

Application Type Renewal
Facility Type Non-Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0087785
APS ID 922901
Authorization ID 1423117

Applicant and Facility Information

Applicant Name	<u>White Deer Run Inc.</u>	Facility Name	<u>Cove Forge Behavioral Health Treatment Center</u>
Applicant Address	<u>202 Cove Forge Road</u> <u>Williamsburg, PA 16693-7138</u>	Facility Address	<u>202 Cove Forge Road</u> <u>Williamsburg, PA 16693-7138</u>
Applicant Contact	<u>Steve Bryan</u>	Facility Contact	<u>Steve Bryan</u>
Applicant Phone	<u>(814) 832-2131</u>	Facility Phone	<u>(814) 832-2131</u>
Client ID	<u>69649</u>	Site ID	<u>485041</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Woodbury Township</u>
Connection Status		County	<u>Blair</u>
Date Application Received	<u>December 12, 2022</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>January 13, 2023</u>	If No, Reason	
Purpose of Application	<u>This is an application for NPDES renewal.</u>		

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Cove Forge Behavioral Health Center STP located at 202 Cove Forge Road, Williamsburg, PA 16693 in Blair County, municipality of Woodbury. The existing permit became effective on May 1, 2018 and expires(d) on April 30, 2023. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on January 13, 2023.

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

The subject facility is a 0.0175 MGD average annual design flow treatment facility. The hydraulic design capacity is 0.035 MGD. The applicant anticipates proposed upgrades to the treatment facility in the next five years. The entire plant is to be upgraded. This would include new influent pumps, mechanically cleaned bar screen, CSBR, and UV disinfection system. The NPDES application has been processed as a Minor Sewage Facility (Level 1) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Blair County Commissioners and Woodbury Township and the notice was received by the parties on November 23, 2022 and November 29, 2022. A planning approval letter was not necessary as the facility is neither new or expanding.

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	January 27, 2023
X		Daniel W. Martin, P.E. / Environmental Engineer Manager Daniel W. Martin	February 22, 2023

Summary of Review

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be the Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are Juniata River and the Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for trout stocking fish (TSF) and migratory fish (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Frankstown Branch Juniata River is a Category 2 stream listed in the 2022 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life and fish consumption. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Due to the EPA triennial review, monitoring for E. Coli shall be at least 1x/yr.**
- **Monitoring for TRC shall cease once the construction is complete**
- **Upon commencement of construction completion, monitoring shall be required 1x/day for UV transmittance.**

Sludge use and disposal description and location(s): Sewage sludge disposed at Altoona STP in Blair County.

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

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

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

1.0 Applicant

1.1 General Information

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

Facility Name: Cove Forge Behavioral Health Center

NPDES Permit # PA0087785

Physical Address: 202 Cove Forge Road
Williamsburg, PA 16693

Mailing Address: 202 Cove Forge Road
Williamsburg, PA 16693

Contact: Steve Bryan
Facility Manager
(814) 832-2131
Steve.bryan@coveforgebehavioralhealth.com

Consultant: Leslie Postek
Environmental Engineer
Gwin, Dobson, and Foreman, Inc.
(814) 943-5214
lpstek@gdfengineers.com

1.2 Permit History

Description of Facility

The facility is undergoing a plant upgrade. The construction is to begin in April 2023 and finish at the end of October 2023.

Upon plant upgrade, the disinfection will change from chlorine to ultraviolet. The permit has overlapping sampling requirements for TRC and uv due to the uncertainty of when the construction will be completed. The facility should continue monitoring for either TRC or UV accordingly to when the plant will start-up.

Permit submittal included the following information.

- NPDES Application

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 202 Cove Forge Road, Williamsburg, PA 16693. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

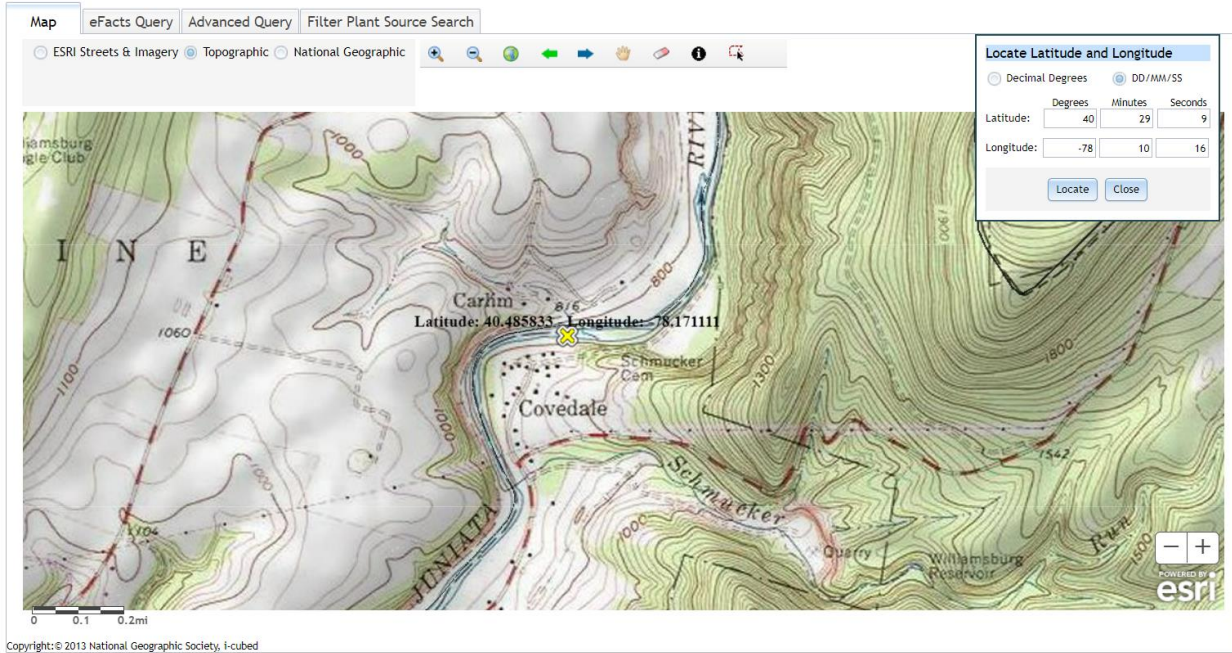
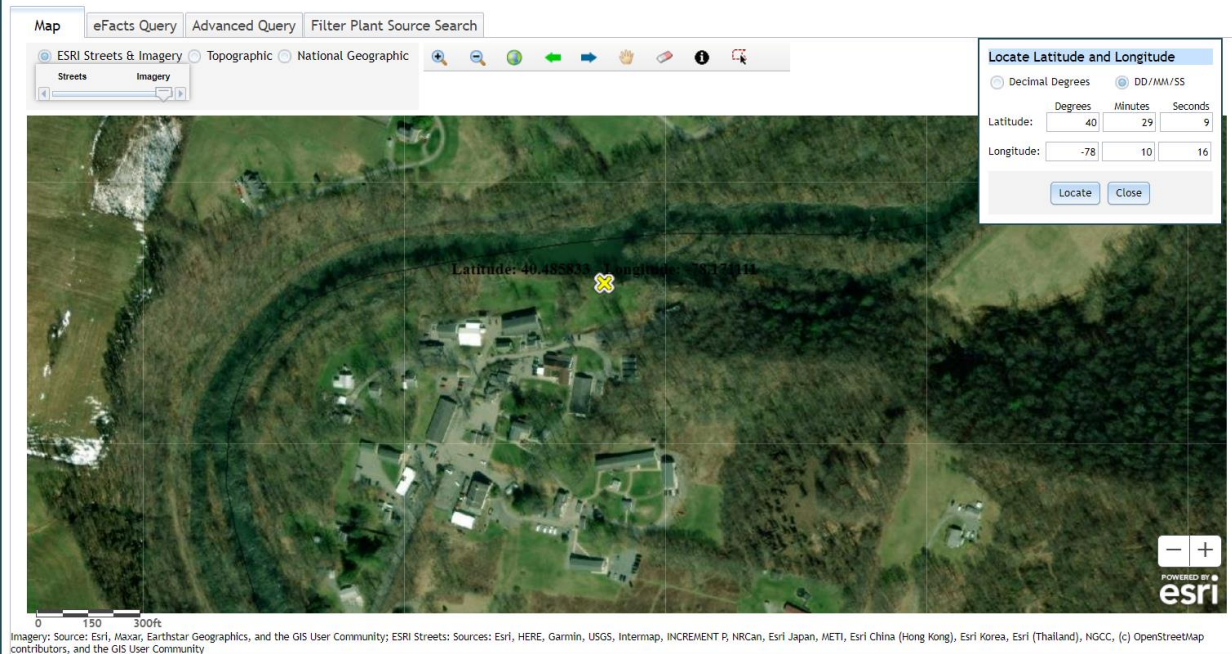


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

Approximately 20% of the wastewater contribution for the treatment plant originates from Woodbury Township. The remaining 80% of the wastewater contribution for the treatment plant originates from Cove Forge Behavioral Health.

The facility does not have any industrial/commercial users.

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

2.2 Description of Wastewater Treatment Process

Current Treatment Configuration

The subject facility treats wastewater using an equalization tank, an aeration tank, a clarifier, a chlorine contact tank prior to discharge through the outfall. The aeration tank, clarifier, chlorine contact tank, and the aerobic digester is contained in one long steel above ground package treatment vessel.

The subject facility is a 0.01 MGD average annual design flow facility.

Proposed Treatment Configuration

The proposed treatment upgrade shall include a CSBR and a UV disinfection system prior to discharge through the outfall. The consultant estimates that construction will commence in April 2023 and finish construction in October 2023.

The proposed flow rate shall be 0.0175 MGD average annual design flow facility.

The facility is currently being evaluated for flow, pH, dissolved oxygen, TRC, CBOD5, TSS, fecal coliform, nitrogen species, and phosphorus. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary (Proposed)				
Treatment Facility Name: Cove Forge Treatment Center - STP				
WQM Permit No.	Issuance Date			
0719404	10/28/2019			
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.0175
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.035	340	Not Overloaded	Holding Tank	Combination of methods

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.035</u>
Latitude	<u>40° 29' 9.00"</u>	Longitude	<u>-78° 10' 16.00"</u>
Wastewater Description:	<u>Sewage Effluent</u>		

The subject facility outfall is within the vicinity of another sewage/wastewater outfall. The upstream outfall is the Williamsburg STP (PA0021539) which is about 3 miles from the subject facility.

2.3.1 Operational Considerations- Chemical Additives

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

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

- Chlorine for disinfection (Existing treatment process)

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

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

I. A. For Outfall 001, Latitude 40° 29' 9.00", Longitude 78° 10' 16.00", River Mile Index 15.32, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **May 1, 2018** through **April 30, 2023**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	Calculation
Ammonia-Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite

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

at Outfall 001

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

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

The DEP inspector noted the following during the inspection.

06/24/2021:

- Steel influent piping rusted through and were replaced with flexible hoses.
- One influent grinder pump was replaced and one was repaired.
- One blower was replaced and the back-up generator was repaired.
- The air line to the sludge storage tank broke and the tank was no longer aerated. The decant arm for the tank was also not usable.
- The tank is nearly full and has a dark black crust on the surface and a strong septic odor. The operator reports that septic hauler empties out the tank twice a month due to the inability to decant clear liquid.
- The pH meter calibration log or a daily log of plant activities for all of 2021 was unable to be located. Information for past years was on site. The operator stated that he stopped operating the plant for about a month at the beginning of the year for medical reasons and neglected to keep a log book or record calibration information after returning to work at the plant. The back-up operator also failed to keep a record of pH meter calibrations.
- The facility is submitting semi-annual DMRs for nutrient testing but was not attaching the proper supplemental form. Each semi-annual DMR submittal should include a copy of the Annual Chesapeake Bay Supplemental form. This was also noted in the inspection report dated February 11, 2020.
- A WQM permit for a replacement treatment system was issued on October 28, 2019. No construction activity has taken place so far and the operator is unaware when work will begin.

10/01/2021:

- The aeration line to the sludge holding tank had been repaired and sludge is now receiving air from the blowers. The decant arm in the sludge holding tank was not repaired. Operators will be using a portable pump to decant clear water from the holding tank as necessary.
- A bench sheet was being used to record instrument calibration information. There was also a log book on site for recording daily activities at the plant and repair information.
- Semi-annual eDMRs for nutrient reporting do not have the proper supplemental report attached. Each semi-annual report should have a copy of the Annual Chesapeake Bay Spreadsheet supplemental form included as an attachment.

- The NPDES permit for the facility could not be located. There was a draft permit on site but not a final permit. A copy of the NPDES will be emailed to the operator.

03/31/2022:

- The treatment plant was discharging during the inspection and the effluent appeared brown and contained sewage solids. The effluent discolored the receiving stream just below the outfall pipe.
- A layer of sludge was observed on the surface of the chlorine contact tank.
- The feeder tubes for chlorine and dechlorination tablets were all empty. The feeder tubes had large openings at the bottom which was likely allowing partially dissolved tablets to escape.
- The flow meter totalizer is operational but the chart recorder is not. A note in the log book mentioned that a repairman was out on March 22, 2022 to look at the recorder.
- The logbook also noted that the blower repairs were made in February 2022.

04/01/2022:

- An inspection was conducted to check on the condition of the treatment system. Sewage sludge was in the effluent discharge.
- Settling in the secondary clarifier was improved and most sludge/scum was removed from the chlorine contact tank.
- Construction of a new treatment plant should begin this summer or fall

05/24/2022:

- A follow-up inspection was conducted to check plant operation and to sample the final effluent. The test results for effluent samples collected during the inspection on March 31, 2022 showed permit exceedances for CBOD and TSS. TRC result was over the permit limit. The TRC limit is 1.6 mg/l and DEP test results was 2.20 mg/l. The dechlorination tablet feeder had multiple tablets at the bottom of the feeder box but none in the tubes. The bottom of the feeder tubes was broken and do not allow tablets to be stacked up. Much of the effluent is flowing over the tablets and not making contact.
- The flow meter chart recorder was still out of service.
- Operators were not using am/pm or military time when recording plant monitoring information.

07/26/2022:

- A follow-up inspection was conducted to check on maintenance and operation violations related to the broken flow meter chart recorder and disinfection chemical feed equipment. The flow chart recorder was replaced with a new unit and calibrated on July 14, 2022. The recorder is in use and the 7-day chart is dated.
- Only one of the broken chlorine/dechlor tablet feeders was replaced. The facility stated that four tubes were ordered but only received one. The outfall and effluent appeared clear but the effluent had a chlorine odor. The field test result for TRC was 2.20 mg/l and exceeded the permit limit of 1.60 mg/l. The chlorinator contained dechlorination tablets and the dechlorinator contained chlorine tablets. The operator was informed of the issue.

09/27/2022:

- During DEP inspections on July 26, 2022 and September 26, 2022, the field test result for total residual chlorine (TRC) exceeded the permit limit. The effluent appeared clear with light solids. The field test result for TRC was 2.20 mg/L, which exceeds the permit IMAX limit of 1.60 mg/L. The chlorinator and

dechlorination systems were inspected. While attempting to observe the bottom of the dechlorination feeder tube the dechlor tablets fell out of the tube and onto the bottom of the tube holder. It appears the broken feeder tubes were not replaced as requested in the July 26, 2022 inspection report.

12/07/2022:

- The inspection was conducted as a follow up inspection to check on repair of the chlorination and dechlorination systems. The operator was not able to locate the correct size tablet feeders. The operator purchased larger tubes and modified the lids covering the units. Both tubes contained multiple tablets and the field test for TRC was within the permit limit.
- The outfall had a deposit of sewage solids just below the outfall pipe. The deposit was about five feet long and two feet wide. There was also paper debris on the wall below the pipe. There was no effluent discharge. When water started flowing over the clarifier trough weirs it looked clear. Soon afterwards solids were being stirred up in the chlorine contact tank and the discharge had a brown color. The DEP inspector collected samples for analysis. The samples contained sewage solids and had a strong sewage odor. All field test results were within the permit limits. The operator stated that he thought the plant was carrying too many solids or that solids had collected in the chlorine contact tank. The facility stated they had cleaned out the chlorine contact tank one week ago. The evening before the DEP inspection there was a steady rain overnight. It's likely that excessive sludge in the clarifier and/or the chlorine contact tank was washed out due to an increase in hydraulic flow through the plant. The operator called and reported that the effluent appeared clear when he arrived at the plant in the evening and stated that he pumped out the chlorine contact tank.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility is below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.0141 MGD in August 2022. The design capacity of the current treatment system is 0.025 MGD.

The off-site laboratory used for the analysis of the parameters was Fairway Laboratories, Inc. located at 2019 Ninth Avenue, Altoona, PA 16603.

DMR Data for Outfall 001 (from December 1, 2021 to November 30, 2022)

Parameter	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21
Flow (MGD) Average Monthly	0.011	0.011	0.0110	0.0141	0.0111	0.0099	0.0111	0.011	0.0102	0.0097	0.0096	0.0098
Flow (MGD) Daily Maximum	0.0148	0.0218	0.0175	0.10	0.017	0.0152	0.018	0.0187	0.0179	0.0117	0.0137	0.015
pH (S.U.) Instantaneous Minimum	6.54	7.25	7.26	7.2	7.31	7.02	7.03	6.39	7.01	7.1	6.79	6.77
pH (S.U.) Instantaneous Maximum	7.83	7.79	7.71	7.96	8.08	7.82	7.49	7.55	8.01	8.21	7.89	7.16
DO (mg/L) Instantaneous Minimum	6.85	7.71	6.97	6.8	6.44	5.91	6.19	6.7	6.63	8.0	6.5	7.11
TRC (mg/L) Average Monthly	0.21	0.25	0.2	0.1	0.22	0.02	0.19	0.04	0.02	0.02	0.2	0.21
TRC (mg/L) Instantaneous Maximum	0.56	0.73	0.45	0.48	0.72	0.34	0.31	0.39	0.54	0.31	0.34	0.36
CBOD5 (mg/L) Average Monthly	< 3.04	8.75	< 3.0	< 5.8	9.2	< 4.4	< 3.0	< 3.0	< 3.1	< 4.4	< 3.0	< 3.3
TSS (mg/L) Average Monthly	4.8	< 1.6	< 6.8	< 1.6	5.6	< 1.8	< 3.8	18.0	14.4	9.2	3.0	5.3
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	2	< 3.0	< 2.0	< 3.0	< 1.0	< 1.0	< 2.0	< 8.0	< 1.0	16	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	2.0	5.2	7.4	4.1	8.45	< 1.0	< 1.0	4	14	1.0	49	< 1.0
Nitrate-Nitrite (mg/L) Semi-Annual Average						6.5						26.24
Total Nitrogen (mg/L) Semi-Annual Average						13.72						29.04
Ammonia (mg/L) Semi-Annual Average						4.01						< 0.71
TKN (mg/L) Semi-Annual Average						7.57						2.83

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Total Phosphorus (mg/L) Semi-Annual Average						1.77						4.4
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3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

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

From the DMR data beginning in May 1, 2018 to January 19, 2023, the following were observed effluent non-compliances.

Summary of Non-Compliance with NPDES Effluent Limits									
Beginning May 1, 2018 and Ending January 19, 2023									
NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	FACILITY_COMMENTS
12/20/2018	Violation of permit condition	Effluent	Total Suspended Solids	34.4	>	30.0	mg/L	Average Monthly	
2/27/2019	Violation of permit condition	Effluent	Fecal Coliform	3133	>	2000	No./100 ml	Geometric Mean	
3/21/2019	Violation of permit condition	Effluent	Fecal Coliform	19608	>	10000	No./100 ml	Instantaneous Maximum	
3/11/2020	Violation of permit condition	Effluent	Carbonaceous Biochemical Oxygen Demand (CBOD5)	44.54	>	25.0	mg/L	Average Monthly	Influent Pumps Malfunction Corrective Action Was Taken Put New Contacts In Control Panel
10/22/2020	Sample type not in accordance with permit	Other Violations	Nitrate-Nitrite as N						

3.3.2 Non-Compliance- Enforcement Actions

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

Beginning in May 1, 2018 to January 19, 2023, the following table summarizes enforcement actions.

Summary of Enforcement Actions
Beginning May 1, 2018 and Ending January 19, 2023

ENF ID	ENF TYPE DESC	ENF CREATION DATE	EXECUTED DATE	INITIATED DATE	VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
396131	Notice of Violation	07/27/2021	07/26/2021		92A.41(A)5; 92A.41(A)8	Comply/Closed	10/01/2021
410107	Notice of Violation	12/07/2022	12/07/2022	12/01/2022	92A.75(A)	Administrative Close Out	12/12/2022
408677	Notice of Violation	10/26/2022	10/25/2022		92A.41(A)5; 92A.44		

3.4 Summary of Biosolids Disposal

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

2022			
Sewage Sludge / Biosolids Production Information			
Hauled Off-Site			
2022	Gallons	% Solids	Dry Tons
January	4,012	1.07	0.179
February	3,511	0.66	0.097
March	3,633	0.96	0.145
April	3,511	0.66	0.097
May	0	0	0
June	7,329	1.1	0.337
July	11,662	1.21	0.59
August	8,284	2.86	0.494
September	8,599	1.22	0.436
October	7,897	1.38	0.454
November	11,696	3.32	0.538
Notes:			
Sewage sludge disposed at Altoona STP in Blair County			

3.5 Open Violations

As of January 2023, the table summarizes the existing open violations.

Summary of Open Violations

VIOLATION DATE	VIOLATION CODE	VIOLATION
03/31/2022	92A.41(C)	NPDES - Discharge contained floating materials, scum, sheen, foam, oil, grease or substances that produced an observable change or resulted in deposits in receiving waters for NPDES permitted activities
03/31/2022	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
05/24/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit
07/26/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit
09/27/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit
09/27/2022	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
12/07/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be the Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are Juniata River and the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Mifflintown MA (PWS ID #434008) located approximately 80 miles downstream of the subject facility on the Juniata River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries. The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2022 Integrated List of All Waters (303d Listed Streams)

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

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

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

The receiving waters is listed in the 2022 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life and fish consumption. The designated use has been classified as protected waters for trout stocking fishes (TSF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

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

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

The closest WQN station to the subject facility is the Frankstown Branch Juniata station (WQN224). This WQN station is located approximately 1.5 miles upstream of the subject facility.

The closest gauge station to the subject facility is the Frankstown Branch Juniata River at Williamsburg, PA (USGS station number 1556000). This gauge station is located approximately 9 miles upstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 7.84 and the stream water temperature was estimated to be 22.0 C.

The hardness of the stream was estimated from the water quality network to be 135 mg/l CaCO₃.

The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data			
USGS Station Number	1556000		
Station Name	Frankstown Branch Juniata River at Williamsburg, PA		
Q710	47.8	ft ³ /sec	
Drainage Area (DA)	291	mi ²	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY = (47.8 ft ³ /sec / 291 mi ²)			
LFY =	0.1643	ft ³ /sec/mi ²	
The low flow at the subject site is based upon the DA of			
	349	mi ²	
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.1643 ft ³ /sec/mi ²)(349mi ²)			
Q710 =	57.327	ft ³ /sec	

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.035</u>
Latitude	<u>40° 29' 9.28"</u>	Longitude	<u>-78° 10' 15.99"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Sewage Effluent</u>			

Receiving Waters	<u>Frankstown Branch Juniata River (TSF)</u>	Stream Code	<u>16061</u>
NHD Com ID	<u>65607568</u>	RMI	<u>15.5</u>
Drainage Area	<u>349</u>	Yield (cfs/mi ²)	<u>0.1643</u>
Q ₇₋₁₀ Flow (cfs)	<u>57.3</u>	Q ₇₋₁₀ Basis	<u>StreamStats/stream gauge</u>
Elevation (ft)	<u>799</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>11-A</u>	Chapter 93 Class.	<u>TSF, MF</u>
Existing Use	<u>Same as Chapter 93 class</u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s) supports aquatic life and fish consumption</u>		
Cause(s) of Impairment	<u>Not appl.</u>		
Source(s) of Impairment	<u>Not appl.</u>		
TMDL Status	<u>Not appl.</u>	Name	<u></u>

Background/Ambient Data		Data Source	
pH (SU)	<u>7.84</u>	WQN224; median July to Sept	<u></u>
Temperature (°C)	<u>22</u>	WQN224; median July to Sept	<u></u>
Hardness (mg/L)	<u>135</u>	WQN224; historical median	<u></u>
Other:	<u></u>		<u></u>

Nearest Downstream Public Water Supply Intake	<u>Mifflintown MA</u>		
PWS Waters	<u>Juniata River</u>	Flow at Intake (cfs)	<u>0</u>
PWS RMI	<u>37</u>	Distance from Outfall (mi)	<u>80</u>

5.0: Overview of Presiding Water Quality Standards

5.1 General

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

5.2.1 Technology-Based Limitations

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

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

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

5.3 Water Quality-Based Limitations

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

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

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

General Data 1	(Modeling Point #1)	(Modeling Point #2)	(Modeling Point #3)	Units
Stream Code	16061	16061	16061	
River Mile Index	15.6	10.13	18.85	miles
Elevation	799	738	833	feet
Latitude	40.485833	40.531497	40.462736	
Longitude	-78.171111	-78.166304	-78.196646	
Drainage Area	349	362	291	sq miles
Reach Slope	Default	Default	Default	ft/ft
Low Flow Yield	0.1643	0.1643	0.1643	cfs/sq mile
Potable Water Supply Withdrawal	Default	Default	Default	mgd

5.3.1 Water Quality Modeling 7.0

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

WQM recommends effluent limits for DO, CBOD5, and NH₃-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

- (a) a minimum concentration for DO in the discharge as 30-day average;
- (b) a 30-day average concentration for CBOD5 in the discharge;
- (c) a 30-day average concentration for the NH₃-N in the discharge;
- (d) 24-hour average concentration for NH₃-N in the discharge.

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

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

5.3.2 Toxics Modeling

The facility is not subject to toxics modeling.

5.3.3 Whole Effluent Toxicity (WET)

The facility is not subject to WET.

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

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

Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

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

$$\text{TMDL} = \Sigma \text{WLAs} + \Sigma \text{LAs} + \text{MOS}$$

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

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was September 13, 2021.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or

aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30. For facilities that have received Cap Loads in any other form, the Cap Loads will be modified accordingly when the permits are renewed.

Offsets have been incorporated into Cap Loads in several permits issued to date. From this point forward, permits will be issued with the WLAs as Cap Loads and will identify Offsets separately to facilitate nutrient trading activities and compliance with the TMDL.

Based upon the supplement the subject facility has been categorized as a Sector C discharger. The supplement defines Sector C as a non-significant dischargers include sewage facilities (Phase 4 facilities: ≥ 0.2 MGD and < 0.4 MGD and Phase 5 facilities: > 0.002 MGD and < 0.2 MGD), small flow/single residence sewage treatment facilities (≤ 0.002 MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

At this time, there are approximately 850 Phase 4 and 5 sewage facilities, approximately 715 small flow sewage treatment facilities covered by a statewide General Permit, and approximately 300 non-significant IW facilities.

For Phase 5 sewage facilities with individual permits (average annual design flow on August 29, 2005 > 0.002 MGD and < 0.2 MGD), DEP will issue individual permits with monitoring and reporting for TN and TP throughout the permit term at a frequency no less than annually, unless 1) the facility has already conducted at least two years of nutrient monitoring and 2) a summary of the monitoring results are included in the next permit's fact sheet. If, however, Phase 5 facilities choose to expand, the renewed or amended permits will contain Cap Loads based on the lesser of a) existing TN/TP concentrations at current design average annual flow or b) 7,306 lbs/yr TN and 974 lbs/yr TP.

If no data are available to determine existing concentrations for expanding Phase 4 or 5 facilities, default concentrations of 25 mg/l TN and 4 mg/l TP may be used (these are the average estimated concentrations of all non-significant sewage facilities).

DEP will not issue permits to existing Phase 4 and 5 facilities containing Cap Loads unless it is done on a broad scale or unless the facilities are expanding.

For new Phase 4 and 5 sewage discharges, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance, with the exception of small flow and single residence facilities.

Due to the Chesapeake Bay WIP, this facility is subject to Sector C monitoring requirements. Monitoring shall be required 2x/yr for nitrogen and phosphorus.

5.5 Anti-Degradation Requirement

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

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

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies

and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

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

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.1.1 and 40 CFR 122.1.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

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

The reader will find in this section:

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

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection and (b) Nitrogen Species and Phosphorus..

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Cove Forge WWTP, PA0087785			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD.
TRC	TBEL	Monitoring:	The monitoring frequency shall be on a daily basis as a grab sample (Table 6-3).
		Effluent Limit:	The average monthly limit should not exceed 0.5 mg/l and/or 1.635 mg/l as an instantaneous maximum.
		Rationale:	Chlorine in both combined (chloramine) and free form is extremely toxic to freshwater fish and other forms of aquatic life (Implementation Guidance Total Residual Chlorine 1). The TRC effluent limitations to be imposed on a discharger shall be the more stringent of either the WQBEL or TBEL requirements and shall be expressed in the NPDES permit as an average monthly and instantaneous maximum effluent concentration (Implementation Guidance Total Residual Chlorine 4). Based on the stream flow rate (lowest 7-day flow rate in 10 years) and the design flow rate of the subject facility calculated by the TRC Evaluation worksheet, the TBEL is more stringent than the WQBEL. The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.48(b)(2)
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to recording the UV transmittance.
		Effluent Limit:	No effluent limit requirement.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/yr as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.0175 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021			

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus			
Cove Forge WWTP, PA0087785			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
Ammonia-Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.0175 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021			

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth. Based upon DEP policy directives issued on March 22, 2021 and in conjunction with EPA's 2017 Triennial Review, monitoring for E. Coli shall be required.

6.2 Summary of Changes From Existing Permit to Proposed Permit

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

- Due to the EPA triennial review, monitoring for E. Coli shall be at least 1x/yr.
- Monitoring for TRC shall cease once the construction is complete
- Upon commencement of construction completion, monitoring shall be required 1x/day for UV transmittance.

6.3.1 Summary of Proposed NPDES Effluent Limits

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

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

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

I. A. For Outfall 001, Latitude 40° 29' 9.00", Longitude 78° 10' 16.00", River Mile Index 15.6, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from Permit Effective Date through December 30, 2023.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	1.6 Daily Max	XXX	1/day	Grab

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

at Outfall 001

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

I. B. For Outfall 001, Latitude 40° 29' 9.00", Longitude 78° 10' 16.00", River Mile Index 15.6, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **November 1, 2023** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ultraviolet light transmittance (%)	XXX	XXX	XXX	XXX	Report	XXX	1/day	Recorded

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

at Outfall 001

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

I. C. For Outfall 001, Latitude 40° 29' 9.00", Longitude 78° 10' 16.00", River Mile Index 15.6, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF)

Type of Effluent: Sewage Effluent

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	Calculation

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	Average Weekly	Minimum	Average Monthly Report	Daily Maximum	Instant. Maximum		
Ammonia-Nitrogen	XXX	XXX	XXX	SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite

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

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Chlorine Minimization
- SBR Batch Discharge Condition
- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	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, 391-2000-019, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	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, 391-2000-022, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, rev 2/3/2022
<input type="checkbox"/>	Other: [redacted]

Attachment A

Stream Stats/Gauge Data

Table 1 13

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

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

Streamgauge number	Streamgauge name	Latitude	Longitude	Drainage area (mi ²)	Regulated ¹
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	Y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	Y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa.	41.118	-78.109	1,462	Y
01542810	Waldy Run near Emporium, Pa.	41.579	-78.293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	Y
01544500	Kettle Creek at Cross Fork, Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	Y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	Y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa.	40.890	-77.794	87.2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spring Creek at Milesburg, Pa.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	Y
01547700	Marsh Creek at Blanchard, Pa.	41.060	-77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	Y
01548500	Pine Creek at Cedar Run, Pa.	41.522	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pine Creek below Little Pine Creek near Waterville, Pa.	41.274	-77.324	944	Y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River at Williamsport, Pa.	41.236	-76.997	5,682	Y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41.325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa.	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	Y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	Y
01554500	Shamokin Creek near Shamokin, Pa.	40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek, Pa.	40.867	-77.048	301	N
01555500	East Mahantango Creek near Dalmatia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa.	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

26 Selected Streamflow Statistics for Streamgauge Locations in and near Pennsylvania

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

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

Streamgauge number	Period of record used in analysis ¹	Number of years used in analysis	1-day, 10-year (ft ³ /s)	7-day, 10-year (ft ³ /s)	7-day, 2-year (ft ³ /s)	30-day, 10-year (ft ³ /s)	30-day, 2-year (ft ³ /s)	90-day, 10-year (ft ³ /s)
01546000	1912–1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986–2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942–2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969–2008	40	102	105	128	111	133	117
01547200	1957–2008	52	99.4	101	132	106	142	115
01547500	² 1971–2008	38	28.2	109	151	131	172	153
01547500	³ 1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970–2008	39	12.1	13.6	28.2	17.3	36.4	23.8
01548005	² 1971–2000	25	142	151	206	178	241	223
01548005	³ 1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	26.0	32.9	78.0	46.4	106	89.8
01549500	1942–2008	67	.6	.8	2.5	1.4	3.9	2.6
01549700	1959–2008	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	² 1963–2008	46	520	578	1,020	678	1,330	919
01551500	³ 1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	² 1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	³ 1941–1966	26	562	619	880	690	1,090	881
01553700	1981–2008	28	9.1	10.9	15.0	12.6	17.1	15.2
01554000	² 1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	³ 1939–1979	41	1,560	1,630	2,870	1,880	3,620	2,570
01554500	1941–1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931–2008	78	33.5	37.6	58.8	43.4	69.6	54.6
01555500	1931–2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918–2008	91	43.3	47.8	66.0	55.1	75.0	63.7
01557500	1946–2008	63	2.8	3.2	6.3	4.2	8.1	5.8
01558000	1940–2008	69	56.3	59.0	79.8	65.7	86.2	73.7
01559000	1943–2008	66	104	177	249	198	279	227
01559500	1931–1958	28	9.3	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.1	.2	.1	.3	.2
01560000	1941–2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932–1958	27	.4	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	² 1974–2008	35	—	—	—	112	266	129
01563200	³ 1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	² 1974–2008	35	384	415	519	441	580	493
01563500	³ 1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

StreamStats Report

Region ID: PA
 Workspace ID: PA20230125194303267000
 Clicked Point (Latitude, Longitude): 40.48591, -78.17122
 Time: 2023-01-25 14:43:24 -0500



Cove Forge Behavioral Health PA0087785 Modeling Point #1 January 2023

Collapse All

> Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	33.65	percent
DRNAREA	Area that drains to a point on a stream	349	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.8	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2	miles per square mile

> Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (349 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	349	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	2	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.8	feet	3.32	5.65
CARBON	Percent Carbonate	33.65	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (349 square miles) Low Flow Region 2]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	65	ft ³ /s	38	38
30 Day 2 Year Low Flow	77.2	ft ³ /s	33	33
7 Day 10 Year Low Flow	43	ft ³ /s	51	51
30 Day 10 Year Low Flow	50.6	ft ³ /s	46	46
90 Day 10 Year Low Flow	62.4	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. (<http://pubs.usgs.gov/sir/2006/5130/>)

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Application Version: 4.12.0
 StreamStats Services Version: 1.2.22
 NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
 Workspace ID: PA20230125195255766000
 Clicked Point (Latitude, Longitude): 40.53127, -78.16620
 Time: 2023-01-25 14:53:16 -0500



Cove Forge Behavioral Health PA0087785 Modeling Point #2 January 2023

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	34.86	percent
DRNAREA	Area that drains to a point on a stream	362	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.9	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.98	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (362 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	362	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.98	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.9	feet	3.32	5.65
CARBON	Percent Carbonate	34.86	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (362 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	71.9	ft ³ /s	38	38
30 Day 2 Year Low Flow	84.3	ft ³ /s	33	33
7 Day 10 Year Low Flow	49.1	ft ³ /s	51	51
30 Day 10 Year Low Flow	56.9	ft ³ /s	46	46
90 Day 10 Year Low Flow	68.8	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. (<http://pubs.usgs.gov/sir/2006/5130/>)

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Application Version: 4.12.0
 StreamStats Services Version: 1.2.22
 NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
 Workspace ID: PA20230125195602956000
 Clicked Point (Latitude, Longitude): 40.46269, -78.19661
 Time: 2023-01-25 14:56:30 -0500



Cove Forge Behavioral Health PA0087785 Modeling Point #3 January 2023

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	26.54	percent
DRNAREA	Area that drains to a point on a stream	291	square miles
PRECIP	Mean Annual Precipitation	40	inches
ROCKDEP	Depth to rock	4.7	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.03	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (291 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	291	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	2.03	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.7	feet	3.32	5.65
CARBON	Percent Carbonate	26.54	percent	0	99

Low-Flow Statistics Flow Report [99.9 Percent (291 square miles) Low Flow Region 2]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	51.3	ft ³ /s	38	38
30 Day 2 Year Low Flow	62.3	ft ³ /s	33	33
7 Day 10 Year Low Flow	32.2	ft ³ /s	51	51
30 Day 10 Year Low Flow	38.8	ft ³ /s	46	46
90 Day 10 Year Low Flow	49.4	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. (<http://pubs.usgs.gov/sir/2006/5130/>)

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Application Version: 4.12.0
 StreamStats Services Version: 1.2.22
 NSS Services Version: 2.2.1

Attachment B

WQM 7.0 Modeling Output Values

WQM 7.0 Effluent Limits

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>					
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER					
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
18.850	WilliamsburgSTP	PA0021539-23	0.331	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5
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)
15.600	Cove Forge	PA0087785	0.018	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
18.850	WilliamsburgSTP	4.67	50	4.67	50	0	0
15.600	Cove Forge	4.48	50	4.64	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
18.850	WilliamsburgSTP	.87	25	.87	25	0	0
15.600	Cove Forge	.85	25	.87	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
18.85	WilliamsburgSTP	25	25	25	25	5	5	0	0
15.60	Cove Forge	25	25	25	25	5	5	0	0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
11A	16061	FRANKSTOWN BRANCH JUNIATA R	18.850	833.00	291.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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
WilliamsburgSTP	PA0021539-23	0.3310	0.3310	0.3310	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
11A	16061	FRANKSTOWN BRANCH JUNIATA R	15.600	799.00	349.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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
Cove Forge	PA0087785	0.0175	0.0175	0.0175	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
11A	16061	FRANKSTOWN BRANCH JUNIATA R	10.130	738.00	362.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data							
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00
Parameter Data							
Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)			
CBOD5	25.00	2.00	0.00	1.50			
Dissolved Oxygen	3.00	8.24	0.00	0.00			
NH3-N	25.00	0.00	0.00	0.70			

WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER		
<hr/>				
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>
18.850	0.331	22.032		7.814
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>
103.418	0.954	108.432		0.490
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>
2.24	0.133	0.26		0.818
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>
8.209	4.751	Tsivoglou		5
<u>Reach Travel Time (days)</u>				
0.405				
Subreach Results				
	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.041	2.23	0.26	7.94
	0.081	2.22	0.25	7.94
	0.122	2.20	0.24	7.94
	0.162	2.19	0.23	7.94
	0.203	2.18	0.22	7.94
	0.243	2.17	0.22	7.94
	0.284	2.15	0.21	7.94
	0.324	2.14	0.20	7.94
	0.365	2.13	0.20	7.94
	0.405	2.11	0.19	7.94
<hr/>				
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>
15.600	0.348	22.028		7.817
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>
113.226	0.976	115.961		0.524
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>
2.11	0.056	0.17		0.818
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>
7.990	5.412	Tsivoglou		5
<u>Reach Travel Time (days)</u>				
0.639				
Subreach Results				
	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.064	2.10	0.16	7.94
	0.128	2.09	0.15	7.94
	0.192	2.08	0.15	7.94
	0.255	2.07	0.14	7.94
	0.319	2.07	0.13	7.94
	0.383	2.06	0.12	7.94
	0.447	2.05	0.12	7.94
	0.511	2.04	0.11	7.94
	0.575	2.03	0.11	7.94
	0.639	2.03	0.10	7.94

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
11A		16061				FRANKSTOWN BRANCH JUNIATA RIVER						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
18.850	47.81	0.00	47.81	.5121	0.00198	.954	103.42	108.43	0.49	0.405	22.03	7.81
15.600	57.34	0.00	57.34	.5391	0.00211	.976	113.23	115.96	0.52	0.639	22.03	7.82
Q1-10 Flow												
18.850	43.51	0.00	43.51	.5121	0.00198	NA	NA	NA	0.46	0.427	22.03	7.81
15.600	52.18	0.00	52.18	.5391	0.00211	NA	NA	NA	0.50	0.673	22.03	7.81
Q30-10 Flow												
18.850	54.98	0.00	54.98	.5121	0.00198	NA	NA	NA	0.53	0.375	22.03	7.82
15.600	65.94	0.00	65.94	.5391	0.00211	NA	NA	NA	0.57	0.591	22.02	7.82

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.91	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.15	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

Attachment C

TRC Evaluation

Cove Forge WWTP
 PA0087785

January 2023

1A	B	C	D	E	F	G
2	TRC EVALUATION					
3	Input appropriate values in B4:B8 and E4:E7					
4	57.327	= Q stream (cfs)		0.5	= CV Daily	
5	0.025	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	= Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA_afc = 472.865		1.3.2.iii	WLA_cfc = 460.999
12	PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373		5.1c	LTAMULT_cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc = 176.201		5.1d	LTA_cfc = 268.003
14						
15	Source	Effluent Limit Calculations				
16	PENTOXSD TRG	5.1f	AML_MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			
	WLA_afc	$(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... \\ \dots + Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)$				
	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	$(.011/e(-k*CFC_tc)) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... \\ \dots + Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)$				
	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)				