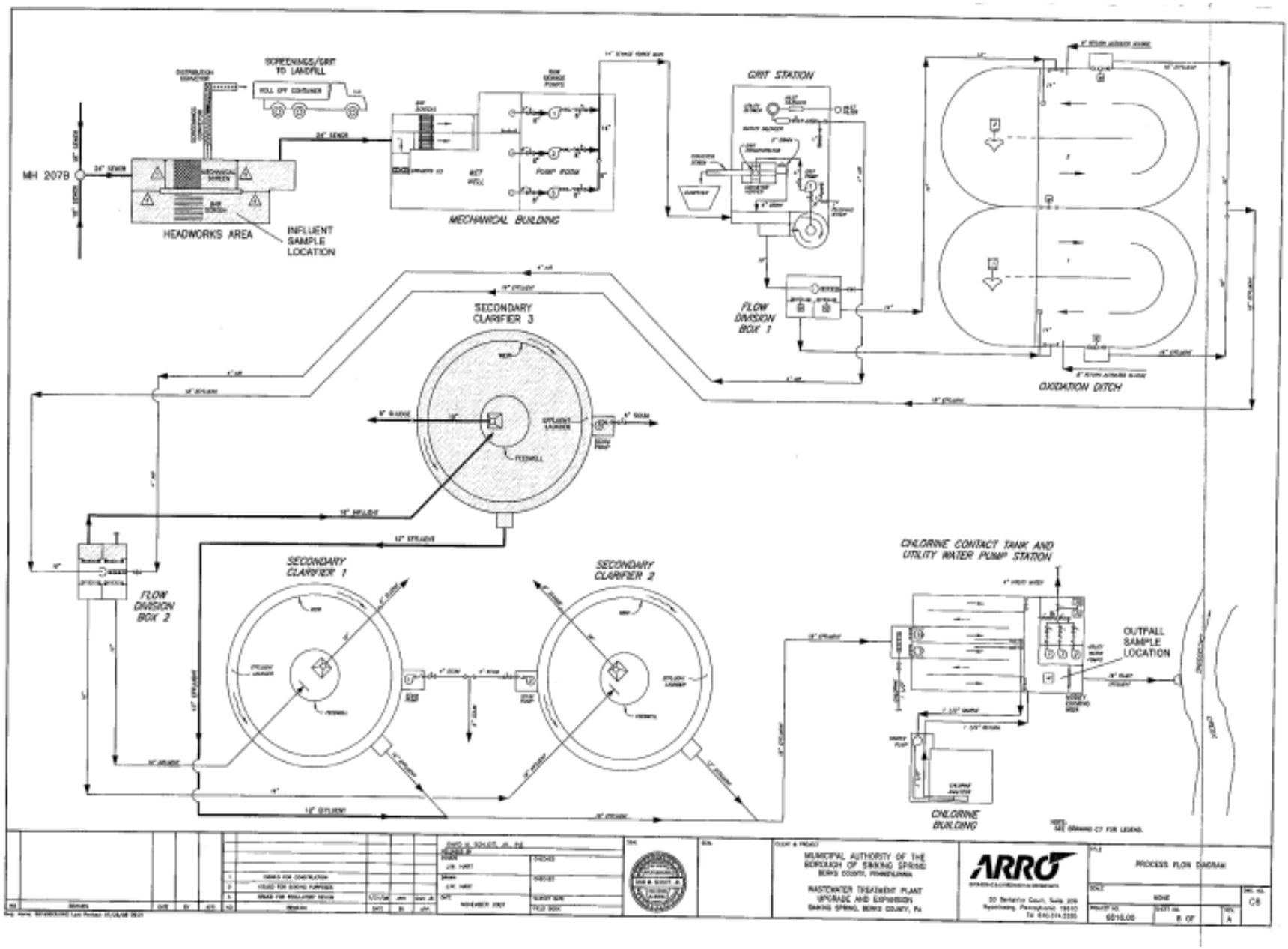
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.13	XXX	0.43	1/day	Grab
CBOD5	260	417 Wkly Avg	XXX	25.0	40.0 Wkly Avg	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	312	469 Wkly Avg	XXX	30.0	45.0 Wkly Avg	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	1000.0	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia Nov 1 - Apr 30	78	XXX	XXX	7.5	XXX	15	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	26	XXX	XXX	2.5	XXX	5	2/week	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Kjehldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	16.7	XXX	XXX	1.6	XXX	3.2	2/week	24-Hr Composite
Total Aluminum	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Total Copper	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Free Cyanide	Report	Report	XXX	Report	Report	XXX	1/month	Grab
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Chloroform (ug/l)	0.11	0.17	XXX	10.5	16.4	XXX	1/week	Grab
Dichlorobromomethane (ug/l)	Report	Report	XXX	Report	Report	XXX	1/month	Grab
PFOA (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab
PFOS (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab
PFBS (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab
HFPO-DA (ng/L)*	XXX	XXX	XXX	XXX	XXX	Report*	1/year	Grab

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

Compliance Sampling Location: at outfall 001

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: New and Reissuance Sewage Individual NPDES Permit Applications, Version 2.0, February 3, 2022
☒	SOP: Establishing Effluent Limitations in Individual Sewage NPDES Permits, version 2.0, February 5, 2024
☒	SOP: Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers. Version 1.5, May 20, 2021.
☒	SOP: Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers. Version 1.5, May 20, 2021.
☒	Other: DRBC docket D-1994-031 CP-5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ROLL OFF CONTAINER
MH 207B
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HEADWORKS AREA
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MECHANICAL BUILDING
GRIT STATION
FLOW DIVISION BOX 1
OXIDATION DITCH
SECONDARY CLARIFIER 3
SECONDARY CLARIFIER 1
SECONDARY CLARIFIER 2
FLOW DIVISION BOX 2
CHLORINE CONTACT TANK AND UTILITY WATER PUMP STATION
OUTFALL SAMPLE LOCATION
CHLORINE BUILDING
MUNICIPAL AUTHORITY OF THE BOROUGH OF SINKING SPRING
BERKS COUNTY, PENNSYLVANIA
WASTEWATER TREATMENT PLANT
UPGRADE AND EXPANSION
SINKING SPRING, BERKS COUNTY, PA
ARRO
PROCESS FLOW DIAGRAM
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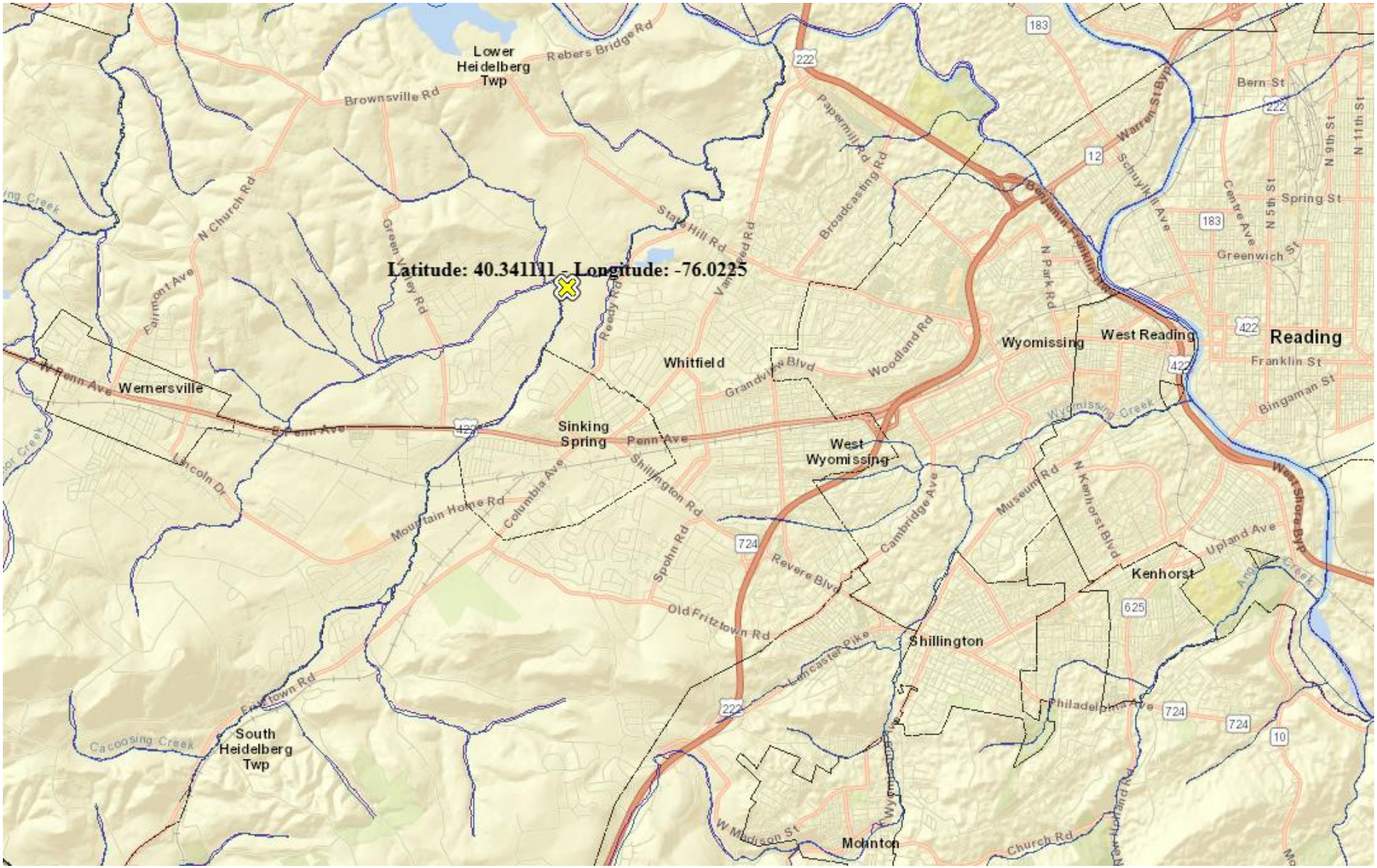
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Brownsville Rd
N Church Rd
Fairmont Ave
Green Valley Rd
State Hill Rd
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Van Reed Rd
Broadcasting Rd
Papermill Rd
Whitfield
Grandview Blvd
Woodland Rd
Wernersville
W Penn Ave
E Penn Ave
Sinking Spring
Penn Ave
Lincoln Dr
Mountain Home Rd
Columbia Ave
Shillington Rd
Spohn Rd
West Wyomissing
Wyomissing
West Reading
Reading
N Park Rd
Franklin St
Bingaman St
Wyomissing Creek
Museum Rd
N Kenhorst Blvd
Cambridge Ave
Revere Blvd
Old Fritztown Rd
Kenhorst
Upland Ave
Angelica Creek
West Shore Byp
Shillington
Lancaster Pike
Philadelphia Ave
Fritztown Rd
Cacoosing Creek
South Heidelberg Twp
W Wyomissing Blvd
W Madison St
Mohnton
Church Rd
Bern St
Warren St Byp
Schuylkill Ave
Centre Ave
N 5th St
N 9th St
N 11th St
Spring St
Greenwich St
Benjamin Franklin Hwy
183
222
12
422
724
625
10

PERMIT	MONITORING	MONITORING	DMR_VERSIC	OUTFAL	PARAMETEI	LOAD_UNIT	LOAD_1_VALUI	LOAD_1	LOAD_1_SB	LOAD_2_VA	LOAD_2	LOAD_2_SB	CO
PA0028649	1/1/2022	1/31/2022	1	001	Flow	MGD	0.499	Monitor	Average Mo	0.673	Monitor	Daily Maximum	
PA0028649	2/1/2022	2/28/2022	1	001	Flow	MGD	0.56	Monitor	Average Mo	0.914	Monitor	Daily Maximum	
PA0028649	3/1/2022	3/31/2022	1	001	Flow	MGD	0.513	Monitor	Average Mo	0.581	Monitor	Daily Maximum	
PA0028649	4/1/2022	4/30/2022	1	001	Flow	MGD	0.738	Monitor	Average Mo	1.023	Monitor	Daily Maximum	
PA0028649	5/1/2022	5/31/2022	1	001	Flow	MGD	0.681	Monitor	Average Mo	1.024	Monitor	Daily Maximum	
PA0028649	6/1/2022	6/30/2022	1	001	Flow	MGD	0.526	Monitor	Average Mo	0.621	Monitor	Daily Maximum	
PA0028649	7/1/2022	7/31/2022	1	001	Flow	MGD	0.472	Monitor	Average Mo	0.659	Monitor	Daily Maximum	
PA0028649	8/1/2022	8/31/2022	1	001	Flow	MGD	0.447	Monitor	Average Mo	0.681	Monitor	Daily Maximum	
PA0028649	9/1/2022	9/30/2022	1	001	Flow	MGD	0.455	Monitor	Average Mo	0.477	Monitor	Daily Maximum	
PA0028649	10/1/2022	10/31/2022	1	001	Flow	MGD	0.483	Monitor	Average Mo	0.725	Monitor	Daily Maximum	
PA0028649	11/1/2022	11/30/2022	1	001	Flow	MGD	0.496	Monitor	Average Mo	0.63	Monitor	Daily Maximum	
PA0028649	12/1/2022	12/31/2022	1	001	Flow	MGD	0.561	Monitor	Average Mo	0.87	Monitor	Daily Maximum	
PA0028649	1/1/2023	1/31/2023	1	001	Flow	MGD	0.595	Monitor	Average Mo	0.879	Monitor	Daily Maximum	
PA0028649	2/1/2023	2/28/2023	1	001	Flow	MGD	0.542	Monitor	Average Mo	0.652	Monitor	Daily Maximum	
PA0028649	3/1/2023	3/31/2023	1	001	Flow	MGD	0.496	Monitor	Average Mo	0.684	Monitor	Daily Maximum	
PA0028649	4/1/2023	4/30/2023	1	001	Flow	MGD	0.442	Monitor	Average Mo	0.733	Monitor	Daily Maximum	
PA0028649	5/1/2023	5/31/2023	1	001	Flow	MGD	0.467	Monitor	Average Mo	0.695	Monitor	Daily Maximum	
PA0028649	6/1/2023	6/30/2023	1	001	Flow	MGD	0.426	Monitor	Average Mo	0.496	Monitor	Daily Maximum	
PA0028649	7/1/2023	7/31/2023	1	001	Flow	MGD	0.663	Monitor	Average Mo	1.331	Monitor	Daily Maximum	
PA0028649	8/1/2023	8/31/2023	1	001	Flow	MGD	0.501	Monitor	Average Mo	0.645	Monitor	Daily Maximum	
PA0028649	9/1/2023	9/30/2023	1	001	Flow	MGD	0.614	Monitor	Average Mo	1.016	Monitor	Daily Maximum	
PA0028649	10/1/2023	10/31/2023	2	001	Flow	MGD	0.583	Monitor	Average Mo	0.713	Monitor	Daily Maximum	
PA0028649	11/1/2023	11/30/2023	1	001	Flow	MGD	0.474	Monitor	Average Mo	0.703	Monitor	Daily Maximum	
PA0028649	12/1/2023	12/31/2023	1	001	Flow	MGD	0.852	Monitor	Average Mo	2.173	Monitor	Daily Maximum	
PA0028649	1/1/2024	1/31/2024	1	001	Flow	MGD	1.298	Monitor	Average Mo	2.18	Monitor	Daily Maximum	
PA0028649	2/1/2024	2/29/2024	1	001	Flow	MGD	0.881	Monitor	Average Mo	1.181	Monitor	Daily Maximum	
PA0028649	3/1/2024	3/31/2024	1	001	Flow	MGD	1.063	Monitor	Average Mo	1.602	Monitor	Daily Maximum	
PA0028649	4/1/2024	4/30/2024	1	001	Flow	MGD	1.167	Monitor	Average Mo	2.09	Monitor	Daily Maximum	
PA0028649	5/1/2024	5/31/2024	1	001	Flow	MGD	0.657	Monitor	Average Mo	0.831	Monitor	Daily Maximum	
PA0028649	6/1/2024	6/30/2024	1	001	Flow	MGD	0.481	Monitor	Average Mo	0.59	Monitor	Daily Maximum	
PA0028649	7/1/2024	7/31/2024	1	001	Flow	MGD	0.479	Monitor	Average Mo	0.798	Monitor	Daily Maximum	
PA0028649	8/1/2024	8/31/2024	1	001	Flow	MGD	0.522	Monitor	Average Mo	0.773	Monitor	Daily Maximum	
PA0028649	9/1/2024	9/30/2024	1	001	Flow	MGD	0.448	Monitor	Average Mo	0.485	Monitor	Daily Maximum	
PA0028649	10/1/2024	10/31/2024	1	001	Flow	MGD	0.436	Monitor	Average Mo	0.487	Monitor	Daily Maximum	
PA0028649	11/1/2024	11/30/2024	1	001	Flow	MGD	0.457	Monitor	Average Mo	0.549	Monitor	Daily Maximum	
PA0028649	12/1/2024	12/31/2024	1	001	Flow	MGD	0.492	Monitor	Average Mo	0.636	Monitor	Daily Maximum	
							0.596	Avg		2.18	Max		
							1.298	MMA					
							0.867	90th Percentile					

PERMIT	MONITORIN	MONITORING	OUTFALL	PARAMETER	UNITS	Q	CONC_2_VALU	CONC_2_LIMI	CONC_2_SB	CONC_3_VALU	CONC_3_LIMI	CONC_3_SBC	SAMPLE_F	SAMPLE_TYPE
PA002864	1/1/2022	1/31/2022	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	2/1/2022	2/28/2022	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	3/1/2022	3/31/2022	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	4/1/2022	4/30/2022	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.7	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	5/1/2022	5/31/2022	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	6/1/2022	6/30/2022	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.7	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	7/1/2022	7/31/2022	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	8/1/2022	8/31/2022	001	Dibromochloromethane	ug/l		1	Monitor and R	Average Mont	1.2	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	9/1/2022	9/30/2022	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.7	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	10/1/2022	10/31/2022	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	11/1/2022	11/30/2022	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.6	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	12/1/2022	12/31/2022	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	1/1/2023	1/31/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	2/1/2023	2/28/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	3/1/2023	3/31/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	4/1/2023	4/30/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	5/1/2023	5/31/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	6/1/2023	6/30/2023	001	Dibromochloromethane	ug/l		1	Monitor and R	Average Mont	1.1	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	7/1/2023	7/31/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	8/1/2023	8/31/2023	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.7	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	9/1/2023	9/30/2023	001	Dibromochloromethane	ug/l	<	0.8	Monitor and R	Average Mont	1.1	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	10/1/2023	10/31/2023	001	Dibromochloromethane	ug/l		0.6	Monitor and R	Average Mont	0.6	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	11/1/2023	11/30/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	12/1/2023	12/31/2023	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	1/1/2024	1/31/2024	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	2/1/2024	2/29/2024	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.6	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	3/1/2024	3/31/2024	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	4/1/2024	4/30/2024	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	5/1/2024	5/31/2024	001	Dibromochloromethane	ug/l		0.7	Monitor and R	Average Mont	0.7	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	6/1/2024	6/30/2024	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.6	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	7/1/2024	7/31/2024	001	Dibromochloromethane	ug/l	<	0.6	Monitor and R	Average Mont	0.6	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	8/1/2024	8/31/2024	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	9/1/2024	9/30/2024	001	Dibromochloromethane	ug/l	<	0.8	Monitor and R	Average Mont	1.1	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	10/1/2024	10/31/2024	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	11/1/2024	11/30/2024	001	Dibromochloromethane	ug/l		0.6	Monitor and R	Average Mont	0.7	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	12/1/2024	12/31/2024	001	Dibromochloromethane	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
						<	0.58	Average		1.2	Max			

PERMIT	MONITORIN	MONITORING	OUTFALL	PARAMETER	UNITS	Q	CONC_2_VALUE	CONC_2_LIMI	CONC_2_SB(	CONC_3_VALU	CONC_3_LIMIT	CONC_3_SBC	SAMPLE_F	SAMPLE_TYPE
PA002864	1/1/2022	1/31/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	2/1/2022	2/28/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	3/1/2022	3/31/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	4/1/2022	4/30/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	5/1/2022	5/31/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	6/1/2022	6/30/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	7/1/2022	7/31/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	8/1/2022	8/31/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	9/1/2022	9/30/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	10/1/2022	10/31/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	11/1/2022	11/30/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	12/1/2022	12/31/2022	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	1/1/2023	1/31/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	2/1/2023	2/28/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	3/1/2023	3/31/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	4/1/2023	4/30/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	5/1/2023	5/31/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	6/1/2023	6/30/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	7/1/2023	7/31/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	8/1/2023	8/31/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	9/1/2023	9/30/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	10/1/2023	10/31/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	11/1/2023	11/30/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	12/1/2023	12/31/2023	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	1/1/2024	1/31/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	2/1/2024	2/29/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	3/1/2024	3/31/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	4/1/2024	4/30/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	5/1/2024	5/31/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	6/1/2024	6/30/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	7/1/2024	7/31/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	8/1/2024	8/31/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	9/1/2024	9/30/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	10/1/2024	10/31/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	11/1/2024	11/30/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
PA002864	12/1/2024	12/31/2024	001	Tetrachloroethylene	ug/l	<	0.5	Monitor and R	Average Mont	< 0.5	Monitor and Re	Daily Maximum	2/month	24-Hr Composite
						<	0.5	Avg		<0.5	Max			

3800-PM-BCW0009b Rev. 12/2023
Permit Application

Applicant: Borough of Sinking Spring

INDUSTRIAL USER INFORMATION

Complete this section for industrial users (IUs) connected to the sewer system. Two IUs can be recorded per page. Attach additional pages as necessary. See Table 1 of the instructions to determine whether the IU is a "Categorical Industry."

☐ Check here if there are NO industrial users.

☐ Check here if the applicant is implementing an approved pretreatment program administered by EPA.

Date of most recent approval of local limits by EPA: _____

1. Industrial Username:	Alocn Manufacturing, Ltd.	2. Categorical Industry? ☐ Yes ☒ No
Address:	714 Coumbia Avenue, Sinking Spring, PA, 19608	Applicable Pretreatment (PT) Standard:
Municipality / County:	Sinking Spring / Berks	40 CFR Part:

3. Description of Industry and Wastewater Characteristics:
Manufacturer of surgical devices and instruments. Waste discharge to sanitary sewer is of domestic quality combined flow of sanitary and process water.

4. Is this industry a significant industrial user (SIU)? ☐ Yes ☒ No

5. Is this industry a non-significant categorical industrial user (NSCIU)? ☐ Yes ☒ No

6. Does the IU truck or haul waste to the treatment plant? ☐ Yes ☒ No

7. Has an industrial user permit been issued by the POTW or permittee? ☒ Yes ☐ No

8. Subpart Letter	Subpart Title	9. Wastewater Flows (GPD)	
		Process:	
		NCCW:	
		Sanitary:	17,641
		Other:	
		Total:	17,641

10. Has the IU been the known or suspected source of any problems at the treatment plant (e.g., upsets, pass through, interference) in the past four and one-half years? ☐ Yes ☒ No
If Yes, provide an explanation:

11. List any other pollutant(s) with Chapter 93 WQS that may be discharged from the IU and are not identified in Pollutant Groups 1 – 6.
n/a

1. Industrial Username:	Aluminum Alloys	2. Categorical Industry? ☒ Yes ☐ No
Address:	4601 West Penn Ave., Sinking Spring, PA 19608	Applicable Pretreatment (PT) Standard:
Municipality / County:	Borough of Sinking Spring / Berks	40 CFR Part 467

3. Description of Industry and Wastewater Characteristics: Manufacturing of aluminum sand casting and maching. Wastewater dischared to sanitary swer is of domestic strenth and quality.

4. Is this industry a significant industrial user (SIU)? ☒ Yes ☐ No

5. Is this industry a non-significant categorical industrial user (NSCIU)? ☐ Yes ☒ No

6. Does the IU truck or haul wastewater to the treatment plant? ☐ Yes ☒ No

7. Has an industrial user permit been issued by the POTW or permittee? ☒ Yes ☐ No

8. Subpart Letter	Subpart Title	9. Wastewater Flows (GPD)	
D	Forging Subcategory	Process:	
		NCCW:	
		Sanitary:	828
		Other:	
		Total:	828

10. Has the IU been the known or suspected source of any problems at the treatment plant (e.g., upsets, pass through, interference) in the past four and one-half years? ☐ Yes ☒ No
If Yes, provide an explanation:

11. List any other pollutant(s) with Chapter 93 WQS that may be discharged from the IU and are not identified in Pollutant Groups 1 – 6.
n/a

INDUSTRIAL USER INFORMATION

Complete this section for industrial users (IUs) connected to the sewer system. Two IUs can be recorded per page. Attach additional pages as necessary. See Table 1 of the instructions to determine whether the IU is a "Categorical Industry."

☐ Check here if there are NO industrial users.

☐ Check here if the applicant is implementing an approved pretreatment program administered by EPA.

Date of most recent approval of local limits by EPA: _____

1. Industrial Username:	Grafika Commercial Printing Inc..	2. Categorical Industry? ☒ Yes ☐ No
Address:	710 Johnston Street, Sinking Spring, PA, 19608	Applicable Pretreatment (PT) Standard:
Municipality / County:	Sinking Spring / Berks	40 CFR Part: 447

3. Description of Industry and Wastewater Characteristics:
Flexo, offest and silksreen printing. Waste discharge to sanitary sewer is of domestic quality combined flow of sanitary and process water.

4. Is this industry a significant industrial user (SIU)? ☒ Yes ☐ No

5. Is this industry a non-significant categorical industrial user (NSCIU)? ☐ Yes ☒ No

6. Does the IU truck or haul waste to the treatment plant? ☐ Yes ☒ No

7. Has an industrial user permit been issued by the POTW or permittee? ☒ Yes ☐ No

8. Subpart Letter	Subpart Title	9. Wastewater Flows (GPD)	
A	Oil Base Sovent Wash Ink Subcategory	Process:	
		NCCW:	
		Sanitary:	3,200
		Other:	
		Total:	3,200

10. Has the IU been the known or suspected source of any problems at the treatment plant (e.g., upsets, pass through, interference) in the past four and one-half years? ☐ Yes ☒ No
If Yes, provide an explanation:

11. List any other pollutant(s) with Chapter 93 WQS that may be discharged from the IU and are not identified in Pollutant Groups 1 – 6.
n/a

Cacoosing Creek, at outfall 001:

StreamStats Output Report					
State/Regio	PA				
Workspace	PA20250127154706395000				
Latitude	40.34116				
Longitude	-76.02245				
Time	1/27/2025	10:47:38 AM			
Basin Characteristics					
Parameter (	Parameter [	Value	Unit		
CARBON	Percentage	36.87	percent		
DRNAREA	Area that dr	8.2	square miles		
PRECIP	Mean Annua	45	inches		
ROCKDEP	Depth to ro	4.9	feet		
STRDEN	Stream Den	1.36	miles per square mile		
Low-Flow St	100.0 Percent Low Flow Region 2				
Parameter (	Parameter I	Value	Units	Min Limit	Max Limit
CARBON	Percent Car	36.87	percent	0	99
DRNAREA	Drainage Ar	8.2	square mile	4.93	1280
PRECIP	Mean Annua	45	inches	35	50.4
ROCKDEP	Depth to Ro	4.9	feet	3.32	5.65
STRDEN	Stream Den	1.36	miles per sq	0.51	3.1
Low-Flow St	100.0 Percent Low Flow Region 2				
Statistic	Value	Unit	SE	ASEp	
7 Day 2 Yea	2.74	ft^3/s	38	38	
30 Day 2 Ye	3.25	ft^3/s	33	33	
7 Day 10 Ye	1.58	ft^3/s	51	51	
30 Day 10 Y	1.86	ft^3/s	46	46	
90 Day 10 Y	2.32	ft^3/s	36	36	
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USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS).					
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and					
Application Version: 4.26.0					
StreamStats Services Version: 1.2.22					
NSS Services Version: 2.2.1					

Cacoosing Creek, just before Spring Twp STP discharge:

StreamStats Output Report					
State/Regior	PA				
Workspace I	PA20250127155454616000				
Latitude	40.3472				
Longitude	-76.00814				
Time	1/27/2025	10:55:20 AM			
Basin Characteristics					
Parameter C	Parameter D	Value	Unit		
CARBON	Percentage (	52.19	percent		
DRNAREA	Area that dra	18.6	square miles		
PRECIP	Mean Annua	45	inches		
ROCKDEP	Depth to roc	5.1	feet		
STRDEN	Stream Dens	1.37	miles per square mile		
Low-Flow St	100.0 Percent Low Flow Region 2				
Parameter C	Parameter N	Value	Units	Min Limit	Max Limit
CARBON	Percent Carl	52.19	percent	0	99
DRNAREA	Drainage Are	18.6	square miles	4.93	1280
PRECIP	Mean Annua	45	inches	35	50.4
ROCKDEP	Depth to Ro	5.1	feet	3.32	5.65
STRDEN	Stream Dens	1.37	miles per sq	0.51	3.1
Low-Flow St	100.0 Percent Low Flow Region 2				
Statistic	Value	Unit	SE	ASEp	
7 Day 2 Year	8.4	ft^3/s	38	38	
30 Day 2 Yea	9.45	ft^3/s	33	33	
7 Day 10 Yea	5.55	ft^3/s	51	51	
30 Day 10 Ye	6.14	ft^3/s	46	46	
90 Day 10 Ye	6.92	ft^3/s	36	36	
USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to sati					
USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS).					
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and					
Application Version: 4.26.0					
StreamStats Services Version: 1.2.22					
NSS Services Version: 2.2.1					

Cacoosing Creek just before confluence with Tulpehocken Creek:

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250127161001694000
Clicked Point (Latitude, Longitude):	40.36577, -75.99432
Time:	2025-01-27 11:10:29 -0500

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	56.78	percent	0	99
DRNAREA	Drainage Area	21.8	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	45	inches	35	50.4
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
STRDEN	Stream Density	1.34	miles per square mile	0.51	3.1

Low-Flow Statistics Flow Report [Low Flow Region 2]

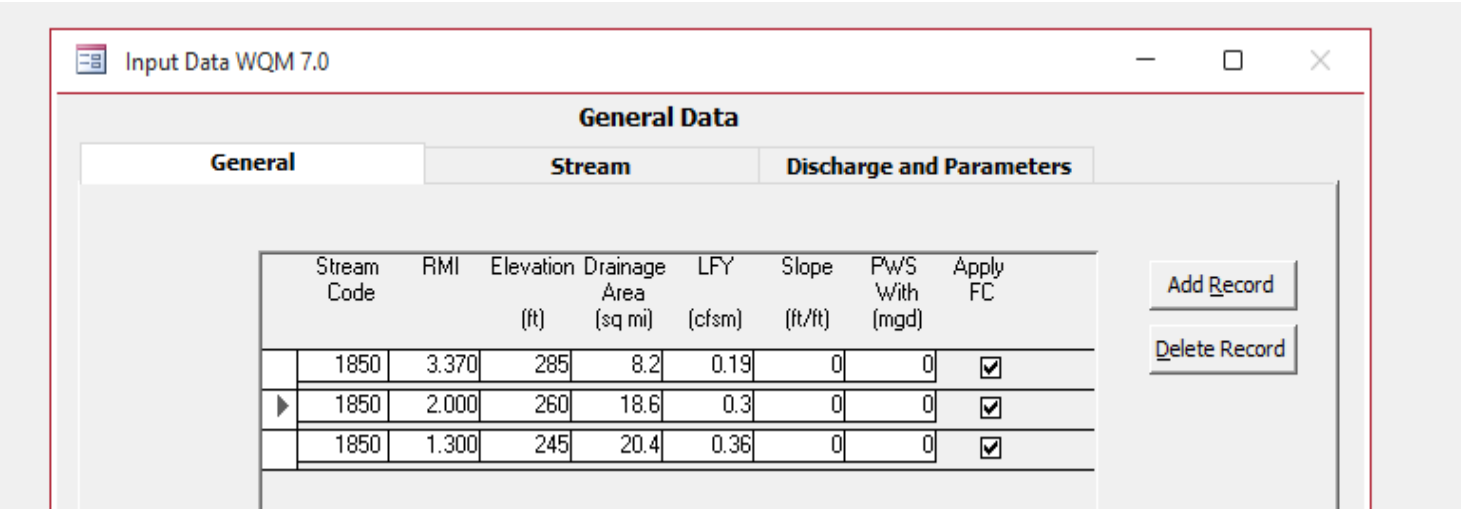
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

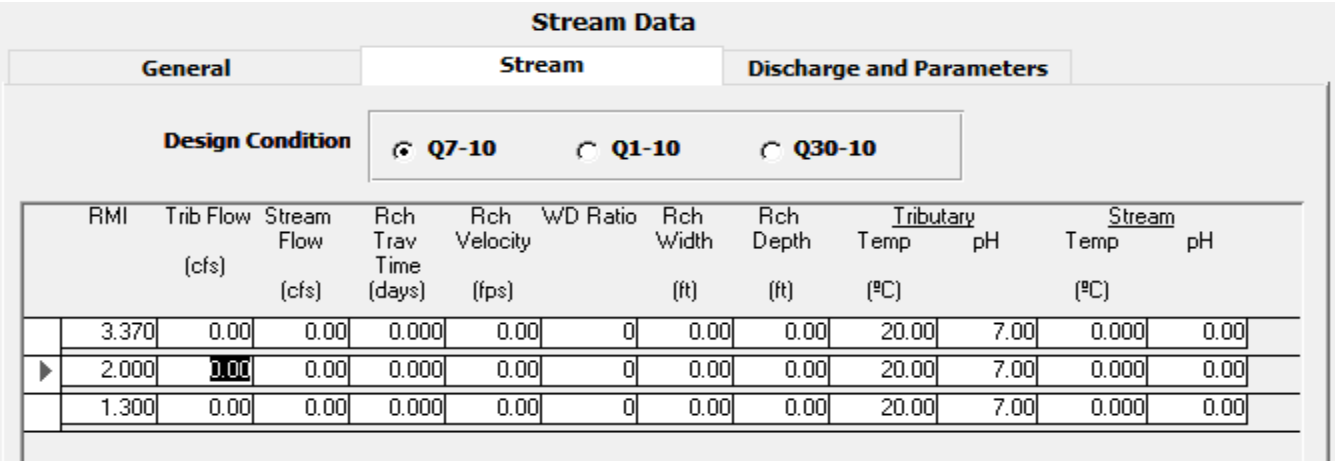
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	11	ft^3/s	38	38
30 Day 2 Year Low Flow	12.2	ft^3/s	33	33
7 Day 10 Year Low Flow	7.64	ft^3/s	51	51
30 Day 10 Year Low Flow	8.27	ft^3/s	46	46
90 Day 10 Year Low Flow	9.02	ft^3/s	36	36

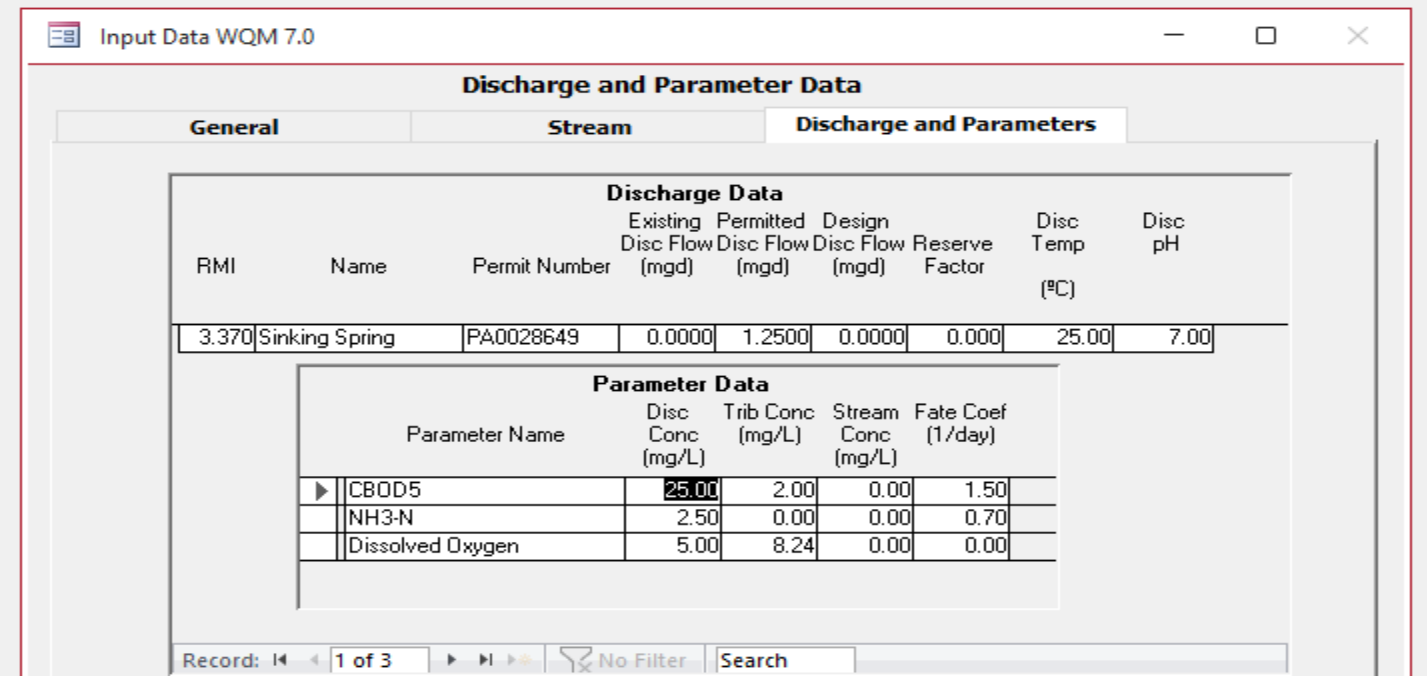
Low-Flow Statistics Citations

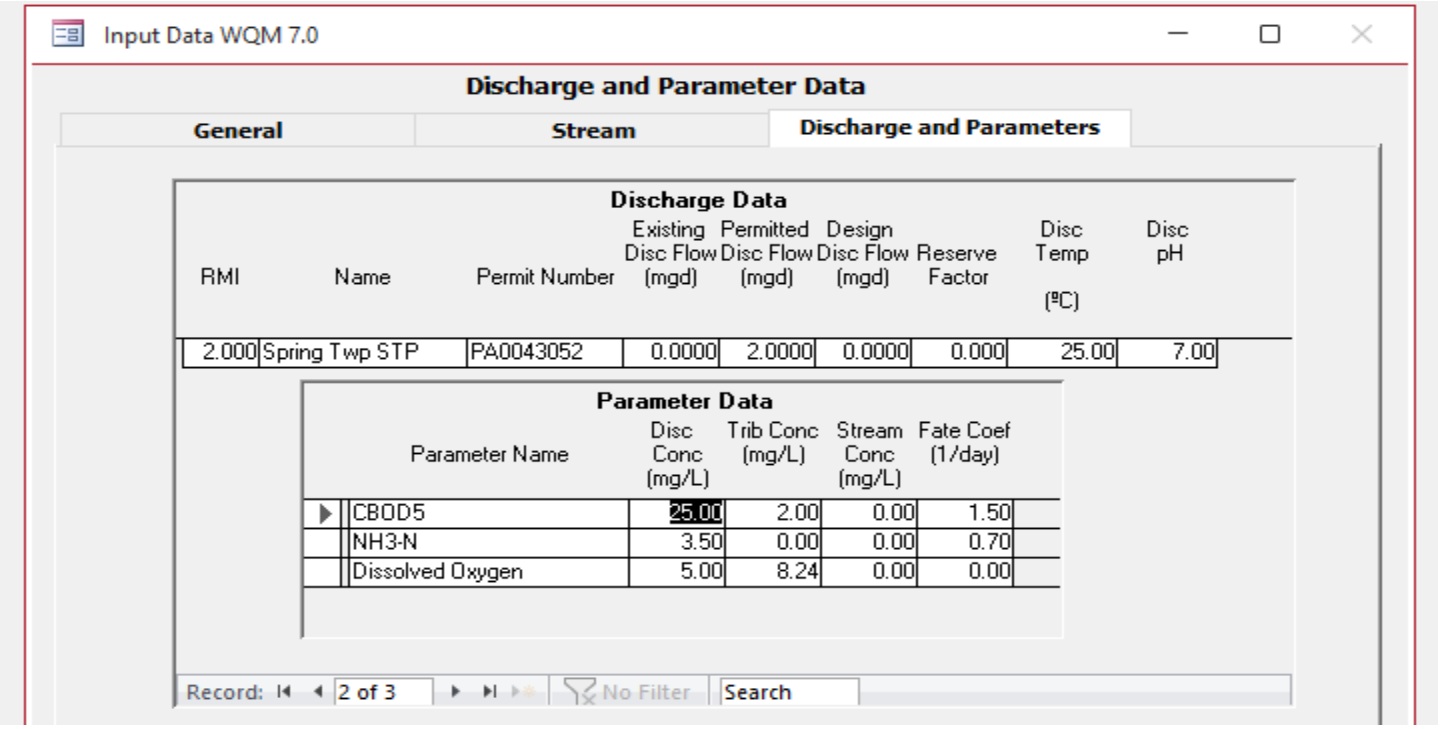
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

run WQM 7.0 with NH3 and CBOD existing permit limits loaded into input values (in accordance with TGD) and RMI of 2 for Spring Twp STP (per their permit):









Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

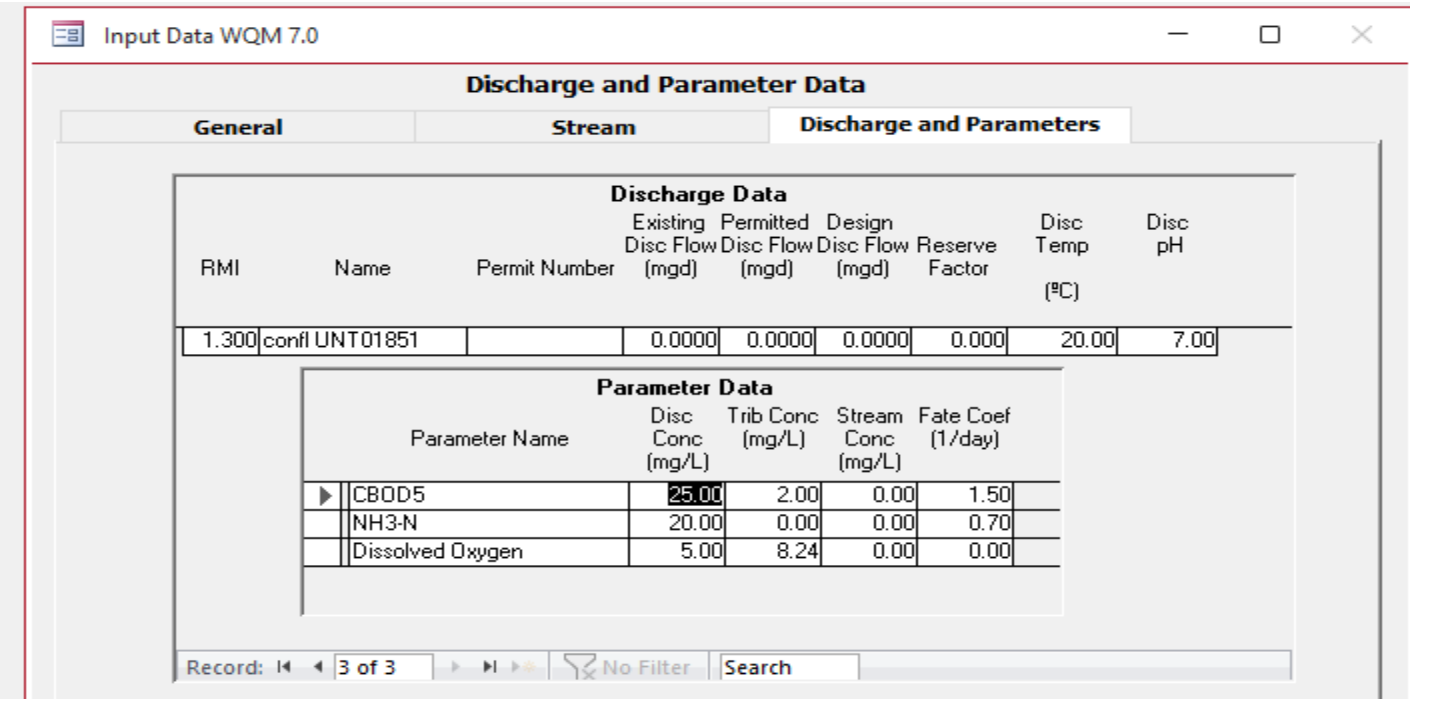
Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
2.000	Spring Twp STP	PA0043052	0.0000	2.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	3.50	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 2 of 3 | No Filter | Search



Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

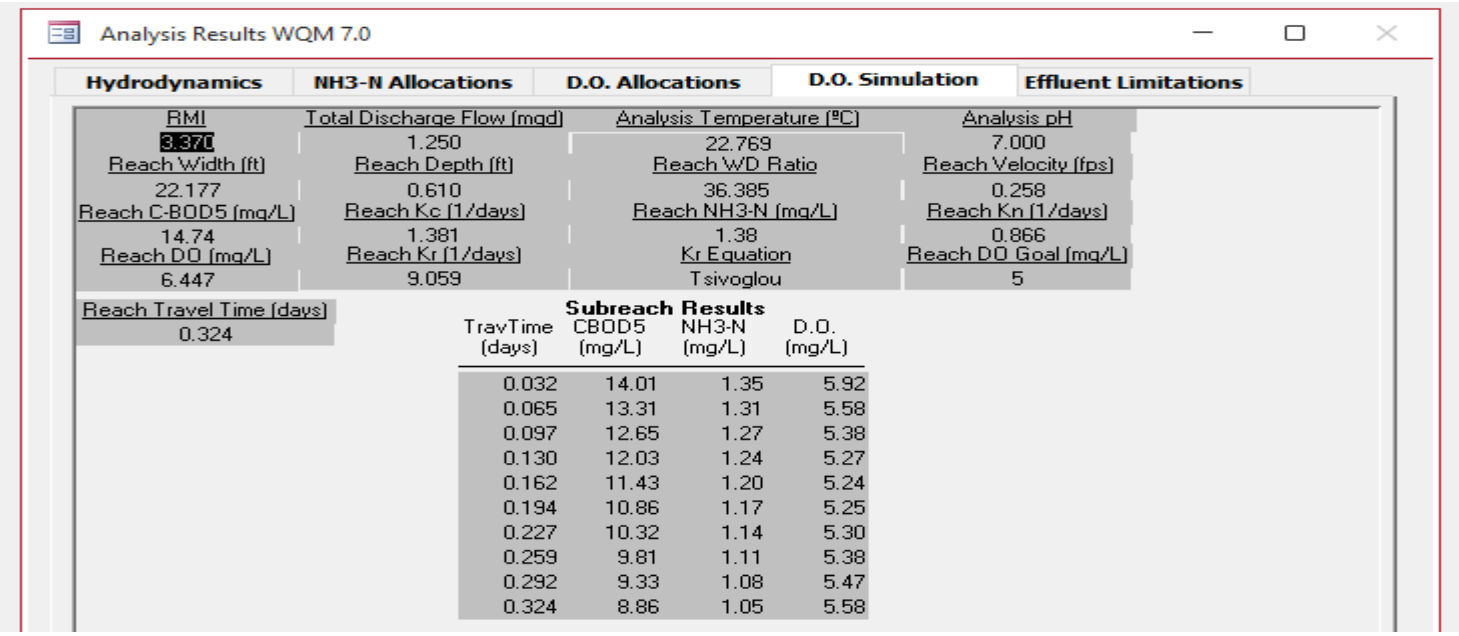
Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
1.300	confl UNT01851		0.0000	0.0000	0.0000	0.000	20.00	7.00

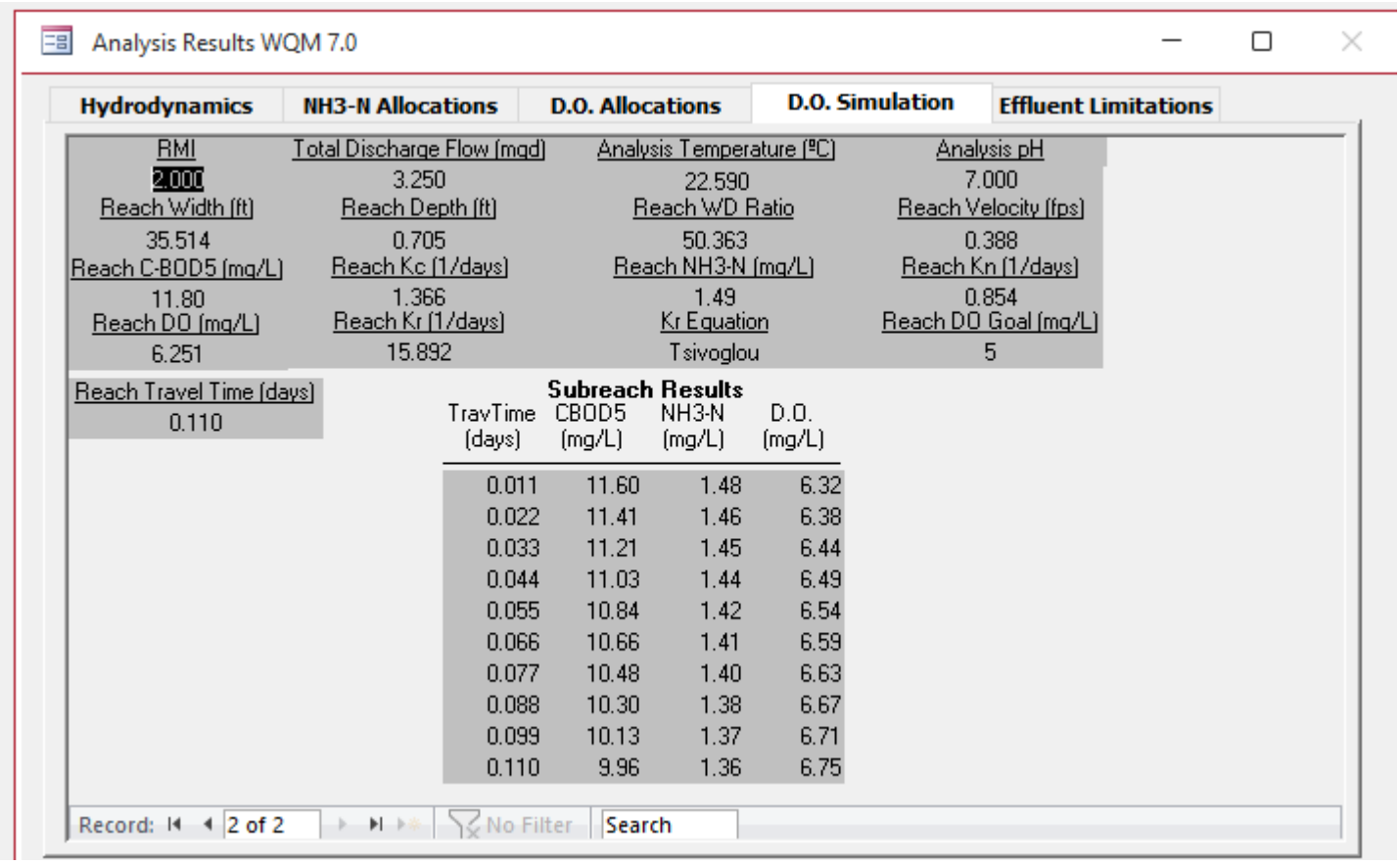
Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	20.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 3 of 3 | No Filter | Search



1 of 2



DO recovered (before and after Spring Twp Treatment Plant)

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

Design Condition: ◉ Q7-10 ○ Q1-10 ○ Q30-10

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 (ºC)	Analysis pH
3.370	1.56	0.00	1.56	1.9338	0.00346	.61	22.18	36.39	0.258	0.324	22.77	7.00
2.000	4.68	0.00	4.68	5.0278	0.00406	.705	35.51	50.36	0.388	0.110	22.59	7.00

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

RMI	Discharge Name	Permit Number	Disc Flow (mgd)
3.37	Sinking Spring	PA0028649	0.0000

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	2.5	5	
Dissolved Oxygen			5

Record: 1 of 2 | No Filter | Search

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

RMI	Discharge Name	Permit Number	Disc Flow (mgd)
2.00	Spring Twp STP	PA0043052	0.0000

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	3.5	7	
Dissolved Oxygen			5

Record: 2 of 2 | No Filter | Search

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1.58	= Q stream (cfs)	0.5	= CV Daily
1.25	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.280	1.3.2.iii	WLA cfc = 0.265
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.104	5.1d	LTA_cfc = 0.154

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.128	AFC
		INST MAX LIMIT (mg/l) = 0.419	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

TRC_CALC(35).XLS

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Boro of Sinking Spring** NPDES Permit No.: **PA0028649** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Domestic Sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.25	304	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		933									
	Chloride (PWS)	mg/L		367									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		81.1									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		211									
	Total Antimony	µg/L		0.5									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		14									
	Total Beryllium	µg/L	<	0.4									
	Total Boron	µg/L		274									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L		0.19									
	Total Cobalt	µg/L		0.2									
	Total Copper	mg/L		0.015									
	Free Cyanide	µg/L		3									
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L		26									
	Total Iron	µg/L		31									
	Total Lead	µg/L		0.3									
	Total Manganese	µg/L		3									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L	<	1									
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.005									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.4									
	Total Zinc	mg/L		0.054									
	Total Molybdenum	µg/L		2									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L		0.6									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									
	Chloroform	µg/L		7.9									
	Dichlorobromomethane	µg/L		3									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	0.5									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L		7.6									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L		0.6									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	0.179									
	2,4-Dichlorophenol	µg/L	<	0.223									
	2,4-Dimethylphenol	µg/L	<	0.477									
	4,6-Dinitro-o-Cresol	µg/L	<	1.21									
	2,4-Dinitrophenol	µg/L	<	1.88									
	2-Nitrophenol	µg/L	<	0.229									
	4-Nitrophenol	µg/L	<	1.41									
	p-Chloro-m-Cresol	µg/L	<	0.258									
	Pentachlorophenol	µg/L	<	0.499									
	Phenol	µg/L	<	0.2									
	2,4,6-Trichlorophenol	µg/L		1.31									
Group 5	Acenaphthene	µg/L	<	0.351									
	Acenaphthylene	µg/L	<	0.349									
	Anthracene	µg/L	<	0.327									
	Benzidine	µg/L	<	0.61									
	Benzo(a)Anthracene	µg/L	<	0.271									
	Benzo(a)Pyrene	µg/L	<	2.5									
	3,4-Benzofluoranthene	µg/L	<	2.5									
	Benzo(ghi)Perylene	µg/L		0.51									
	Benzo(k)Fluoranthene	µg/L	<	2.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.251									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.27									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.27									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	1.58									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.395									
	Butyl Benzyl Phthalate	µg/L	<	1.04									
	2-Chloronaphthalene	µg/L	<	0.352									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.341									
	Chrysene	µg/L	<	0.51									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.618									
	1,2-Dichlorobenzene	µg/L	<	0.196									
	1,3-Dichlorobenzene	µg/L	<	0.427									
	1,4-Dichlorobenzene	µg/L	<	0.467									
	3,3-Dichlorobenzidine	µg/L	<	0.745									
	Diethyl Phthalate	µg/L	<	0.85									
	Dimethyl Phthalate	µg/L	<	0.511									
	Di-n-Butyl Phthalate	µg/L		5.8									
	2,4-Dinitrotoluene	µg/L	<	0.465									

	2,6-Dinitrotoluene	µg/L	<	0.448									
	Di-n-Octyl Phthalate	µg/L	<	0.366									
	1,2-Diphenylhydrazine	µg/L	<	0.527									
	Fluoranthene	µg/L		0.627									
	Fluorene	µg/L	<	0.31									
	Hexachlorobenzene	µg/L	<	0.418									
	Hexachlorobutadiene	µg/L	<	0.266									
	Hexachlorocyclopentadiene	µg/L	<	0.403									
	Hexachloroethane	µg/L	<	0.474									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.627									
	Isophorone	µg/L	<	0.0256									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	0.243									
	n-Nitrosodimethylamine	µg/L	<	2.4									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.37									
	n-Nitrosodiphenylamine	µg/L	<	0.422									
	Phenanthrene	µg/L	<	0.421									
	Pyrene	µg/L	<	0.59									
	1,2,4-Trichlorobenzene	µg/L	<	0.273									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Boro of Sinking Spring STP, NPDES Permit No. PA0028649, 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 (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	001850	3.37	285	8.2			Yes
End of Reach 1	001850	2	260	18.6			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	3.37	0.2										170	7		
End of Reach 1	2	0.3													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	3.37														
End of Reach 1	2														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Boro of Sinking Spring, NPDES Permit No. PA0028649, Outfall 001

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
3.37	1.64		1.64	1.934	0.003	0.611	22.336	36.533	0.262	0.32	5.124
2	4.76		4.76								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
3.37	11.45		11.45	1.934	0.003	1.093	22.336	20.435	0.548	0.153	7.45
2	29.055		29.05								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 5.124 PMF: 1 Analysis Hardness (mg/l): 242.51 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,386	
Total Antimony	0	0		0	1,100	1,100	2,033	
Total Arsenic	0	0		0	340	340	628	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	38,810	
Total Boron	0	0		0	8,100	8,100	14,970	
Total Cadmium	0	0		0	4.761	5.25	9.7	Chem Translator of 0.907 applied
Total Chromium (III)	0	0		0	1177.021	3,725	6,884	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	30.1	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	176	
Total Copper	0	0		0	30.964	32.3	59.6	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	40.7	

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	166.913	252	466	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	3.04	Chem Translator of 0.85 applied
Total Nickel	0	0		0	990.699	993	1,835	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	14.762	17.4	32.1	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	120	
Total Zinc	0	0		0	248.217	254	469	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	5.54	
Acrylonitrile	0	0		0	650	650	1,201	
Benzene	0	0		0	640	640	1,183	
Bromoform	0	0		0	1,800	1,800	3,327	
Carbon Tetrachloride	0	0		0	2,800	2,800	5,175	
Chlorobenzene	0	0		0	1,200	1,200	2,218	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	33,266	
Chloroform	0	0		0	1,900	1,900	3,511	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	27,721	
1,1-Dichloroethylene	0	0		0	7,500	7,500	13,861	
1,2-Dichloropropane	0	0		0	11,000	11,000	20,329	
1,3-Dichloropropylene	0	0		0	310	310	573	
Ethylbenzene	0	0		0	2,900	2,900	5,359	
Methyl Bromide	0	0		0	550	550	1,016	
Methyl Chloride	0	0		0	28,000	28,000	51,747	
Methylene Chloride	0	0		0	12,000	12,000	22,177	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,848	
Tetrachloroethylene	0	0		0	700	700	1,294	
Toluene	0	0		0	1,700	1,700	3,142	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	12,567	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	5,544	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	6,284	
Trichloroethylene	0	0		0	2,300	2,300	4,251	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,035	
2,4-Dichlorophenol	0	0		0	1,700	1,700	3,142	
2,4-Dimethylphenol	0	0		0	660	660	1,220	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	148	
2,4-Dinitrophenol	0	0		0	660	660	1,220	
2-Nitrophenol	0	0		0	8,000	8,000	14,785	
4-Nitrophenol	0	0		0	2,300	2,300	4,251	
p-Chloro-m-Cresol	0	0		0	160	160	296	
Pentachlorophenol	0	0		0	8.723	8.72	16.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	850	

Acenaphthene	0	0		0	83	83.0	153	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	554	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.92	
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	55,443	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	8,316	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	499	
Butyl Benzyl Phthalate	0	0		0	140	140	259	
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	1,515	
1,3-Dichlorobenzene	0	0		0	350	350	647	
1,4-Dichlorobenzene	0	0		0	730	730	1,349	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	7,392	
Dimethyl Phthalate	0	0		0	2,500	2,500	4,620	
Di-n-Butyl Phthalate	0	0		0	110	110	203	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	2,957	
2,6-Dinitrotoluene	0	0		0	990	990	1,830	
1,2-Diphenylhydrazine	0	0		0	15	15.0	27.7	
Fluoranthene	0	0		0	200	200	370	
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	18.5	
Hexachlorocyclopentadiene	0	0		0	5	5.0	9.24	
Hexachloroethane	0	0		0	60	60.0	111	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	18,481	
Naphthalene	0	0		0	140	140	259	
Nitrobenzene	0	0		0	4,000	4,000	7,392	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	31,418	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	554	
Phenanthrene	0	0		0	5	5.0	9.24	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	240	

☑ ***CFC*** CCT (min): 5.124 PMF: 1 Analysis Hardness (mg/l): 242.51 Analysis pH: 7.00

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

Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	407	
Total Arsenic	0	0		0	150	150	277	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	7,577	
Total Boron	0	0		0	1,600	1,600	2,957	
Total Cadmium	0	0		0	0.455	0.52	0.96	Chem Translator of 0.872 applied
Total Chromium (III)	0	0		0	153.106	178	329	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	19.2	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	35.1	
Total Copper	0	0		0	19.092	19.9	36.8	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	9.61	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	2,772	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	6.504	9.83	18.2	Chem Translator of 0.662 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.67	Chem Translator of 0.85 applied
Total Nickel	0	0		0	110.036	110	204	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	9.22	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	24.0	
Total Zinc	0	0		0	250.248	254	469	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	5.54	
Acrylonitrile	0	0		0	130	130	240	
Benzene	0	0		0	130	130	240	
Bromoform	0	0		0	370	370	684	
Carbon Tetrachloride	0	0		0	560	560	1,035	
Chlorobenzene	0	0		0	240	240	444	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	6,468	
Chloroform	0	0		0	390	390	721	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	5,729	
1,1-Dichloroethylene	0	0		0	1,500	1,500	2,772	
1,2-Dichloropropane	0	0		0	2,200	2,200	4,066	
1,3-Dichloropropylene	0	0		0	61	61.0	113	
Ethylbenzene	0	0		0	580	580	1,072	
Methyl Bromide	0	0		0	110	110	203	
Methyl Chloride	0	0		0	5,500	5,500	10,165	
Methylene Chloride	0	0		0	2,400	2,400	4,435	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	388	
Tetrachloroethylene	0	0		0	140	140	259	
Toluene	0	0		0	330	330	610	

1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	2,587	
1,1,1-Trichloroethane	0	0		0	610	610	1,127	
1,1,2-Trichloroethane	0	0		0	680	680	1,257	
Trichloroethylene	0	0		0	450	450	832	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	203	
2,4-Dichlorophenol	0	0		0	340	340	628	
2,4-Dimethylphenol	0	0		0	130	130	240	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	29.6	
2,4-Dinitrophenol	0	0		0	130	130	240	
2-Nitrophenol	0	0		0	1,600	1,600	2,957	
4-Nitrophenol	0	0		0	470	470	869	
p-Chloro-m-Cresol	0	0		0	500	500	924	
Pentachlorophenol	0	0		0	6.693	6.69	12.4	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	168	
Acenaphthene	0	0		0	17	17.0	31.4	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	109	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.18	
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	11,089	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,682	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	99.8	
Butyl Benzyl Phthalate	0	0		0	35	35.0	64.7	
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	296	
1,3-Dichlorobenzene	0	0		0	69	69.0	128	
1,4-Dichlorobenzene	0	0		0	150	150	277	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	1,478	
Dimethyl Phthalate	0	0		0	500	500	924	
Di-n-Butyl Phthalate	0	0		0	21	21.0	38.8	
2,4-Dinitrotoluene	0	0		0	320	320	591	
2,6-Dinitrotoluene	0	0		0	200	200	370	
1,2-Diphenylhydrazine	0	0		0	3	3.0	5.54	
Fluoranthene	0	0		0	40	40.0	73.9	
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	3.7	

Hexachlorocyclopentadiene	0	0		0	1	1.0	1.85	
Hexachloroethane	0	0		0	12	12.0	22.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	3,881	
Naphthalene	0	0		0	43	43.0	79.5	
Nitrobenzene	0	0		0	810	810	1,497	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	6,284	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	109	
Phenanthrene	0	0		0	1	1.0	1.85	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	48.1	

☑ ***THH*** CCT (min): 5.124 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	10.3	
Total Arsenic	0	0		0	10	10.0	18.5	
Total Barium	0	0		0	2,400	2,400	4,435	
Total Boron	0	0		0	3,100	3,100	5,729	
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	7.39	
Dissolved Iron	0	0		0	300	300	554	
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	1,848	
Total Mercury	0	0		0	0.050	0.05	0.092	
Total Nickel	0	0		0	610	610	1,127	
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	0.44	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	5.54	
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	185	
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	10.5	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	61.0	
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	126	
Methyl Bromide	0	0		0	100	100.0	185	
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	105	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	185	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	18,481	
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	55.4	
2,4-Dichlorophenol	0	0		0	10	10.0	18.5	
2,4-Dimethylphenol	0	0		0	100	100.0	185	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	3.7	
2,4-Dinitrophenol	0	0		0	10	10.0	18.5	
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	7,392	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	129	
Anthracene	0	0		0	300	300	554	
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	370	
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	0.18	
2-Chloronaphthalene	0	0		0	800	800	1,478	
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	1,848	
1,3-Dichlorobenzene	0	0		0	7	7.0	12.9	
1,4-Dichlorobenzene	0	0		0	300	300	554	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,109	
Dimethyl Phthalate	0	0		0	2,000	2,000	3,696	
Di-n-Butyl Phthalate	0	0		0	20	20.0	37.0	
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	37.0	
Fluorene	0	0		0	50	50.0	92.4	
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	7.39	
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	62.8	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	18.5	
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	37.0	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.13	

☑ ***CRL*** CCT (min): 7.450 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	0.42	
Benzene	0	0		0	0.58	0.58	4.01	
Bromoform	0	0		0	7	7.0	48.4	
Carbon Tetrachloride	0	0		0	0.4	0.4	2.77	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	5.54	
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	6.57	
1,2-Dichloroethane	0	0		0	9.9	9.9	68.5	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	6.23	
1,3-Dichloropropylene	0	0		0	0.27	0.27	1.87	
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	138	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	1.38	
Tetrachloroethylene	0	0		0	10	10.0	69.2	
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	3.81	
Trichloroethylene	0	0		0	0.6	0.6	4.15	
Vinyl Chloride	0	0		0	0.02	0.02	0.14	
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	0.21	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	10.4	
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	0.0007	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.007	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0007	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.007	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.069	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.21	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	2.21	
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	0.83	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0007	
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	0.35	
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	0.35	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.35	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.21	
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	0.0006	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.069	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.69	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.007	
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	0.005	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.035	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	22.8	

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	Report	Report	Report	Report	Report	µg/L	888	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	mg/L	0.037	CFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	Report	Report	Report	Report	Report	µg/L	7.39	THH	Discharge Conc > 25% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.3	AFC	Discharge Conc > 10% WQBEL (no RP)
Chloroform	0.11	0.17	10.5	16.4	26.3	µg/L	10.5	THH	Discharge Conc ≥ 50% WQBEL (RP)
Dichlorobromomethane	Report	Report	Report	Report	Report	µg/L	6.57	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	10.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	4,435	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,957	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	0.96	µg/L	Discharge Conc < TQL
Total Chromium (III)	329	µg/L	Discharge Conc < TQL
Hexavalent Chromium	19.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	35.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	554	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	2,772	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	18.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,848	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.092	µg/L	Discharge Conc < TQL
Total Nickel	204	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL

Total Selenium	9.22	µg/L	Discharge Conc < TQL
Total Silver	20.6	µg/L	Discharge Conc < TQL
Total Thallium	0.44	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.55	µg/L	Discharge Conc < TQL
Acrylonitrile	0.42	µg/L	Discharge Conc < TQL
Benzene	4.01	µg/L	Discharge Conc < TQL
Bromoform	48.4	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	2.77	µg/L	Discharge Conc < TQL
Chlorobenzene	185	µg/L	Discharge Conc < TQL
Chlorodibromomethane	5.54	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	6,468	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	68.5	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	61.0	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	6.23	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	1.87	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	126	µg/L	Discharge Conc < TQL
Methyl Bromide	185	µg/L	Discharge Conc < TQL
Methyl Chloride	10,165	µg/L	Discharge Conc < TQL
Methylene Chloride	138	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	1.38	µg/L	Discharge Conc < TQL
Tetrachloroethylene	69.2	µg/L	Discharge Conc ≤ 25% WQBEL
Toluene	105	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	185	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,127	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	3.81	µg/L	Discharge Conc < TQL
Trichloroethylene	4.15	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.14	µg/L	Discharge Conc < TQL
2-Chlorophenol	55.4	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	18.5	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	185	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	3.7	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	18.5	µg/L	Discharge Conc < TQL
2-Nitrophenol	2,957	µg/L	Discharge Conc < TQL
4-Nitrophenol	869	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	190	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.21	µg/L	Discharge Conc < TQL
Phenol	7,392	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	10.4	µg/L	Discharge Conc ≤ 25% WQBEL
Acenaphthene	31.4	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	554	µg/L	Discharge Conc < TQL

Benzidine	0.0007	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.007	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0007	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.007	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.069	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.21	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	370	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	2.21	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	99.8	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.18	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	1,478	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.83	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0007	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	296	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	12.9	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	277	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.35	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,109	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	924	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	37.0	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.35	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.35	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.21	µg/L	Discharge Conc < TQL
Fluoranthene	37.0	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	92.4	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0006	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.069	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.85	µg/L	Discharge Conc < TQL
Hexachloroethane	0.69	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.007	µg/L	Discharge Conc < TQL
Isophorone	62.8	µg/L	Discharge Conc < TQL
Naphthalene	79.5	µg/L	Discharge Conc < TQL
Nitrobenzene	18.5	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.005	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.035	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	22.8	µg/L	Discharge Conc < TQL
Phenanthrene	1.85	µg/L	Discharge Conc < TQL
Pyrene	37.0	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.13	µg/L	Discharge Conc < TQL

TMS results and input values were discussed with the SCRO Clean Water Program Manager, before Pre-Draft Survey was sent.

Re-running TMS with maximum effluent concentrations from past 3 years of on-going monitoring for Tetrachloroethylene and Dibromochloromethane:

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Boro of Sinking Spring STP** NPDES Permit No.: **PA0028649** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **domestic sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.25	304	7						

					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 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L	<										
	Chlorodibromomethane	µg/L		1.2									
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L											
	Dichlorobromomethane	µg/L											
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L											
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										

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

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***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
Chlorodibromomethane	5.54	µg/L	Discharge Conc ≤ 25% WQBEL
Tetrachloroethylene	N/A	N/A	Discharge Conc < TQL

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/8/2023 Control	TIWC
1	41	36
2	44	34
3	37	44
4	42	45
5	42	45
6	42	44
7	43	41
8	45	45
9	45	44
10	46	48
11		
12		
13		
14		
15		
Mean	42.700	42.600
Std Dev.	2.584	4.377
# Replicates	10	10
T-Test Result	6.9864	
Deg. of Freedom	14	
Critical T Value	0.8681	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/8/2023 Control	TWIC
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	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 6/27/2023 Control	TIWC
1	0.354	0.311
2	0.284	0.32
3	0.309	0.361
4	0.312	0.253
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.315	0.311
Std Dev.	0.029	0.045
# Replicates	4	4
T-Test Result	3.0347	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 6/27/2023 Control	TWIC
1	10	9
2	10	10
3	10	10
4	10	9
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	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/23/2022 Control	TIWC
1	9	8
2	7	8
3	9	8
4	9	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	8.500	8.250
Std Dev.	1.000	0.500
# Replicates	4	4
T-Test Result	4.2386	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/23/2022 Control	TIWC
1	0.344	0.319
2	0.245	0.281
3	0.295	0.308
4	0.322	0.481
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.302	0.347
Std Dev.	0.043	0.091
# Replicates	4	4
T-Test Result	2.5216	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/22/2022 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	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/22/2022 Control	TIWC
1	22	31
2	27	34
3	33	18
4	34	30
5	30	33
6	36	29
7	33	24
8	28	30
9	29	34
10	30	23
11		
12		
13		
14		
15		
Mean	30.200	28.600
Std Dev.	4.050	5.296
# Replicates	10	10
T-Test Result	3.0821	
Deg. of Freedom	15	
Critical T Value	0.8662	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 10/12/2021 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	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 10/12/2021 Control	TIWC
1	0.427	0.477
2	0.469	0.473
3	0.437	0.419
4	0.446	0.418
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.445	0.447
Std Dev.	0.018	0.033
# Replicates	4	4
T-Test Result	6.4085	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 10/12/2021 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	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 10/12/2021 Control	TIWC
1	36	36
2	34	36
3	30	34
4	37	38
5	30	38
6	26	33
7	28	30
8	26	32
9	31	32
10	28	34
11		
12		
13		
14		
15		
Mean	30.600	34.300
Std Dev.	3.921	2.669
# Replicates	10	10
T-Test Result	9.0375	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/18/2020 Control	TIWC
1	10	8
2	10	9
3	10	10
4	10	7
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	8.500
Std Dev.	0.000	1.291
# Replicates	4	4
T-Test Result	1.4391	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.54
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/18/2020 Control	TIWC
1	0.269	0.231
2	0.286	0.257
3	0.297	0.305
4	0.27	0.262
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.281	0.264
Std Dev.	0.013	0.031
# Replicates	4	4
T-Test Result	3.3052	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/18/2020 Control	TIWC	Test Completion Date: 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	0.000	0.000
Std Dev.	0.000	0.000		
# Replicates	10	10		
T-Test Result				
Deg. of Freedom				
Critical T Value				
Pass or Fail	PASS			

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.54
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Sinking Springs

Permit No.: PA0028649

Replicate No.	Test Completion Date: 8/18/2020 Control	TIWC	Test Completion Date: Control	TIWC
1	32	33		
2	28	29		
3	25	28		
4	33	34		
5	27	35		
6	33	25		
7	31	34		
8	28	32		
9	28	27		
10	33	34		
11				
12				
13				
14				
15				
Mean	29.800	31.100	0.000	0.000
Std Dev.	2.936	3.542		
# Replicates	10	10		
T-Test Result	6.6344			
Deg. of Freedom	15			
Critical T Value	0.8662			
Pass or Fail	PASS			