Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0030104**
Facility Type	**Municipal**	APS ID	**1064719**
Major / Minor	**Minor**	Authorization ID	**1398508**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Frenchcreek Township Venango County**	Facility Name	**Frenchcreek Township WWTP**
Applicant Address	4507 Georgetown Road Franklin, PA 16323-4733	Facility Address	226 Pine School Road Polk, PA 16342
Applicant Contact	Casey Davis	Facility Contact	William Whitman
Applicant Phone	(814) 437-6625	Facility Phone	(814) 432-2280
Client ID	74312	Site ID	680348
Ch 94 Load Status	Not Overloaded	Municipality	Polk Borough
Connection Status	No Limitations	County	Venango
Date Application Received	May 31, 2022	EPA Waived?	Yes
Date Application Accepted	June 15, 2022	If No, Reason	
Purpose of Application	Renewal of Existing NPDES Permit		

Summary of Review

Frenchcreek Township has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of a NPDES permit for the Frenchcreek WWTP. The permit was last reissued on November 22, 2017 with an effective date of December 1, 2017. The permit expired on November 30, 2022, but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted, and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Sludge use and disposal description and location(s): Not documented in the application (older permit form)

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.

Approve	Deny	Signatures	Date
x		*Aaron Baar* Aaron Baar / Project Manager	March 23, 2025
		Adam Olesnanik, P.E. / Environmental Engineer Manager	Okay to Draft JCD 4/3/2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.45
Latitude	41º 22' 32.40"	Longitude	-79º 55' 5.91"
Quad Name	Utica	Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Little Sandy Creek (CWF)	Stream Code	51391
NHD Com ID	100477527	RMI	1.02
Drainage Area	19.7 mi^2	Yield (cfs/mi^2)	0.0450
Q_{7-10} Flow (cfs)	0.887	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1065.8	Slope (ft/ft)	
Watershed No.	16-G	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Assumed, default value
Temperature (°C)	20.0	CWF, default value
Hardness (mg/L)	100	Assumed, default value
Other: Ammonia	0.1	Assumed, default value

Nearest Downstream Public Water Supply Intake		Aqua Pennsylvania, Inc. - Emlenton	
PWS Waters	Allegheny River	Flow at Intake (cfs)	1,376
PWS RMI	90.0	Distance from Outfall (mi)	32.44 (Approximate)

Drainage Area

The discharge is to Little Sandy Creek at RMI 1.02. A drainage area upstream of the discharge is determined to be 19.7 sq.mi. according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

According to StreamStats, the watershed has a Q_{7-10} of 0.887 cfs. This information was used to obtain a Low Flow Yield (LFY), a chronic 30-day (Q_{30-10}) and acute (Q_{1-10}) exposure stream flows for the discharge point as follows (Guidance No. 391-2000-023).

Q_{7-10} = 0.887 cfs
Q_{30-10} = 1.36 * 0.887 cfs = 1.2063 cfs
Q_{1-10} = 0.64 * 0.887 cfs = 0.5677 cfs
LFY = 0.887 cfs/1.36 mi^2 = 0.0450 cfs/mi^2

The LFY used in the previous renewal was 0.029 cfs/mi^2. The 0.045 cfs/mi^2 value used for this renewal compares favorably to the historical value that was based on 20 discharge measurements of Sugar Creek conducted between 1958-1969.

Little Sandy Creek

25 Pa Code §93.9 classifies the receiving water, Little Sandy Creek, with a Cold Water Fishery (CWF) Existing Use designation. Effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The discharge is in a stream segment listed as attaining uses.

Local Watershed Total Maximum Daily Loads (TMDLs)

According to PA's 2024 Integrated Water Quality Monitoring and Assessment Report, Little Sandy Creek in the vicinity of the proposed point of discharge is currently assessed for aquatic life; the most recently assessment found aquatic life in the waterway to be supported. The waterway is listed as Category 2 in the 2024 Integrated Report, indicating that some but not all uses are met. The assessment status of the remaining uses may be unknown because data are insufficient to assess the water, or it may be impaired. No TMDL has been developed for Little Sandy Creek to date, so no local watershed TMDL has been taken into consideration during this review.

Public Water Supply Intake

The nearest downstream public water supply intake is the Aqua Pennsylvania, Inc. – Emlenton intake, locate on the Allegheny River approximately 32 miles from the point of discharge. Considering the nature of the discharge and distance, the discharge is not expected to impact the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary				
Treatment Facility Name: Frenchcreek Township - WWTP				
WQM Permit No.	**Issuance Date**			
67103403 A-2	May 24, 2023			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	SBR	Ultraviolet	0.45
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.45	574	Not Overloaded	Anaerobic Digestion	Other WWTP

Frenchcreek Township operates and owns the wastewater treatment facility located at 226 Pines School Road (Polk Borough, Venango County). The facility currently serves Frenchcreek Township, Polk Borough and Polk Center. With an annual average design flow and hydraulic design capacity of 0.45 MGD, the treatment process received WQM approval to upgrade in 2023 as follows:

Influent PS → Fine Screen → Sequencing Batch Reactors (3) → UV disinfection → Post-Aeration → Outfall 001

The application does not document any wastewater treatment chemicals utilized at the facility. Aerobic digesters (2) and Reed Drying Beds (2) are described in the 2023 WQM amendment for solids handling.

Compliance History	
Summary of DMRs:	DMR results for the past year are presented below.
Summary of Inspections:	Since the last renewal of the facility's NPDES permit, the following inspections have been logged: June 21, 2017: A routine CEI was conducted by Melissa Carver. No violations were noted. Only observations are noted. March 12, 2020: A routine CEI was conducted by Melissa Carver. No violations were noted. The report states that, "The primary and secondary clarifiers were in poor condition with algae observed growing on the weirs in both tanks. Miscellaneous floatables were also observed in both tanks. See Pictures on Pages 2 and 3. The primary aeration tank contained a large wax/rag ball. This should be removed. Rags and other debris were also observed laying along the edges of the tanks. See Pictures on Page 2. The sludge drying beds appeared to be in poor condition. Small trees were observed growing in one while large weeds were observed in 2 of the 4 beds. The last bed appeared to have had sludge poured recently. See Pictures on Page 4. There is a large amount of moss growing around the edges of the trickling filters along with the seals in the center still leaking. See Pictures on Page 3. The path to the discharge point has not been maintained. This was noted in the inspection conducted on 6/21/2017. This should be kept clear and maintained." September 30, 2020: A routine CEI was conducted by Melissa Carver. One violation was assessed (25 Pa. Code 92a.41(a)(5): Failure to maintain permitted treatment units in operable condition). The report states that, "The facility is in poor condition. Rebar is showing in multiple areas of the plant due to crumbling concrete. The 4 sludge drying beds are unusable due to being covered with tall weeds and shrubs. The WQM Permit requires these to be maintained and kept in usable condition. The Department recommends cleaning the beds and bringing them back to usable condition. The secondary clarifiers are also in poor condition. Large amounts of algae were observed growing in the tanks. Large amounts of algae were also observed in the second dosing tank." March 24, 2021: A routine CEI was conducted by Melissa Carver. No violations were noted. The report states that, "An administrative review showed the facility had 5 Fecal Coliform Violations; 1 in 2019 and 4 in 2020. Lab results were viewed for the months of 01/2019, 05/2019, 10/2019, 06/2020, 07/2020, 11/2020, and 01/2021. Upon reviewing the lab results from G & C Coal Analysis (1341 Hoffman Hollow Road, Summerville, PA 15864, Lab ID: 33-00325, 814-849-2559), which is their accredited lab, it was observed that on the Chain of Custody forms the lab was not putting temperatures on the forms upon receival of the samples. Due to this, there is no way to determine whether the samples were received within holding temperatures, which is 3C-5C. Analytical Services is contracted out to conduct the sampling on TKN (51 ProChem Tech Dr, Brockway, PA 15824, Lab ID: 33-00411, 814-265-8749). The temperatures upon being received are recorded on the Chain of Custody forms. The Ultraviolet (UV) bulbs are cleaned and replaced as needed. There is no cleaning schedule. The Department recommends more frequent cleaning and a cleaning schedule to be utilized. Upon looking at the bench sheets and the logbook for when the bulbs were cleaned, a pattern appeared, which showed that Fecal Violations seemed to appear when the bulbs were working at less than 20%. The anaerobic digester has a capacity of 86,000 gallons. Sludge holding capacity was requested for the four (4) sludge drying beds but was never received. Sludge is removed from the drying beds and hauled away for land application by a local farmer, Mike Ohler, with the proper permit. However, it is believed that the spreader used for land application is also used at other sites, which could indicate cross contamination. The Department recommends washing the spreader at the field specified

	(which is adjacent to the plant and has access to a hose) before leaving the site. During a walk-through of the plant, the secondary clarifiers were observed to be overflowing the weirs, rendering them ineffective for treatment. See picture attached. The primary clarifiers were also in poor condition, with debris being observed by the skimmers. The Department recommends more frequent skimming and cleaning of the primary clarifiers. The aeration basins, primary clarifiers and dosing siphons are in poor condition. Rebar and crumbling cement were observed throughout the area. The seals around both trickling filters are not working as designed and water is leaking straight down and not getting the proper treatment. The bar screens at the headworks were accumulating debris. The Department recommends more frequent cleaning. Pictures are attached. Calibration range for the flow meter is unknown. The alarm system for the plant is not tested. The Department recommends setting up a testing schedule. There is no stand-by generator located at the plant in the event of a power outage. Temperatures in both the influent and effluent samplers is not regulated by a NIST thermometer. The Department recommends using NIST thermometers in both samplers." Non-compliance was noted (25 Pa. Code 92a.41(a)(10): Failure to maintain proper sample temperature. 25 Pa. Code 92a.41(a)(10): Failure to use an NIST thermometer. 25 Pa. Code 92a.41(a)(8): Failure to provide information or records required by the permit or otherwise needed to determine compliance.) September 29, 2021: A routine CEI was conducted by Melissa Carver. No violations were noted. The report states that, "Upon arrival at the plant, Brian and I observed that the sludge drying beds were covered in vegetation. After speaking with Mr. Whitman, he admitted that they haven't been cleaned since May. See picture at the end of this report. The department recommends cleaning the sludge drying beds as soon as possible. Rags were observed on the aeration tank weirs as well as laying outside the aeration tank. Cement around the aeration tanks has deteriorated further with more rebar showing. See picture attached. The Department recommends removal of rags and other debris as soon as possible. The primary clarifiers were in poor condition and haven't been skimmed. See picture attached. The Department recommends cleaning as soon as possible. Brian and I observed both trickling filters 1 and 2. The seals are broken on both at the center column. Vegetation was observed growing in the second trickling filter, which included tomato plants. The Department recommends removing the vegetation. The secondary clarifiers are in poor condition. Large amounts of algae were built up on the weirs. The Department recommends removing the algae. I was unable to verify if the discharge path has been kept clear" Non-compliance was noted (25 Pa. Code 92a.41(a)(5): Failure to maintain permitted treatment units in operable condition.) November 17, 2021: A routine CEI was conducted by Melissa Carver. No violations were noted. The report states that, "The Department recommends the primary clarifiers to be skimmed. The trickling filters are in poor condition with leaks around the seals on the center columns on both units. This does not use the units to their full capacity as the pressure has been reduced and on the second trickling filter does not allow for much movement. The sludge drying beds are in poor condition with vegetation covering 2 of the 4 drying beds and ponding occurring on one of the sludge beds. The Department recommends removing the vegetation to the sludge drying beds to allow for usage. The beds have not been cleaned since May 2021. See pictures at the end of the report. The plant is in poor condition, with concrete crumbling and rebar beginning to show in many areas. This facility is currently in the progress of upgrades. The Act 537 Plan has been approved and they are working with PennVEST to acquire funding for the project." Non-compliance was noted (25 Pa. Code 92a.41(a)(5): Failure to maintain permitted treatment units in operable condition Sludge drying beds inoperable due to heavy amount of vegetation.) January 24, 2023: A routine CEI was conducted by Melissa Carver. No violations were noted. The report states that, "A walk-through of the plant showed that the aeration tanks have lost more concrete, and more rebar was showing. The clarifiers were not in good condition. The secondary clarifier weirs were submerged and had large amounts of sludge/algae clinging to the weirs. The secondary clarifier also did not appear to be skimmed. See pictures. The primary clarifiers did not appear to have been skimmed that day

	and, as such, contained debris and grease. I did not observe the discharge point." Non-compliance was noted (25 Pa. Code 92a.41(a)(5): Failure to maintain permitted treatment units in operable condition Sludge drying beds inoperable due to heavy amount of vegetation.) December 13, 2023: A routine CEI was conducted by Melissa Carver. No violations were noted. The report states that, "the flights on the clarifiers were not in operation at the time. The operators stated that they only run them for a few hours each day. Water levels were over the weirs on the primary clarifiers. I was unable to view the secondary and tertiary clarifiers. Scum and duckweed were observed on the surface of the primary clarifiers. It also appeared that the tank had high levels of water as duckweed was observed approximately 10-12 inches above the current water levels." An administrative inspection was conducted via phone by Austen Randecker. No violations were noted.

Other Comments: As of March 23, 2025, there are no open violations associated with this facility.

Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
DO	XXX	XXX	6.0	XXX	XXX	XXX	1/day	Grab
CBOD5	37.5	56.3	XXX	10.0	15.0	20	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS	37.5	56.3	XXX	10.0	15.0	20	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Transmittance (%)	XXX	XXX	Report	Report	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Ammonia Nov 1 - Apr 30	16.9	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	5.6	XXX	XXX	1.5	XXX	3	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: Outfall 001

Compliance History

DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	0.290	0.347	0.275	0.244	0.204	0.217	0.204	0.223	0.255	0.496	0.382	0.293
Flow (MGD) Weekly Average	0.437	0.374	0.33	0.299	0.222	0.279	0.218	0.234	0.262	0.705	0.449	0.341
pH (S.U.) Minimum	6.90	6.93	7.01	6.36	6.56	6.71	6.67	6.65	6.81	6.68	6.85	6.88
pH (S.U.) Maximum	7.50	7.44	7.39	7.50	7.34	7.34	7.29	7.1	7.32	7.31	7.30	7.60
DO (mg/L) Minimum	8.22	7.3	6.69	6.39	6.02	6.03	6.02	6.04	6.20	8.26	8.23	9.15
CBOD5 (lbs/day) Average Monthly	22.8	17.5	< 5.3	7.5	6.7	5.9	6.6	9.5	14.3	< 9.8	13.9	9.6
CBOD5 (lbs/day) Weekly Average	28.6	28.2	8.3	9.5	8.1	7.0	7.0	12.8	26.9	18.9	15.6	11.4
CBOD5 (mg/L) Average Monthly	10.0	5.4	< 2.4	3.7	4.2	3.2	4.0	5.1	6.5	< 3.0	4.9	4.3
CBOD5 (mg/L) Weekly Average	13.4	11.3	3.5	5.4	5.2	4.1	4.2	7.0	12.8	4.9	5.9	4.7
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	236	206	216	187	168	341	130	325	252	202	323	310
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	429	364	380	245	221	780	181	547	327	273	470	427
BOD5 (mg/L) Raw Sewage Influent Average Monthly	99	52	98	89	105	193	78	171	112	71	107	137
BOD5 (mg/L) Raw Sewage Influent Weekly Average	166	81	158	112	132	461	109	278	143	121	179	177
TSS (lbs/day) Average Monthly	< 11.7	< 19.5	< 11.0	< 10.8	< 8.0	< 9.2	< 8.4	< 9.9	< 12.2	< 15.4	< 14.9	< 11.3
TSS (lbs/day) Raw Sewage Influent Average Monthly	184	375	256	229	187	234	193	531	509	284	452	226

TSS (lbs/day) Raw Sewage Influent Weekly Average	315	1173	416	348	300	357	250	820	1005	402	718	387
TSS (lbs/day) Weekly Average	< 22.2	27.1	< 13.6	< 12.6	< 9.3	< 9.8	< 8.8	11.1	13.7	< 19.1	< 20.3	< 12.1
TSS (mg/L) Average Monthly	< 5.0	< 5.4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.3	< 5.5	< 5.0	< 5.0	< 5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	78	89	113	107	114	127	116	283	226	102	149	101
TSS (mg/L) Raw Sewage Influent Weekly Average	122	260	158	138	162	192	146	445	440	178	275	172
TSS (mg/L) Weekly Average	5.0	6.0	< 5.0	< 5.0	< 5.0	< 5.0	5.0	6.0	6.0	< 5.0	< 5.0	< 5.0
Fecal Coliform (CFU/100 ml) Geometric Mean	140	< 4	< 4	< 5.0	< 2	< 2	13	5	2	< 7	< 1	< 2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	534	39	12	50	3	11	613	44	7	78	3	6
UV Transmittance (%) Minimum	16	15	19	20	19	20	20	21	19	10	18	19
UV Transmittance (%) Average Monthly	28.5	32	35.5	38	39.5	39.5	39	36	34.5	31.5	27.5	27.5
Total Nitrogen (mg/L) Average Quarterly		10.3			9.58			16.7			8.12	
Ammonia (lbs/day) Average Monthly	16.3	7.7	1.1	< 0.9	1.0	< 0.6	< 0.4	2.2	< 3.2	< 1.7	3.8	2.0
Ammonia (mg/L) Average Monthly	7.2	2.4	0.4	< 0.4	0.6	< 0.4	< 0.7	1.2	< 1.4	< 0.6	1.3	0.9
Total Phosphorus (mg/L) Average Quarterly		1.28			2.44			1.78			1.1	

Compliance History

Effluent Violations for Outfall 001, from: March 1, 2024 To: January 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Ammonia	01/31/25	Avg Mo	7.2	mg/L	4.5	mg/L

Other Comments: Stated cause for the ammonia violation was, “Due to the extreme lows and constant snow the trickling filters were rendered inoperable due to snow/ice build up. With some warmer weather we were able to chip ice off filter and get the filters working again.” NWRO Operations will determine if further action is needed or not.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.45
Latitude 41º 22' 32.39" **Longitude** -79º 55' 5.84"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Comments: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. The model was utilized using data derived by USGS StreamStats and the model output indicated that existing WQBELs for ammonia and CBOD5 are still protective of water quality

The model also determined that the facility's existing DO limits of 6 mg/L are still protective of water quality.

See attached for model inputs and outputs.

Toxics

A reasonable potential (RP) analysis was done for Copper, Lead and Zinc using the sampling results provided with the application. The Department's Toxics Management Spreadsheet (Version 1.4) was used to perform the RP analysis for these parameters at a pH of 7.0 and a discharge hardness of 100 mg/L. The sample sizes for all three parameters were less than 10, so the maximum reported effluent concentration was utilized in the analysis. The analysis indicates that limits for Total Copper are needed to be protective of water quality

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.077	0.12	0.02	0.032	0.051	mg/L	0.02	AFC	Discharge Conc ≥ 50% WQBEL (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 Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	0.17	mg/L	Discharge Conc ≤ 10% WQBEL

In conformity with the Department's SOP for Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers (SOP No. BCW-PMT-037), the Department proposes to establish limits in the draft permit due to effluent concentration determined for Total Copper equaling or exceeding 50% of the WQBEL (i.e., RP is demonstrated). The average monthly, maximum daily and instantaneous maximum (IMAX) limits for the permit, as recommended by the TMS v1,4 (above), are proposed.

Based on the sampling results provided with the application, the existing facility is already able to meet the proposed Total Copper limits.

In conformity with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (PA Doc No. 362-0400-001), Table 6-3 (plant design flow = 0.45 mgd,), weekly testing of Total Copper is proposed.

The full TMS report is presented at the end of this report.

E. Coli Monitoring

In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033) and as authorized by § 92a.61 of the PA Code, quarterly E. Coli monitoring has been proposed in this permit. The collection method will be via grab sample.

Best Professional Judgment (BPJ) Limitations

Ultraviolet Disinfection

The existing UV system is equipped with a transmittance sensor; therefore, UV transmittance is proposed to be continued as the monitoring parameter for the UV system.

Total Phosphorus & Total Nitrogen

DEP's SOP no. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, routine monitoring for Total Phosphorus and Total Nitrogen are recommended to be continued in this permit. Sampling frequency for is currently required 1/quarter, which is consistent with Table 6.3 in Guidance Doc. 362-0400-001. No change is proposed.

Additional Considerations

Flow Monitoring

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

Monitoring Frequency and Sample Type

Unless discussed otherwise above, the permit's monitoring frequency and sample type for all parameters will remain unchanged from the last permit renewal.

Antidegradation Requirements

All effluent limitations and monitoring requirements have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal unless noted otherwise above. This approach is in accordance with 40 CFR §122.44(l(1).

Annual Fees

An annual fee clause is continued in the permit in accordance with 25 Pa. Code § 92a.62. The facility covered by the permit is classified in the Minor Sewage Facility >=0.05 and <1 MGD fee category, which has an annual fee of $1,000.

Mass Loading Limitations

Unless stated otherwise in this fact sheet, mass loading effluent limits are calculated based on the formula: design flow (average annual) (MGD) x concentration limit (mg/L) at design flow x conversion factor (8.34).

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
DO	XXX	XXX	6.0	XXX	XXX	XXX	1/day	Grab
CBOD5	37.5	56.3	XXX	10.0	15.0	20	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS	37.5	56.3	XXX	10.0	15.0	20	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	Grab
UV Transmittance (%)	XXX	XXX	Report	Report	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Ammonia Nov 1 - Apr 30	16.9	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia May 1 - Oct 31	5.6	XXX	XXX	1.5	XXX	3	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Copper	0.077	0.12 Daily Max	XXX	0.02	0.032 Daily Max	0.051	1/week	24-Hr Composite

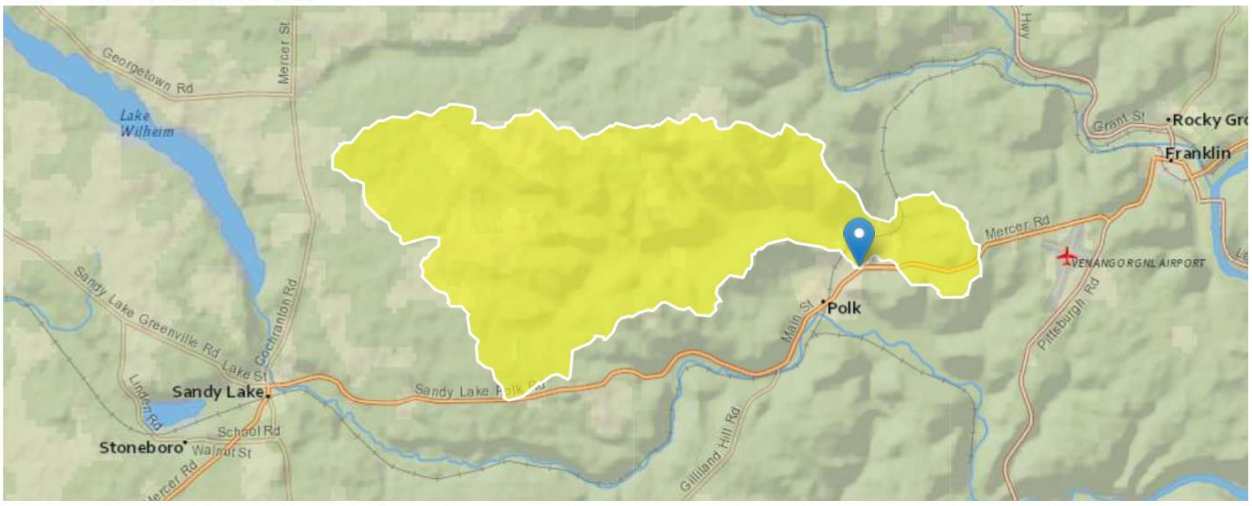
Compliance Sampling Location: Outfall 001

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 Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:


19949 - DISCHARGE POINT
Pump Station
Frenchcreek Twp
Polk
Valley Rd
Lakewood Cir
Polk Dam Lake
Murdoch Dr
Pine School Rd
Niles Rd
Wagner Dr
Pine Ridge Dr
62
Mercer Rd
Walapai Ln
Eagle Way
Main St
Main St Ext
Little Sandy Creek
Coal St
Service St
Lakewood Cir N
Lakewood Cir S
Short St
Waterloo Ave
Polk Cutoff

StreamStats Report

Region ID: PA
Workspace ID: PA20250323112223109000
Clicked Point (Latitude, Longitude): 41.37562, -79.91826
Time: 2025-03-23 07:22:49 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	19.7	square miles
ELEV	Mean Basin Elevation	1413	feet
PRECIP	Mean Annual Precipitation	43	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19.7	square miles	2.33	1720
ELEV	Mean Basin Elevation	1413	feet	898	2700
PRECIP	Mean Annual Precipitation	43	inches	38.7	47.9

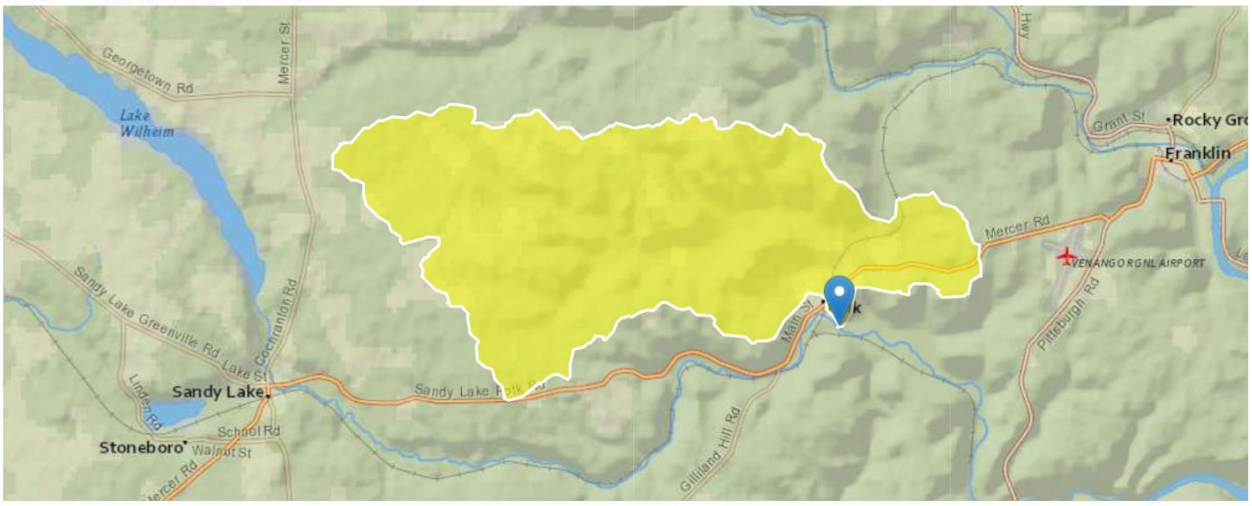
Low-Flow Statistics Flow Report [Low Flow Region 3]

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	1.95	ft^3/s	43	43
30 Day 2 Year Low Flow	2.78	ft^3/s	38	38
7 Day 10 Year Low Flow	0.887	ft^3/s	54	54
30 Day 10 Year Low Flow	1.24	ft^3/s	49	49

StreamStats Report

Region ID: PA
Workspace ID: PA20250323113408589000
Clicked Point (Latitude, Longitude): 41.36331, -79.92393
Time: 2025-03-23 07:34:37 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	21.9	square miles
ELEV	Mean Basin Elevation	1397	feet
PRECIP	Mean Annual Precipitation	43	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	21.9	square miles	2.33	1720
ELEV	Mean Basin Elevation	1397	feet	898	2700
PRECIP	Mean Annual Precipitation	43	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

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	2.16	ft^3/s	43	43
30 Day 2 Year Low Flow	3.06	ft^3/s	38	38
7 Day 10 Year Low Flow	0.985	ft^3/s	54	54
30 Day 10 Year Low Flow	1.38	ft^3/s	49	49


Spot Elevation
Click 'Activate' button and click on the map to retrieve elevation.
Deactivate
Pause Point Query
Point Query Status: Active
Error-Service unavailable.
Lat Lon Elev (ft) Elev (m)
1 41.37540 -79.91836 1065.80 324.86
2 41.36336 -79.92394 1040.62 317.18
#1:1065.802020037 4222 ft 324.86 m
#2:1040.618809635 1027 ft 317.18 m
Polk
Polk Dam Lake
Polk Borough Office
Little Sandy Creek
MERCER RD
SANDY CREEK RD
MAIN ST
ELM ST
RODGER LEE RD
WOOD ST
VALLEY RD
PINE RIDGE DR
HOVIS LN
CHURCH ST
Haggerty Hollow

	Jan-25	Dec-24	Nov-24	Oct-24	Sep-24	Aug-24	Jul-24	Jun-24	May-24	Apr-24	Mar-24	Feb-24
Min pH:	6.9	6.93	7.01	6.36	6.56	6.71	6.67	6.65	6.81	6.68	6.85	6.88
10^ -pH	1.26E-07	1.17E-07	9.77E-08	4.37E-07	2.75E-07	1.95E-07	2.14E-07	2.24E-07	1.55E-07	2.09E-07	1.41E-07	1.32E-07
Max pH:	7.5	7.44	7.39	7.5	7.34	7.34	7.29	7.1	7.32	7.31	7.3	7.6
10^ -pH	3.16E-08	3.63E-08	4.07E-08	3.16E-08	4.57E-08	4.57E-08	5.13E-08	7.94E-08	4.79E-08	4.9E-08	5.01E-08	2.51E-08
AVG:	7.88E-08	7.69E-08	6.92E-08	2.34E-07	1.61E-07	1.2E-07	1.33E-07	1.52E-07	1.01E-07	1.29E-07	9.57E-08	7.85E-08
AVG pH:	7.1	7.1	7.2	6.6	6.8	6.9	6.9	6.8	7.0	6.9	7.0	7.1

Mean pH: 7.0

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Frenchcreek STP** NPDES Permit No.: **PA0030104** Outfall No.: **001**

Evaluation Type: **Custom / Additives** 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
0.45	100	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
Total Copper	mg/L	<	0.018									
Total Lead	mg/L	<	0.001									
Total Zinc	mg/L	<	0.017									

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Frenchcreek STP, NPDES Permit No. PA0030104, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Little French Creek**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	051391	1.02	1095.8	19.7			Yes
End of Reach 1	051391	0.001	1040.6	21.9			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.02		0.887									100	7		
End of Reach 1	0.001		0.985												

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	1.02														
End of Reach 1	0.001														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Frenchcreek STP, NPDES Permit No. PA0030104, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 3.504 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	13.439	14.0	31.8	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	186	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	272	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 3.504 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	8.956	9.33	21.2	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	7.24	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	272	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 3.504 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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 3.314 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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	

Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.077	0.12	0.02	0.032	0.051	mg/L	0.02	AFC	Discharge Conc ≥ 50% WQBEL (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 Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	0.17	mg/L	Discharge Conc ≤ 10% WQBEL

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16G	51391	LITTLE SANDY CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.020	Frenchcreek STP	PA0030104	0.450	CBOD5	10		
				NH3-N	1.5	3	
				Dissolved Oxygen			6

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16G	51391	LITTLE SANDY CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.020	Frenchcreek STP	13.34	3	13.34	3	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.020	Frenchcreek STP	1.68	1.5	1.68	1.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.02	Frenchcreek STP	10	10	1.5	1.5	6	6	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16G	51391	LITTLE SANDY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.020	0.450	22.199	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
20.030	0.563	35.552	0.140
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.52	1.093	0.72	0.829
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.257	6.577	Tsivoglou	6
Reach Travel Time (days)			
0.444			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.044	5.23	0.69	7.17
0.089	4.96	0.66	7.13
0.133	4.70	0.64	7.12
0.178	4.45	0.62	7.13
0.222	4.22	0.60	7.16
0.266	4.00	0.57	7.21
0.311	3.79	0.55	7.26
0.355	3.59	0.53	7.31
0.400	3.40	0.51	7.37
0.444	3.23	0.50	7.42

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
16G	51391	LITTLE SANDY CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.020	0.89	0.00	0.89	.6962	0.00468	.563	20.03	35.55	0.14	0.444	22.20	7.00
Q1-10 Flow												
1.020	0.57	0.00	0.57	.6962	0.00468	NA	NA	NA	0.12	0.504	22.75	7.00
Q30-10 Flow												
1.020	1.21	0.00	1.21	.6962	0.00468	NA	NA	NA	0.16	0.400	21.83	7.00

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
16G	51391	LITTLE SANDY CREEK	**1.020**	1065.80	19.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.89	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Frenchcreek STP	PA0030104	0.4500	0.4500	0.4500	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	10.00	2.00	0.00	1.50
Dissolved Oxygen	6.00	8.24	0.00	0.00
NH3-N	1.50	0.10	0.00	0.70