pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0082201**
Facility Type	**Non-Municipal**	APS ID	**1010963**
Major / Minor	**Minor**	Authorization ID	**1420443**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**The York Water Co.**	Facility Name	**Letterkenny Township STP**
Applicant Address	130 East Market Street	Facility Address	10110 Cardinal Drive
	York, PA 17401-1219		Orrstown, PA 17244-9536
Applicant Contact	Mark Wheeler	Facility Contact	Vaughn Wenger
Applicant Phone	(717) 845-3601	Facility Phone	(717) 845-3601
Client ID	69800	Site ID	623
Ch 94 Load Status	Projected Hydraulic Overload	Municipality	Letterkenny Township
Connection Status	No Exceptions Allowed	County	Franklin
Date Application Received	December 1, 2022	EPA Waived?	Yes
Date Application Accepted	December 15, 2022	If No, Reason	

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

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	February 1, 2024
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for	February 1, 2024
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	February 1, 2024

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the The York Water Company- Letterkenny located at 10110 Cardinal Drive, Orrstown, PA 17244 in Franklin County, municipality of Letterkenny. The existing permit became effective on June 1, 2018 and expired on May 31, 2023. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on December 1, 2022.

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 0.042 MGD treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facility (Level 1) due to the type of sewage and the design flow rate for the facility. USPS tracking showed that the applicant disclosed the Act 14 requirement and the notice was received by the parties on November 22, 2022. A copy of the letter was not included in the NPDES renewal application. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be the Conodoguinet Creek. The sequence of receiving streams that the Conodoguinet Creek discharges into 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 warm water fishes (WWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Conodoguinet Creek 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 recreational uses. 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 shall be required for E. Coli.**

Sludge use and disposal description and location(s): Biosolids/sewage sludge disposed by Pecks Septic Service at South Middleton, Cumberland County under PAG-08-3532 for agricultural utilization

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:	The York Water Company- Letterkenny Township
NPDES Permit #	PA0082201
Physical Address:	10110 Cardinal Drive Orrstown, PA 17244
Mailing Address:	130 East Market Street York, PA 17401
Contact:	Mark Wheeler Chief Operating Officer markw@yorkwater.com Vaughn Wenger Wastewater Services Superintendent vaughnw@yorkwater.com
Consultant:	There was not a consultant utilized for this NPDES renewal.

1.2 Permit History

The WQM permit issued on September 8, 2021 permitted the relocation of the outfall. Aeration within the polishing tank produced water level disturbances resulting in inaccurate flow measurements. As a result, a new 4 ft.-diameter dedicated metering manhole was installed downstream of the UV disinfection system.

The outfall location was placed approximately 300 feet from the previous outfall. The discharge is to the Conodoguinet Creek.

Permit submittal included the following information.

- NPDES Application
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 10110 Cardinal Drive, Orrstown, PA 17244. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

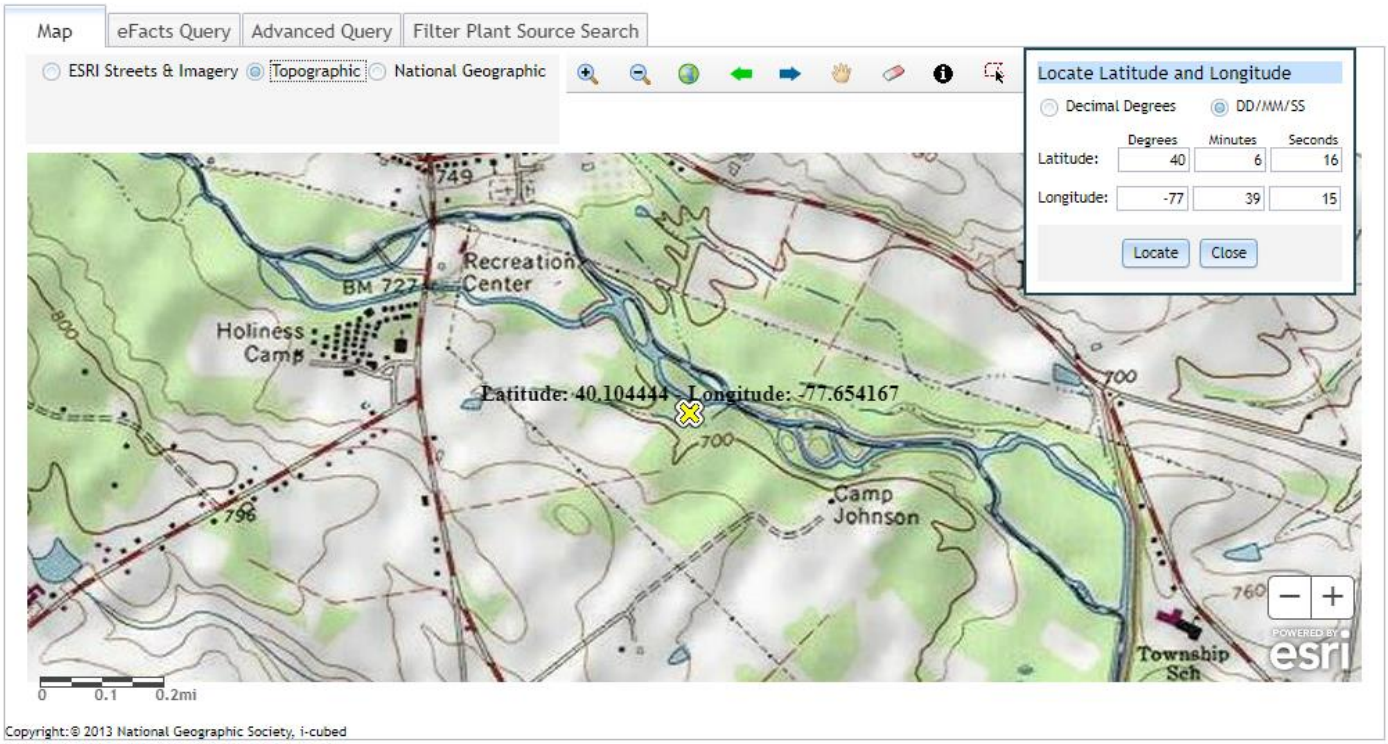
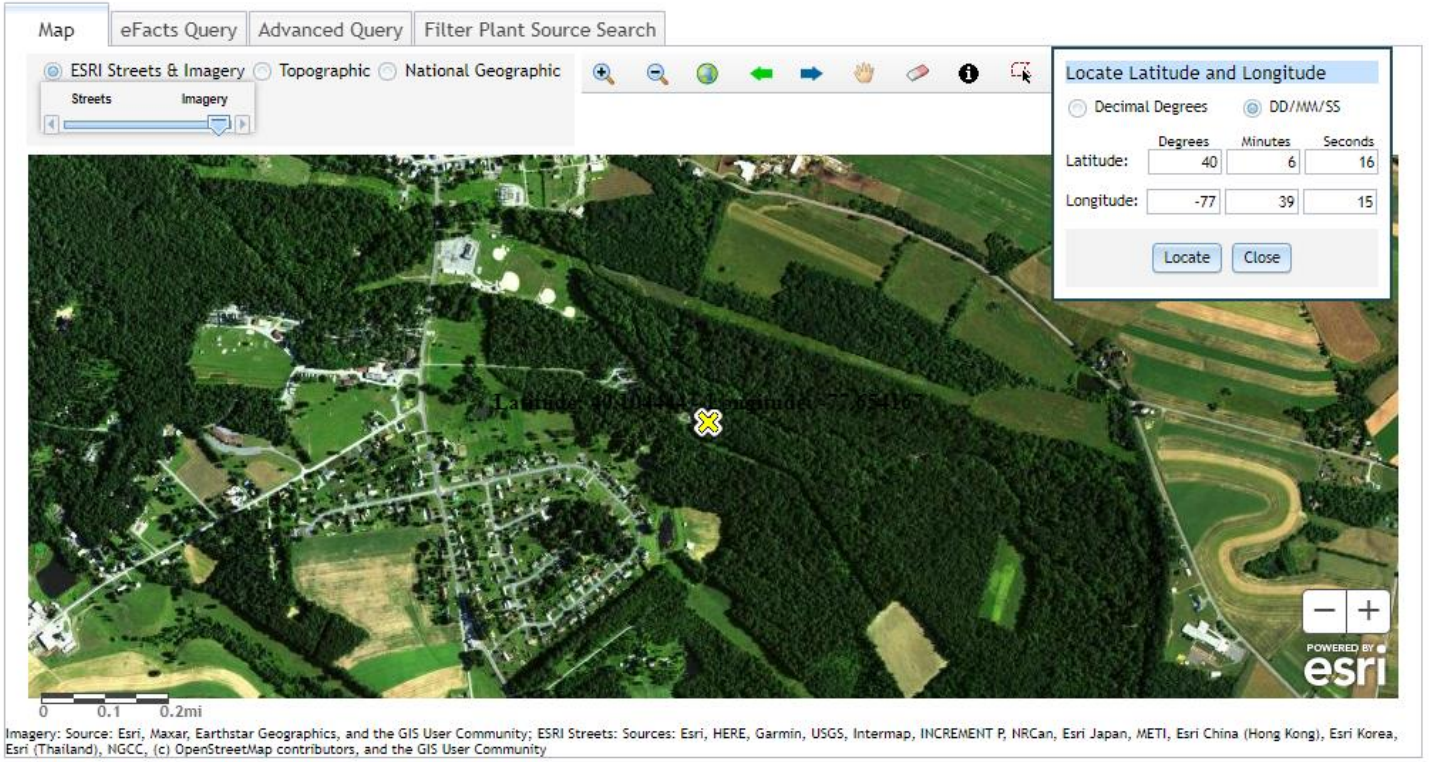


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The treatment plant receives 100% of their wastewater from Letterkenny Township.

2.2 Description of Wastewater Treatment Process

The subject facility is a 0.042 MGD design flow facility. The subject facility treats wastewater using a bar screen/comminutor, an equalization tank, an aeration tank, a clarifier, reaeration, and an UV system for disinfection prior to discharge through the outfall to Conodoguinet Creek. The facility is being evaluated for flow, pH, dissolved oxygen, UV, 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

Treatment Facility Name: Letterkenny Township STP

WQM Permit No.	Issuance Date
2895401 T-1	12/4/2020
2895401 A-1	05/18/2018
2895401 A-3	9/8/2021

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Phosphorus Reduction	Extended Aeration	Ultraviolet	0.042

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.042	82	Projected Hydraulic Overload		Combination of methods

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No. 001 **Design Flow (MGD)** .042
Latitude 40º 6' 16.00" **Longitude** -77º 39' 15.00"
Wastewater Description: Sewage Effluent

The subject facility outfall is within the vicinity of another sewage/wastewater outfall. An outfall upstream of the subject facility is the Roxbury Holiness Camp. Inc. (PA0082511) which is about 0.7 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.

- Aluminum sulfate for clarification and phosphorus removal
- Soda ash for alkalinity

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. B. For Outfall 001 , **Latitude** 40° 6' 16.00" , **Longitude** 77° 39' 15.00" , **River Mile Index** 82.15 , **Stream Code** 10194

Receiving Waters: Conodoguinet Creek

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **June 1, 2019** through **May 31, 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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Carbonaceous Biochemical Oxygen Demand (CBOD5)	8.8	14	XXX	25.0	40.0	50	2/month	24-Hr Composite
Total Suspended Solids	10.5	15.7	XXX	30.0	45.0	60	2/month	24-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
Ammonia-Nitrogen Nov 1 - Apr 30	8.4	XXX	XXX	24.0	XXX	XXX	2/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	2.8	XXX	XXX	8.0	XXX	16	2/month	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

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

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

I. C. For Outfall 001 , **Latitude** 40° 6' 16.00" , **Longitude** 77° 39' 15.00" , **River Mile Index** 82.15 , **Stream Code** 10194

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Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Nitrate-Nitrite as N	XXX	Report	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Nitrogen	XXX	Report	XXX	XXX	Report Daily Max	XXX	1/quarter	Calculation
Total Kjeldahl Nitrogen	XXX	Report	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

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

at discharge from facility (Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.)

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.

12/03/2019:

- Letterkenny Township signed a Consent Order and Agreement (COA) with the DEP on 9/10/18. The COA requires Letterkenny Township to relocate Outfall 001. A preliminary investigation report for the relocation project was received on 10/17/18 by the DEP; however, no WQM permit was received by DEP.
- The facility stated that the Township's effluent flow meter service technician collected flow measurements from the current location. The data was reported to the DEP on the monthly discharge monitoring report may not be accurate. A Water Quality Management amendment may be required to complete this work.

05/05/2022:

- The operator expressed recent issues with the clarifiers from fats, oils, and greases. The facility believes that the source of these issue may be from a local pizza restaurant since it has opened.
- NIST thermometers were not viewed in either sampler. The facility stated plans to add them soon. DEP recommends that NIST thermometers are added to each sampler.
- York Water Co replaced the equalization tank pump controls after taking ownership in Q4 of 2020. The equalization tank high level float alarm was activated during the inspection and the audible/visual alarms were observed to be operational.
- Several holes were observed in the bottom of Train #1's clarifier effluent trough. The operator stated that this occurred over the winter and the facility plans to make repairs dependent on temperature to properly weld. DEP recommended that this repair takes place as soon as possible and that DEP is informed of when this repair has taken place.
- A new final flow meter and totalizer were installed at the effluent UV discharge in January 2022 and calibrated in March 2022. A review of the April 2022 daily flows indicates that the monthly average flow exceeded the STP

hydraulic design of 0.042 MGD. Most daily flows exceed 0.042 MGD. York Water intended on investigating this issue and will also have the flow meter recalibrated to ensure accuracy of STP flow measurement

- The new STP Outfall 001 was observed.

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 exceeding the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.05 MGD. The design capacity of the treatment system is 0.042 MGD.

In December 2022 and January 2023, the facility had two consecutive months with flows exceeding the hydraulic capacity of the treatment plant. Flows in February 2023 was below hydraulic flow rate. In March 2023, the flows again exceeded the hydraulic capacity.

The facility may be considered hydraulic overloaded and should evaluate the plant for upgrade due to exceedance of hydraulic flow rate.

The off-site laboratory used for the analysis of the parameters was Laboratory, Analytical & Biological Services, Inc. located at 125 Enterprise Drive, New Oxford, PA 17350 and also at Franklin Analytical located at 419 Limekiln Drive, Chambersburg, PA 17201.

DMR Data for Outfall 001 (from December 1, 2022 to November 30, 2023)

Parameter	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22
Flow (MGD) Average Monthly	0.0325	0.0335	0.0321	0.0362	0.041	0.033	0.035	0.0378	0.0457	0.0391	0.05	0.0456
Flow (MGD) Daily Maximum	0.0644	0.0443	0.0521	0.0485	0.0734	0.045	0.051	0.064	0.0808	0.054	0.0806	0.0901
pH (S.U.) Daily Minimum	6.8	6.9	7.0	6.8	6.8	6.7	6.5	6.7	7.0	7.0	6.9	7.0
pH (S.U.) Daily Maximum	7.6	7.9	7.7	7.6	7.5	7.7	7.6	7.6	7.5	7.5	7.5	7.5
DO (mg/L) Daily Minimum	5.8	6.0	6.1	5.9	5.1	4.7	6.2	6.5	5.4	6.0	5.8	6.5
CBOD5 (lbs/day) Average Monthly	< 0.9	1.2	< 0.7	< 0.9	< 1.0	0.8	< 0.7	1.0	2.0	< 1.0	2.0	2.0
CBOD5 (lbs/day) Weekly Average	1.1	1.4	< 0.9	1.0	2.0	1.0	< 0.7	1.0	3.0	< 0.8	2.0	3.0
CBOD5 (mg/L) Average Monthly	< 3.3	3.6	< 2.0	< 3.0	< 3.0	4.0	< 2.0	5.0	7.0	< 4.0	4.0	5.0
CBOD5 (mg/L) Weekly Average	4.2	4.1	< 2.0	3.0	3.0	5.0	6.0	5.0	8.0	< 2.0	4.0	9.1
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	29	110	50	99.0	74.0	25	34	65	37	58	104	41
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	38	180	52	169.0	83.0	27	34	83	45	79	125	52
BOD5 (mg/L) Raw Sewage Influent Average Monthly	108	325	198	270.0	203	110	115	237	121	167	226	96
TSS (lbs/day) Average Monthly	3.2	2.1	3.0	4.0	5.0	2.0	2.0	5.0	5.0	2.0	4.0	9.0
TSS (lbs/day) Raw Sewage Influent Average Monthly	21	130	65	191.0	112	12	19	90	37	102	191	32
TSS (lbs/day) Raw Sewage Influent Daily Maximum	30	242	83	373.0	188	13	20	124	58	187	196	48
TSS (lbs/day) Weekly Average	5.8	2.1	6.0	7.0	6.0	3.0	2.0	6.0	5.0	1.0	6.0	13.0

TSS (mg/L) Average Monthly	12.5	7.0	11.0	11.0	12.0	9.0	6.0	17.0	16.0	7.0	8.0	20.0
TSS (mg/L) Raw Sewage Influent Average Monthly	80	380	284	500.0	354	54	64	332	118	292	406	74
TSS (mg/L) Weekly Average	23.0	7.0	18.0	18.0	12.0	13.0	7.0	22.0	16.0	3.0	11.0	27.0
Fecal Coliform (No./100 ml) Geometric Mean	2	59	29	< 11	7.0	1	4	4.0	< 2.0	55	< 3	12
Fecal Coliform (No./100 ml) Instantaneous Maximum	2	66	35	116	13.0	2	8	10.0	< 4.0	152	9	19
UV Intensity (mW/cm²) Daily Minimum	0.2	0.5	0.9	1.0	0.7	0.1	0.9	1.0	0.7	1.2	2.6	1.3
Nitrate-Nitrite (lbs/day) Daily Maximum			9.0			8.0			10.0			9.0
Nitrate-Nitrite (mg/L) Daily Maximum			29.0			28.0			20.0			31.0
Total Nitrogen (lbs/day) Daily Maximum			< 9.1			< 8.0			< 11			< 9
Total Nitrogen (mg/L) Daily Maximum			< 30.0			< 28.5			< 20.5			< 31.5
Ammonia (lbs/day) Average Monthly	< 0.03	< 0.03	< 0.03	< 0.04	< 0.05	0.6	< 0.03	< 0.03	< 0.03	< 0.03	< 0.4	0.5
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.13	< 0.13	2.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.7	1.08
TKN (lbs/day) Daily Maximum			< 0.1			< 0.1			< 0.3			< 0.1
TKN (mg/L) Daily Maximum			< 0.5			< 0.5			< 0.5			< 0.5
Total Phosphorus (lbs/day) Average Monthly	0.6	0.7	0.6	0.7	1.0	0.5	18.0	0.4	0.5	0.7	0.6	0.6
Total Phosphorus (mg/L) Average Monthly	2.4	2.1	2.1	2.1	2.5	2.1	2.0	1.6	1.8	1.9	1.3	1.3

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 June 1, 2018 to January 26, 2024, the table summarizes observed effluent non-compliances.

Summary of Non-Compliance with NPDES Effluent Limits
Beginning June 1, 2018 and Ending January 26, 2024

MONITORING_PERIOD_BEGIN_DATE	MONITORING_PERIOD_END_DATE	NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	DISCHARGE_COMMENTS	FACILITY_COMMENTS
6/1/2018	6/30/2018	7/9/2018	Violation of permit condition	Effluent	Fecal Coliform	300	>	200	No./100 ml	Geometric Mean		
9/1/2018	9/30/2018	10/17/2018	Violation of permit condition	Effluent	Dissolved Oxygen	3.0	<	5.0	mg/L	Daily Minimum		
9/1/2018	9/30/2018	10/17/2018	Violation of permit condition	Effluent	Fecal Coliform	1757	>	200	No./100 ml	Geometric Mean		
9/1/2018	9/30/2018	10/17/2018	Violation of permit condition	Effluent	Fecal Coliform	6300	>	1000	No./100 ml	Instantaneous Maximum		
6/1/2019	6/30/2019	7/10/2019	Violation of permit condition	Effluent	Dissolved Oxygen	4.8	<	5.0	mg/L	Daily Minimum		
10/1/2020	10/31/2020	11/23/2020	Sample collection less frequent than	Other Violations								
11/1/2020	11/30/2020	12/23/2020		Unauthorized Discharges							overload condition believed to have been due to faulty EQ pump and high MLSS in aeration tanks	
11/1/2020	11/30/2020	12/23/2020		Unauthorized Discharges							overload condition due to faulty equalization pumping equipment	
2/1/2021	2/28/2021	3/22/2021		Unauthorized Discharges							Clogged return line in clarifier resulting in clarifier burping solids.	
7/1/2021	7/31/2021	8/24/2021	Sample collection less frequent than	Other Violations	Total Phosphorus							
9/1/2021	9/30/2021	10/22/2021	Sample collection less frequent than	Other Violations								
10/1/2021	10/31/2021	11/15/2021		Unauthorized Discharges							sewer main blockage between manholes LT28 and LT27.	
7/1/2022	7/31/2022	8/25/2022	Sample collection less frequent than	Other Violations								
6/1/2023	6/30/2023	7/17/2023	Violation of permit condition	Effluent	Dissolved Oxygen	4.7	<	5.0	mg/L	Daily Minimum		On 6/21/23 the final effluent grab for dissolved oxygen was 4.7. It was discovered the airline supplying air to the final aeration tank was broken. Staff immediately replaced and repaired the airline resolving the issue.

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 June 1, 2018 to January 26, 2024, the table summarizes observed enforcement actions.

Summary of Enforcement Actions
Beginning June 1, 2018 and Ending January 26, 2024

ENF ID	ENF TYPE	ENF TYPE DESC	VIOLATIONS	ENF FINAL STATUS	ENF CLOSED DATE
392882	COA	Consent Order and Agreement	92A.41(A)5; 92A.41(C); CSL201; CSL611A	Comply/Closed	08/17/2022
367275	COA	Consent Order and Agreement	92A.41(C)	Superseded	03/01/2021
382749	NOV	Notice of Violation	92A.41(A)5; CSL611A	Comply/Closed	12/01/2020
392073	NOV	Notice of Violation	CSL201	Comply/Closed	03/01/2021

3.4 Summary of Biosolids Disposal

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

2023			
Sewage Sludge / Biosolids Production Information			
Hauled Off-Site			
2023	Gallons	% Solids	Dry Tons
January			
February	8,000	0.75	0.25
March	6,000	0.75	0.188
April			
May	6,000	0.75	0.188
June	7,000	0.75	0.219
July			
August	7,000	1	0.292
September	5,000	1	0.209
October			
November			
Notes:			
Biosolids/sewage sludge disposed by Pecks Septic Service at South Middleton, Cumberland County under PAG-08-3532 for agricultural utilization			

3.5 Open Violations

As of January 2024, the table summarizes open violations. The final executed NPDES maybe withheld until the open violations have been resolved.

Summary of Open Violations

INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
3666955	8169876	12/13/2023	127.402	Construction, Modification, Reactivation and Operation of Sources, Operating Permit Requirements, General provisions. Violation for operating an air contaminant source(s) or cleaning device without an operating permit.
3666955	8169877	12/13/2023	127.443	Construction, Modification, Reactivation and Operation of Sources, Operating Permit Requirements. Failure to obtain an operating permit before construction, modification, or reactivation of a new source or control device.
3418993	967146	08/20/2022	91.33(A)	CSL - Failure to immediately report to DEP a pollution incident
3418993	967147	08/20/2022	CSL401	CSL - Unauthorized, unpermitted discharge of polluting substances to waters of the Commonwealth resulting in pollution
3601112	8155603	08/16/2023	D2E	FAILURE TO SUBMIT OR REVISE A MONITORING PLAN FOR THE LEAD AND COPPER RULE
3601112	8155604	08/16/2023	D2G	FAILURE TO SUBMIT OR REVISE A COMPREHENSIVE MONITORING PLAN
3601112	8155605	08/16/2023	D2I	FAILURE TO COMPLY WITH UNITERRUPTED SYSTEM SERVICE PLAN REQUIREMENTS
3601112	8155606	08/16/2023	C4A	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM
3601112	8155607	08/16/2023	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
3601112	8155608	08/16/2023	D2C	FAILURE TO SUBMIT OR REVISE A MONITORING PLAN FOR THE STAGE 2 DISINFECTION BYPRODUCTS RULE
3601112	8155609	08/16/2023	D6E	FAILURE OF A CWS TO DEVELOP AND/OR UPDATE AN EMERGENCY RESPONSE PLAN
3601112	8155610	08/16/2023	D2A	FAILURE TO SUBMIT OR REVISE A MONITORING PLAN FOR THE TOTAL COLIFORM RULE
3601112	8155611	08/16/2023	D2B	FAILURE TO SUBMIT OR REVISE A MONITORING PLAN FOR THE DISINFECTION REQUIREMENTS RULE
3539563	991729	04/17/2023	B6A	OTHER VIOLATIONS DEEMED TO BE SIGNIFICANT DEFICIENCIES
3502361	984739	02/10/2023	02	EXCEEDED THE CHEMICAL AVERAGE MAXIMUM CONTAMINANT LEVEL
3542426	992289	04/24/2023	02	EXCEEDED THE CHEMICAL AVERAGE MAXIMUM CONTAMINANT LEVEL
3604333	8156356	08/23/2023	02	EXCEEDED THE CHEMICAL AVERAGE MAXIMUM CONTAMINANT LEVEL
3646212	8165460	11/16/2023	27	DISINFECTION/DISINFECTION BYPRODUCTS MONITORING/REPORTING VIOLATION
3646226	8165462	11/16/2023	27	DISINFECTION/DISINFECTION BYPRODUCTS MONITORING/REPORTING VIOLATION
3646228	8165463	11/16/2023	27	DISINFECTION/DISINFECTION BYPRODUCTS MONITORING/REPORTING VIOLATION

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be the Conodoguinet Creek. The sequence of receiving streams that the Conodoguinet Creek discharges into 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 Carlisle Water Treatment Plant (PWS ID #7210002) located approximately 47 miles downstream of the subject facility on the Conodoguinet Creek. 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 recreational uses. The designated use has been classified as protected waters for warm water fishes (WWF) 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.

For WQM modeling, default values for pH and stream water temperature data were utilized. pH was estimated to be 7.0 and the stream water temperature was estimated to be 25 C.

DEP previously used 50% of the actual stream flow due to the fact that the discharge is to Conodoguinet Creek where the stream is split into two (2) channels. First, the actual percent split of these channels is unknown and "first" confluence of these channels is about 300 feet downstream from the point of discharge (i.e., these channels join and then the stream is split once again within one river mile stretch). DEP has utilized StreamStats for determining low flow. (Courtesy Fact Sheet January 2018)

The low flow yield is 0.0693 $ft^3/s/mi^2$ and the Q710 is 2.96 ft^3/s for the subject facility.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.042
Latitude	40º 6' 16.87"	Longitude	-77º 39' 15.01"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Conodoguinet Creek (WWF)	Stream Code	10811
NHD Com ID	56409317	RMI	83.6
Drainage Area	42.7	Yield (cfs/mi^2)	0.0693
Q_{7-10} Flow (cfs)	2.96	Q_{7-10} Basis	StreamStats
Elevation (ft)	694	Slope (ft/ft)	
Watershed No.	7-B	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining uses support aquatic life and recreational uses.		
Cause(s) of Impairment	Not applicable		
Source(s) of Impairment	Not applicable		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	7	Default value
Temperature (°C)	25	Default value
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Carlisle Water Treatment Plant		
PWS Waters	Conodoguinet Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	47

5.0: Overview of Presiding Water Quality Standards

5.1 General

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

5.2.1 Technology-Based Limitations

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

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

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

5.2.2 Mass Based Limits

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

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

5.3 Water Quality-Based Limitations

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

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

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

General Data 1	*(Modeling Point #1)*	*(Modeling Point #2)*	*(Modeling Point #3)*	*Units*
Stream Code	10811	10811	10811	
River Mile Index	83.6	82.17	84.32	miles
Elevation	694	650	729	feet
Latitude	40.10455	40.0924	40.108325	
Longitude	-77.65242	-77.64701	-77.664642	
Drainage Area	42.7	43.7	42.1	sq miles
Low Flow Yield	0.0693	0.0693	0.0693	cfs/sq mile

5.3.1 Water Quality Modeling 7.0

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

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

Four types of limits may be recommended. The limits are

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

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

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

5.3.2 Toxics Modeling

The 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:

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

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

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.4.1.2 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 for nitrogen species and phosphorus shall be at least 1x/quarter.

5.5 Anti-Degradation Requirement

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

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

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

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

5.6 Anti-Backsliding

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

6.0 NPDES Parameter Details

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

The reader will find in this section:

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

6.1 Recommended Monitoring Requirements and Effluent Limitations

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

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection			
The York Water Company - Letterkenny; PA0082201			
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 a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 8.8 lbs/day and 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 10.5 lbs/day and 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1x/day. The facility will be required to record the UV intensity.
		Effluent Limit:	No effluent requirements
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 2x/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/year 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 0.042 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

The York Water Company - Letterkenny; PA0082201

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Anti-Backsliding	Monitoring:	The monitoring frequency shall be 2x/month as a 24-hr composite sample
		Effluent Limit:	During the months of May 1 to October 31, the effluent limit shall not exceed 2.8 lbs/day and 8.0 mg/l as an average monthly. During the months of November 1 to April 30, the effluent limit shall not exceed 8.4 lbs/day and 24.0 mg/l as an average monthly.
		Rationale:	Due to anti-backsliding regulations, the current permit shall continue to the proposed permit.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/quarter as a 24-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 1x/quarter.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/quarter as a 24-hr 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 1x/quarter as a 24-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 1x/quarter.
Total Phosphorus	Anti-backsliding	Monitoring:	The monitoring frequency shall be 2x/month as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Lower reaches of the Conodoguinet Creek had limts to reduce dissolved oxygen and algae isues in the 1980s. Phosphrus monitoring was included before 1987. Due to anti-backsliding, monitoring shall continue to the proposed permit

Notes:

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

2 Monitoring frequency based on flow rate of 0.042 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 shall be required for E. Coli.**

6.3.1 Summary of Proposed NPDES Effluent Limits

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

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

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

I. A. For Outfall 001 , **Latitude** 40° 6' 16.00" , **Longitude** 77° 39' 15.00" , **River Mile Index** _____ , **Stream Code** _____

Receiving Waters: Conodoguinet Creek (WWF)

Type of Effluent: Sewage Effluent

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	8.8	14	XXX	25.0	40.0	50	2/month	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Suspended Solids	10.5	15.7	XXX	30.0	45.0	60	2/month	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-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 Daily Max	XXX	1/year	Grab

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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite as N	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	8.4	XXX	XXX	24.0	XXX	XXX	2/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	2.8	XXX	XXX	8.0	XXX	16	2/month	24-Hr Composite
Total Kjeldahl Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

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

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems
- Facility should investigate possibility of hydraulic overloading at plant

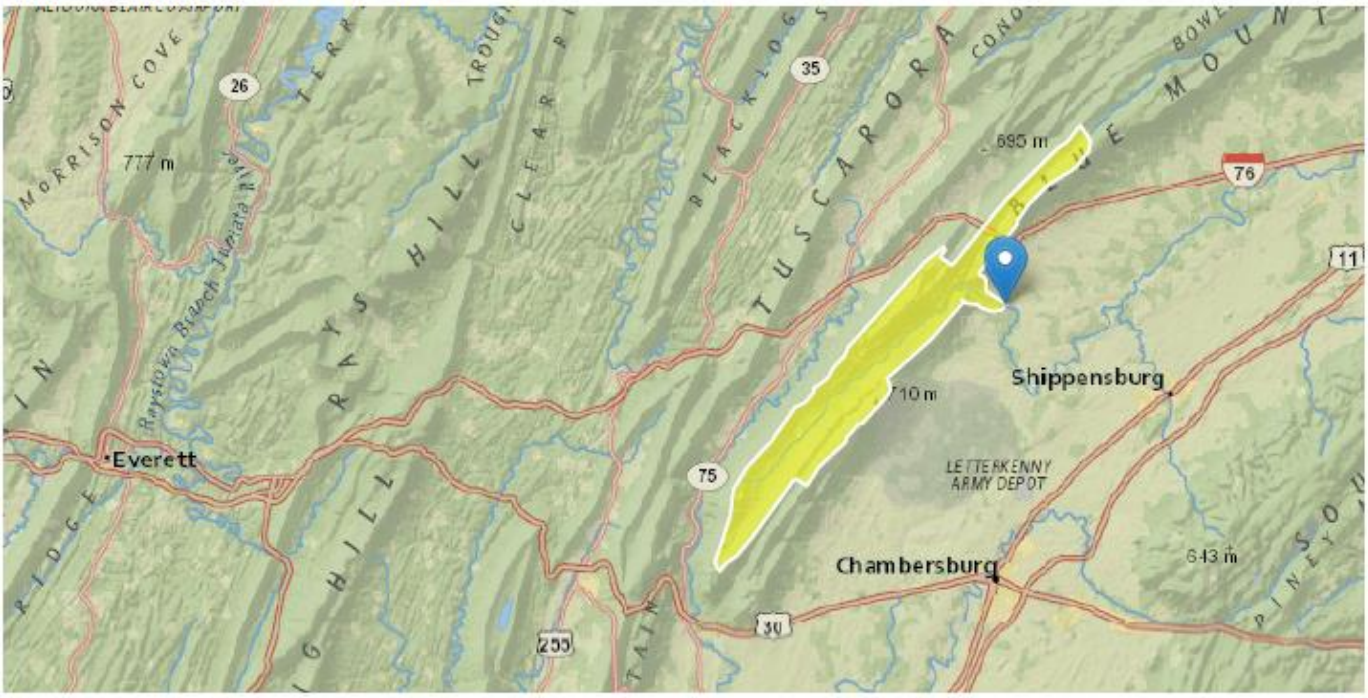
Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, rev 02/03/2022
☐	Other:

Attachment A

Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
Workspace ID: PA20240131103402657000
Clicked Point (Latitude, Longitude): 40.10455, -77.65242
Time: 2024-01-31 05:34:25 -0500



The York Water Company - Letterkenny PA0082201 Modeling Point #1 January 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	42.7	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.7	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.74	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	42.7	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	1.74	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.7	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.59	ft^3/s	38	38
30 Day 2 Year Low Flow	7.32	ft^3/s	33	33
7 Day 10 Year Low Flow	2.96	ft^3/s	51	51
30 Day 10 Year Low Flow	3.81	ft^3/s	46	46
90 Day 10 Year Low Flow	5.69	ft^3/s	36	36

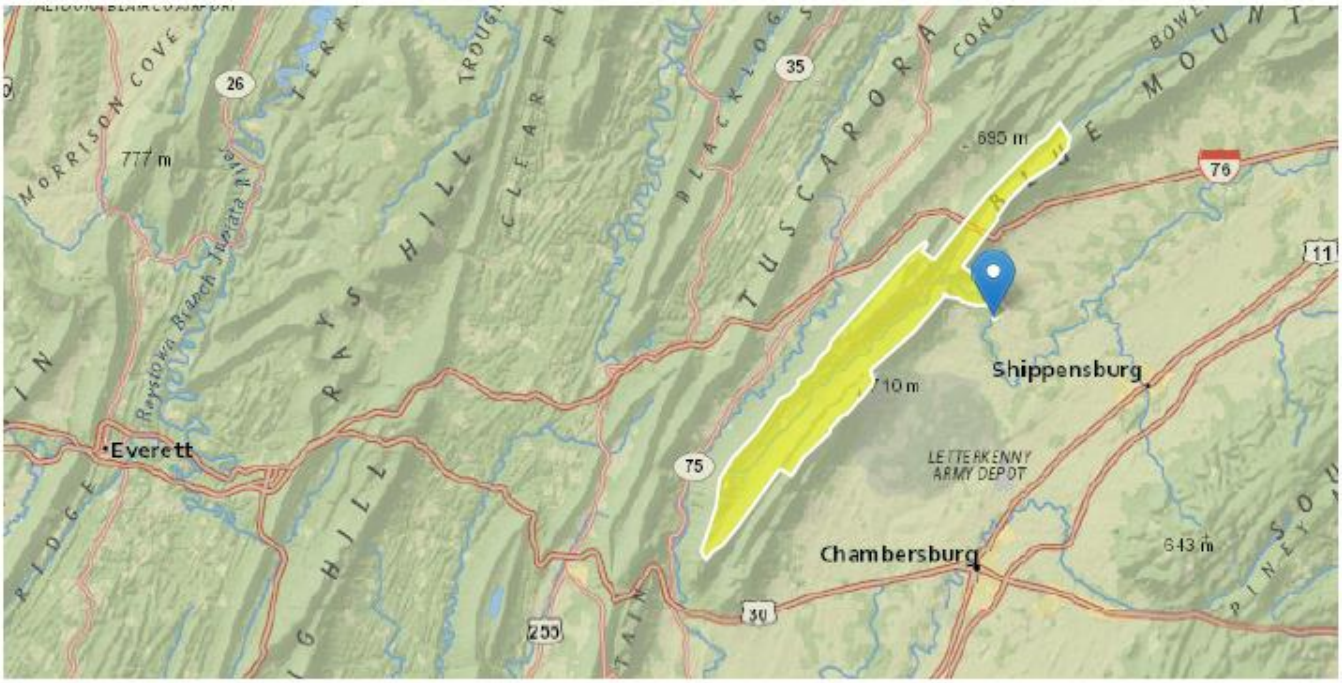
Low-Flow Statistics Citations

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/)

Application Version: 4.19.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20240131103808273000
Clicked Point (Latitude, Longitude): 40.09240, -77.64701
Time: 2024-01-31 05:38:31 -0500



The York Water Company - Letterkenny PA0082201 Modeling Point #2 January 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	43.7	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.7	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.81	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	43.7	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	1.81	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.7	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.53	ft^3/s	38	38
30 Day 2 Year Low Flow	7.25	ft^3/s	33	33
7 Day 10 Year Low Flow	2.92	ft^3/s	51	51
30 Day 10 Year Low Flow	3.77	ft^3/s	46	46
90 Day 10 Year Low Flow	5.62	ft^3/s	36	36

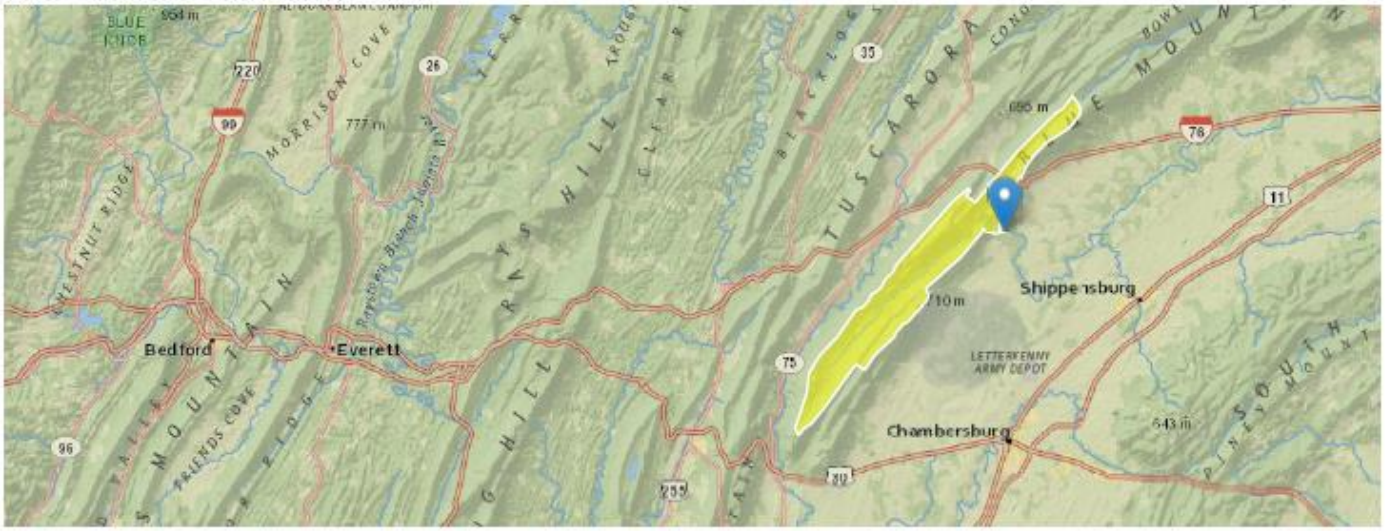
Low-Flow Statistics Citations

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/)

Application Version: 4.19.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20240201150152318000
Clicked Point (Latitude, Longitude): 40.10703, -77.66448
Time: 2024-02-01 10:02:14 -0500



The York Water Company - Letterkenny PA0082201 Modeling Point #A (Roxbury Holiness Camp Inc) February 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	42.1	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.8	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.71	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	42.1	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	1.71	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.8	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.82	ft^3/s	38	38
30 Day 2 Year Low Flow	7.54	ft^3/s	33	33
7 Day 10 Year Low Flow	3.16	ft^3/s	51	51
30 Day 10 Year Low Flow	4.02	ft^3/s	46	46
90 Day 10 Year Low Flow	5.92	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/)

Application Version: 4.19.3
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

SWP Basin	Stream Code	Stream Name
07B	10811	Trib 10811 to Conodoguinet 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)
84.320	Roxbury	PA0082511	0.030	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)
83.600	Letterkenny	PA0082201	0.042	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07B	10811	Trib 10811 to Conodoguinet 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
84.320	Roxbury	16.59	50	16.59	50	0	0
83.600	Letterkenny	16.45	50	16.3	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
84.320	Roxbury	1.88	25	1.88	25	0	0
83.600	Letterkenny	1.88	25	1.87	25	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)		
84.32	Roxbury	25	25	25	25	5	5	0	0
83.60	Letterkenny	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
07B	10811	Trib 10811 to Conodoguinet Creek	84.320	729.00	42.10	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	0.069	0.00	0.00	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
Roxbury	PA0082511	0.0300	0.0300	0.0300	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
07B	10811	Trib 10811 to Conodoguinet Creek	83.600	694.00	42.70	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	0.069	0.00	0.00	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
Letterkenny	PA0082201	0.0420	0.0420	0.0420	0.000	25.00	7.22

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
07B	10811	Trib 10811 to Conodoguinet Creek	**82.170**	650.00	43.70	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	0.069	0.00	0.00	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
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07B	10811	Trib 10811 to Conodoguinet Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
84.320	0.030	20.078	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
26.057	0.638	40.859	0.178
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.36	0.213	0.39	0.704
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.192	15.633	Tsivoglou	5
Reach Travel Time (days)			
0.247			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.025	2.35	0.38	8.23
0.049	2.34	0.38	8.23
0.074	2.32	0.37	8.23
0.099	2.31	0.37	8.23
0.123	2.30	0.36	8.23
0.148	2.29	0.35	8.23
0.173	2.27	0.35	8.23
0.197	2.26	0.34	8.23
0.222	2.25	0.33	8.23
0.247	2.24	0.33	8.23

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
83.600	0.072	20.181	7.004
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
27.589	0.637	43.286	0.175
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.72	0.332	0.85	0.710
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.163	9.710	Tsivoglou	5
Reach Travel Time (days)			
0.500			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.050	2.67	0.82	8.22
0.100	2.63	0.79	8.22
0.150	2.58	0.76	8.22
0.200	2.54	0.73	8.22
0.250	2.50	0.71	8.22
0.300	2.46	0.68	8.22
0.350	2.42	0.66	8.22
0.400	2.38	0.64	8.22
0.450	2.34	0.61	8.22
0.500	2.30	0.59	8.22

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07B	10811	Trib 10811 to Conodoguinet 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												
84.320	2.92	0.00	2.92	.0464	0.00921	.638	26.06	40.86	0.18	0.247	20.08	7.00
83.600	2.96	0.00	2.96	.1114	0.00583	.637	27.59	43.29	0.17	0.500	20.18	7.00
Q1-10 Flow												
84.320	1.87	0.00	1.87	.0464	0.00921	NA	NA	NA	0.14	0.315	20.12	7.00
83.600	1.89	0.00	1.89	.1114	0.00583	NA	NA	NA	0.14	0.635	20.28	7.01
Q30-10 Flow												
84.320	4.67	0.00	4.67	.0464	0.00921	NA	NA	NA	0.23	0.190	20.05	7.00
83.600	4.73	0.00	4.73	.1114	0.00583	NA	NA	NA	0.23	0.388	20.11	7.00

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	1.6	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		