pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0020851**
Facility Type	**Municipal**	APS ID	**274821**
Major / Minor	**Minor**	Authorization ID	**1222671**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Hyndman Borough Municipal Authority Bedford County**	Facility Name	**Hyndman Borough STP**
Applicant Address	PO Box 445	Facility Address	120 Shaffer Road
	Hyndman, PA 15545-0445		Hyndman, PA 15545-0346
Applicant Contact	Joseph Simon	Facility Contact	Dale Deihl
Applicant Phone	(814) 842-9392	Facility Phone	(814) 842-6546
Client ID	77877	Site ID	249348
Ch 94 Load Status	Existing Hydraulic and Organic Overload	Municipality	Hyndman Borough
Connection Status	Dept. Imposed Connection Prohibitions	County	Bedford
Date Application Received	February 22, 2018	EPA Waived?	Yes
Date Application Accepted	October 15, 2019	If No, Reason	

Adobe Acrobat Document

Purpose of Application: This is an application for NPDES renewal

Summary of Review

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineering Specialist	October 17, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria Bebenek, P.E. / Environmental Program Manager	

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Hyndman Borough WWTP located at 120 Shaffer Road, Hyndman, PA 15545 in Bedford County, municipality of Hyndman. The existing permit became effective on October 1, 2013 and expired on September 30, 2018. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on February 22, 2018.

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 0.365 MGD average annual / hydraulic design flow 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 2) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Bedford County Commissioners, Hyndman Borough Council, and Londonderry Township Supervisors and the notice was received by the parties on February 8 and 10, 2018. 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 Willis Creek. The sequence of receiving streams that Willis Creek discharges into is the Potomac 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 cold water fishes (CWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

Willis Creek is a Category 2 stream listed in the 2016 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life. 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:

- There are no proposed changes to the monitoring or effluent limits for the proposed NPDES.

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:	Hyndman Wastewater Treatment Plant
NPDES Permit #	PA0020851
Physical Address:	120 Shaffer Road Hyndman, PA 15545
Mailing Address:	PO Box 445 Hyndman, PA 15545
Contact:	Dale Deihl Wastewater Treatment System Operator / Plant Manager 814-842-6546
Consultant:	R. Michael McClain Sr. Environmental Scientist Stiffler, McGraw and Associates, Inc. 1731 N. Juniata Street Hollidaysburg, PA 16648 mmcclain@stiffler-mcgraw.com 814-696-6280

1.2 Permit History

The permit renewal application submittal included the following information.

- NPDES Application
- Flow Diagrams
- WWTP Site Plan
- Influent Sample Data
- Effluent Sample Data
- Non-residential Customer List

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 120 Shaffer Road, Hyndman, PA 15545. 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

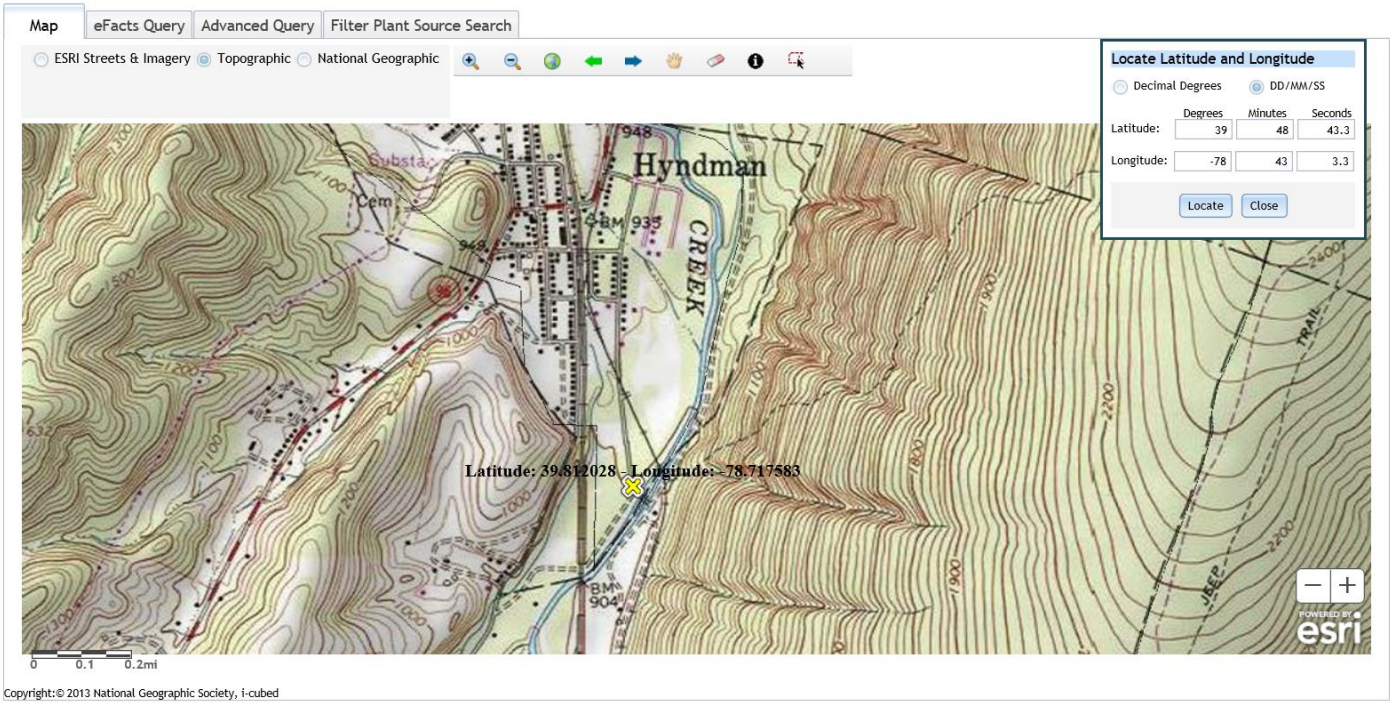
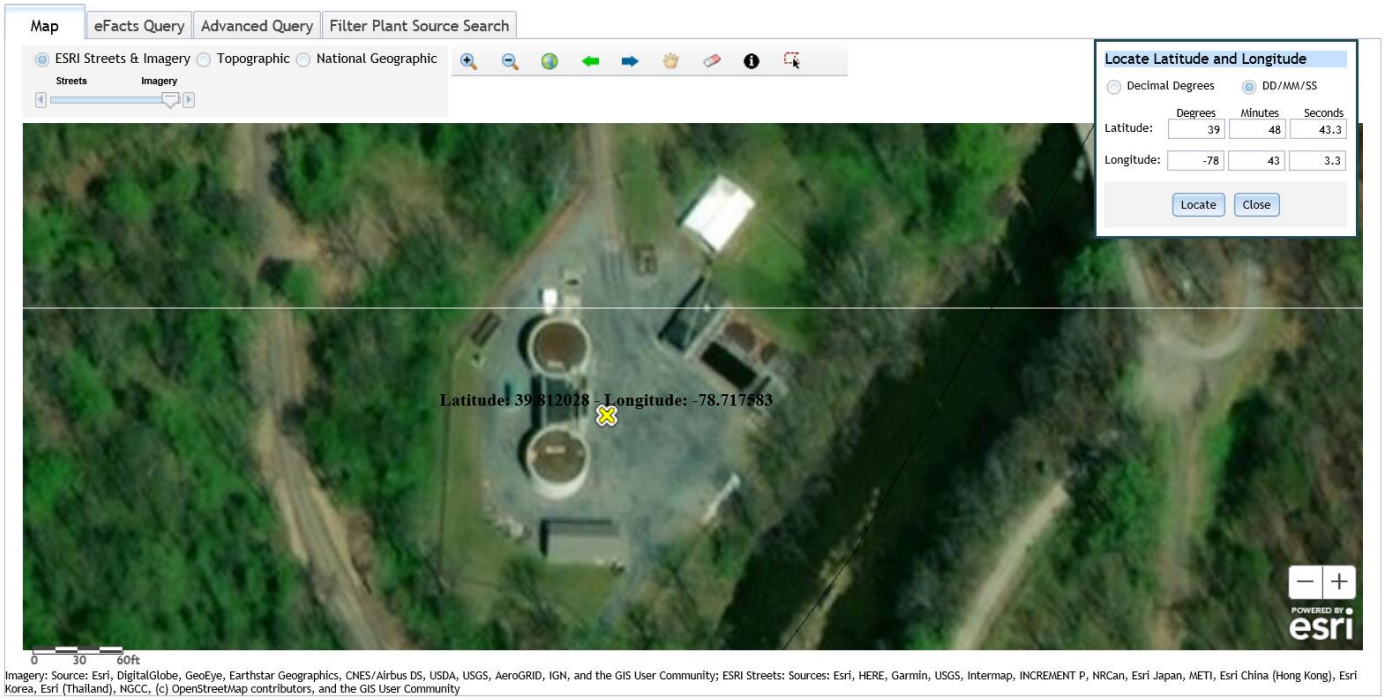


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The Hyndman Borough Wastewater Treatment serves two municipalities. Hyndman Borough contributes 77% of the flow while Londonderry Township contributes 23% of the flow.

The facility has the following non-residential customer list.

Engineering Office	Pharmacy/Retail Sales
Retail Sales	Post Office
Used Car Sales	Funeral Home
Bank/Office	Railroad Office
Medical and Dental Office	Telephone Office
Grocery Market	School Building
Deli	Ice Cream Stand
Beaty Shop	Convenience Store
Gas Station/Car Wash	Municipal Building
Restaurant	Auto Repair Garage

2.2 Description of Wastewater Treatment Process

The subject facility is a 0.365 MGD design flow facility. The subject facility treats wastewater using two (2) SBRs and uv disinfection prior to discharge through the outfall. The facility is being evaluated for flow, pH, dissolved oxygen, UV dosage, 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: Hyndman STP				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.365
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.365	327	Existing Hydraulic and Organic Overload	Aerobic Digestion	Combination of methods

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No. 001 **Design Flow (MGD)** .18
Latitude 39º 48' 42.00" **Longitude** -78º 43' 2.00"
Wastewater Description: Sewage Effluent

The subject facility outfall is not within the general vicinity of another sewage/wastewater outfall.

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 sulphate for precipitation of phosphorus

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** 39° 48' 42.00" , **Longitude** 78° 43' 2.00" , **River Mile Index** 7.65 , **Stream Code** 61864

Receiving Waters: Wills Creek

Type of Effluent: Treated Sewage

1. The permittee is authorized to discharge during the period from October 1, 2013 through September 30, 2018.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Dosage (mws/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
CBOD5	76	122 Wkly Avg	XXX	25	40	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	91	137 Wkly Avg	XXX	30	45	60	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	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** 39° 48' 42.00" , **Longitude** 78° 43' 2.00" , **River Mile Index** 7.65 , **Stream Code** 61864

Receiving Waters: Wills Creek

Type of Effluent: Treated Sewage

1. The permittee is authorized to discharge during the period from October 1, 2013 through September 30, 2018.

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 [1]	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia---N	Report	Report	XXX	Report	XXX	1/week	24-Hr Composite
Kjeldahl---N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	1/week	24-Hr Composite
Net Total Nitrogen	Report	7,306	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	974	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001.

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

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.

02/26/2014:

- The facility stated that the new SBR appears to be working. The operator stated that they are still adjusting small things.
- A steel building was constructed over the UV units. The effluent composite sampler was located in this building.
- The facility was advised to collect grab samples daily to monitor for pH and DO. Probe readings are not acceptable to document daily testing for pH and DO.
- The facility had only 1 of 2 digesters online.

02/13/2015:

- There was nothing significant to report.

12/22/2015:

- There was nothing significant to report.

03/03/2016:

- The facility was advised to (a) report exact time of daily effluent testing (b) record UV level daily (c) note reporting year on past months bench sheets and (d) include a column for reporting UV level on DMR daily supplemental forms.
- The influent TSS for December 2015 was 6,680 mg/l. The facility was unsure the reason for the elevated result.

03/16/2017:

- The influent test results for BOD in February 2017 was low (<12 mg/l). BOD influent levels usually range from 75 to 150 mg/l. The facility was instructed to determine cause for the low BOD.
- The facility was advised to (a) record grab time and test time for daily effluent analysis and (b) include dates and or years to the effluent bench sheet.
- The influent flow to the comminutor was partially diverted due to a clogged bar screen. The operator cleared the blockage during the inspection.
- The UV meter displayed a bulb failure warning and the UV dosage level had been reading low. The operator stated that some of the bulbs were burned out but the unit was working at full intensity. Replacement bulbs were recently purchased and would be installed.
- The decantor trough in one of the SBR was broken in late January. The aluminum par split at the weld and needed to be replaced. A new decantor was installed in February.

03/02/2018:

- The bar screen was clogged by rags and debris and was causing a partial bypass of the comminutor. The bar screen should be kept clear to allow for all flow to go through the grinder when possible.
- The refrigerator had a temperature of 8.9 C. The facility was advised that the temperature should be close to 4 C.
- The pH reading for one of the SBR was 9.4. The operator believes that the inline meter reading was not correct. The meter may need to be recalibrated.
- The facility was advised that operators need to record both grab and analysis times for daily effluent testing.
- A major leak was recently repaired on an 8” collection system line owned and maintained by Londonderry Township.

06/12/2018:

- The facility was inspected due to an incident. The effluent discharge pipe was blocked causing the effluent to overflow from the post aeration tank and the UV tank.

06/14/2018:

- The facility was inspected due to an incident. This was a follow-up inspection from 6/12/2018. The facility was still working on clearing out a blockage in the effluent discharge pipe. The consultant, Stiffler-McGraw, requested that the outfall be relocated from the streambed to the stream bank. That would have involved shortening the pipe and installing a concrete headwall.

3.2.1 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility exceeded the hydraulic design capacity of the treatment system on six (6) occasions from September 2018 to August 2019. The maximum average flow data for the DMR reviewed was 0.531 MGD. The hydraulic design capacity of the treatment system is 0.365 MGD.

DEP planning staff was alerted that the facility may have been hydraulically overloaded for the months from November 2018 to February 2019. Hydraulic overload exists when the monthly average flow entering the plant exceeds the hydraulic design capacity for 3-consecutive months out of the preceding 12 months. The Chapter 94 report dated for February 2019 did not indicate any hydraulic overload from 2014 to 2018 and did not indicate any projected hydraulic overload from 2019 to 2023.

DEP planning staff confirmed that hydraulically overload is based upon influent flow and not effluent flow. Thus, it is believed that the plant is not considered hydraulically overloaded at this time.

DMR Data for Outfall 001 (from September 1, 2018 to August 31, 2019)

Parameter	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18
Flow (MGD) Average Monthly	0.16	0.187	0.245	0.366	0.34	0.325	0.47	0.366	0.416	0.422	0.265	0.531
Flow (MGD) Daily Maximum	0.195	0.238	0.422	0.648	0.685	0.551	0.783	0.535	0.847	0.599	0.460	0.999
pH (S.U.) Minimum	6.7	6.5	6.7	6.6	6.6	6.5	6.5	6.5	6.4	6.4	6.6	6.7
pH (S.U.) Maximum	7.4	7.1	7.0	6.9	6.9	6.8	6.7	6.6	6.8	6.8	6.8	6.9
DO (mg/L) Minimum	5.1	4.6	4.9	2.4	4.6	5.5	5.2	5.8	5.7	5.9	5.4	4.6
CBOD5 (lbs/day) Average Monthly	< 6	8	< 7	< 10	< 8	< 7	< 12	< 9	< 9	< 13	< 6	< 15
CBOD5 (lbs/day) Weekly Average	8	9	< 8	< 12	< 11	< 10	16	< 11	< 11	17	< 9	< 12
CBOD5 (mg/L) Average Monthly	< 4	5	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3.58	< 3	< 3
CBOD5 (mg/L) Weekly Average	5	6	4	5	3	< 3	3	< 3	< 3	11.2	< 3	< 3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	177	196	125	133	82	106	202	141	121	90	199	170
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	243	489	175	266	113	178	380	249	217	134	327	284
BOD5 (mg/L) Raw Sewage Influent Average Monthly	133	123	61	58	32	45	55	52	41	28	104	70
TSS (lbs/day) Average Monthly	27	10	16	22	10	19	18	18	11	< 18	< 4	< 8
TSS (lbs/day) Raw Sewage Influent Average Monthly	144	121	181	145	95	79	174	240	77	70	86	93
TSS (lbs/day) Raw Sewage Influent Daily Maximum	205	186	336	208	123	157	340	403	86	125	153	122
TSS (lbs/day) Weekly Average	42	15	40	49	15	47	31	29	20	46	5	< 12

TSS (mg/L) Average Monthly	18	7	9	7	4	7	4	6	4.3	4.6	< 1.8	< 1.6
TSS (mg/L) Raw Sewage Influent Average Monthly	103	76	87	62	42	30	51	79	28	23	43	34
TSS (mg/L) Weekly Average	26	11	25	13	7	14	6	12	7.6	11.2	2.2	1.6
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1.0	< 1	< 4	< 2	< 2	< 2	< 1	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	4	< 1	< 1	5.2	< 1.0	< 1	39.2	5.2	7.5	31	1	3.1
Nitrate-Nitrite (mg/L) Average Monthly	< 1.2	< 1.2	< 1.2	< 1.2	< 2.132	< 4.069	1.866	< 3.084	0.436	< 3.253	< 2.529	< 2.042
Nitrate-Nitrite (lbs) Total Monthly	< 53	< 61	< 75	< 107	169	< 299	< 204	< 294	44	< 356	< 172	< 330
Total Nitrogen (mg/L) Average Monthly	12.5	8.22	< 6	< 5.07	< 3.862	< 6.322	< 3.203	< 4.452	< 4.948	< 4.253	< 3.637	< 3.239
Total Nitrogen (lbs) Effluent Net Total Monthly	564	408	< 384	430	< 298	< 486	< 355	< 419	< 441	< 466	< 245	< 507
Total Nitrogen (lbs) Total Monthly	564	408	< 384	< 430	< 298	< 486	< 355	< 14	< 441	< 466	< 245	< 507
Total Nitrogen (lbs) Effluent Net Total Annual												< 4469
Total Nitrogen (lbs) Total Annual												< 4469
Ammonia (mg/L) Average Monthly	9.032	7.233	4.803	2.29	< 0.586	< 0.311	0.894	0.862	0.436	< 0.213	< 0.392	< 0.56
Ammonia (lbs) Total Monthly	402	358	310	189	< 44	< 26	103	62	44	< 21	< 27	< 69
Ammonia (lbs) Total Annual												< 713
TKN (mg/L) Average Monthly	11.32	9.54	6.71	3.87	< 1.73	< 2.26	< 1.34	< 1.37	< 1.14	< 1	< 1.11	1.2
TKN (lbs) Total Monthly	512	470	425	323	< 130	< 176	< 151	< 125	< 101	109	< 73	< 178
Total Phosphorus (mg/L) Average Monthly	1.126	0.88	0.678	0.515	0.719	0.608	0.522	0.531	0.403	0.419	0.464	0.538

Total Phosphorus (lbs) Effluent Net Total Monthly	51	42	42	44	55	47	57	47	32	43	28	54
Total Phosphorus (lbs) Total Monthly	51	42	42	44	55	47	57	47	32	43	28	54
Total Phosphorus (lbs) Effluent Net Total Annual												582
Total Phosphorus (lbs) Total Annual												582
UV Dosage (mWsec/cm²) Minimum	24.18	24.18	24.18	24.18	24.18	24.18	54.41	54.41	50.46	54.41	54.41	30.23

3.2.2 Chesapeake Bay TMDL Compliance

The following table summarizes the facility's compliance with Chesapeake Bay TMDL truing.

Chesapeake Bay Annual Nutrient Summary Hyndman WWTP PA0020851				
Compliance Year for Truing Period (Oct 1 - Nov 28)	Net Effluent Limits		Compliant with Permit Limits (Yes/No)	
	Nitrogen (lbs)	Phosphorus (lbs)	Nitrogen	Phosphorus
	7,306	***974***		
2018	4,469	582	Yes	Yes

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.

A scan of effluent non-compliances using WMS will populate data after after the facility began using eDMR.

Summary of Non-Effluent Compliance with NPDES Limits
Beginning October 1, 2013 to October 15, 2019

NON COMPLIANCE DATE	NON COMPLIANCE CATEGORY	PARAMETER	SAMPLE VALUE	VIOLATION CONDITION	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
12/12/2015	Concentration 3 Effluent Violation	Total Suspended Solids	51	>	45	mg/L	Weekly Average
12/12/2015	Concentration 3 Effluent Violation	Fecal Coliform	2865	>	1000	CFU/100 ml	Instantaneous Maximum
12/21/2015	Concentration 3 Effluent Violation	Total Suspended Solids	51	>	45	mg/L	Weekly Average
02/22/2018	Concentration 1 Effluent Violation	Dissolved Oxygen	4.7	<	5.0	mg/L	Minimum
07/30/2018	Concentration 1 Effluent Violation	Dissolved Oxygen	0.34	<	5.0	mg/L	Minimum
09/25/2018	Concentration 1 Effluent Violation	Dissolved Oxygen	4.9	<	5.0	mg/L	Minimum
10/25/2018	Concentration 1 Effluent Violation	Dissolved Oxygen	4.6	<	5.0	mg/L	Minimum
05/28/2019	Concentration 1 Effluent Violation	Dissolved Oxygen	4.6	<	5.0	mg/L	Minimum
06/27/2019	Concentration 1 Effluent Violation	Dissolved Oxygen	2.4	<	5.0	mg/L	Minimum
07/25/2019	Concentration 1 Effluent Violation	Dissolved Oxygen	4.9	<	5.0	mg/L	Minimum
08/27/2019	Concentration 1 Effluent Violation	Dissolved Oxygen	4.6	<	5.0	mg/L	Minimum

3.3.2 Non-Compliance- Enforcement Actions

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

No enforcement actions were found in the WMS system for the time period beginning October 1, 2013 and ending October 15, 2019.

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility from May 2018 to August 2019 is as follows.

Sewage Sludge / Biosolids Production Information			
Dewatered Sewage Sludge/Biosolids Hauled Off-Site			
Date (YEAR)	Tons Dewatered	% Solids	Dry Tons
Aug-18	21.04	15.86	3.18
Notes:			
Mostoller Landfill; DEP Permit # 101571			

3.5 Open Violations

No open violations existed as of October 2019.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Willis Creek. The sequence of receiving streams that Willis Creek discharges into is the Potomac River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Wilson Water Treatment located approximately 90 miles downstream of the subject facility on the Potomac River (abstracted from July 2013 fact sheet). 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 2016 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 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life. The designated use has been classified as protected waters for cold water fishes (CWF) and migratory fishes.

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 used. The default value of 7.0 was utilized for pH and the default value of 20 C was used for stream water temperature. The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data			
USGS Station Number	1603500		
Station Name	Evitts Creek Near Centerville, PA		
Q710	1.8	ft^3/sec	
Drainage Area (DA)	30.2	mi^2	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(1.8 ft^3/sec / 30.2 mi^2)		
LFY =	0.0596	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		146	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.0596 $ft^3/sec/mi^2$)(146 mi^2)			
Q710 =	8.702	ft^3/sec	

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.18
Latitude	39Âº 48' 43.29"	Longitude	-78Âº 43' 1.16"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Wills Creek (CWF)	Stream Code	68447
NHD Com ID	45642991	RMI	13.9
Drainage Area	146	Yield (cfs/mi^2)	0.0596
Q_{7-10} Flow (cfs)	8.702	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	904	Slope (ft/ft)	
Watershed No.	13-A	Chapter 93 Class.	CWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports aquatic life		
Cause(s) of Impairment	Not applicable		
Source(s) of Impairment	Not applicable		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default value
Temperature (°F)	20.0	Default Value
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		Wilson Water Treatment Plant	
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	90

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)
	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Total Suspended Solids	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 1.0 (WQM Model) and (3) PENTOXSD for Windows 2.0 (PENTOXSD) for Toxics pollutants.

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 input values utilized for the modeling are summarized in the table which can be found in Attachment B.

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 PENTOXSD Modeling

The facility is not subject to PENTOXSD.

5.3.3.1 Whole Effluent Toxicity (WET)

The subject 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.

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 and II 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. The jurisdictions have developed or will develop WIPs over three Phases.

Phase I and Phase II WIPs were developed and submitted to EPA in 2010 and 2012 for objectives to be implemented by 2017 and 2025 to achieve applicable water quality standards. The Phase II WIPs build on the initial Phase I WIPs platform by providing more specific local actions. In 2018, Phase III WIPs will be developed to include further actions for jurisdictions to implement between 2018 and 2025.

Section 7 of the Phase II WIP describes Pennsylvania's strategy for reducing nutrients to the Chesapeake Bay from wastewater facilities. The supplement to Section 7 of the Phase II WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The supplement is updated periodically to reflect changes due to PA DEP's permit actions as well as changes to strategies in managing the wastewater sector's allocated loads under the TMDL. The latest revision of the supplement was October 14, 2016.

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.

Based upon the supplement the subject facility has been categorized as a Sector C discharger. The supplement defines Sector C as a sewage facility is considered non-significant dischargers if it is a Phase 4 facility or Phase 5 facility having a specified flow rate (i.e. Phase 4 facility ≥ 0.2 MGD and < 0.4 MGD, Phase 5 facility > 0.002 MGD and < 0.2 MGD), a small flow/single residence sewage treatment facilities (≤ 0.002 MGD), or a non-significant IW facilities. These facilities may be covered by statewide general permits or may have individual NPDES permits.

Currently, there are approximately 1,000 Phase 4 and 5 sewage facilities and approximately 740 small flow sewage treatment facilities covered by the general permit. There are also approximately 600 non-significant IW facilities.

Phase 4 sewage facilities (average annual design flow on August 29, 2005 ≥ 0.2 MGD and < 0.4 MGD) may have a future decision on establishment of Cap Loads in permits. Until then, DEP will permit Phase 4 sewage facilities as follows:

- Renewed or amended permits for facilities that do not increase design flow (compared to the date of the latest prior permit action) will contain monitoring and reporting for TN and TP throughout the permit term at a frequency no less than monthly).

- Renewed or amended permits that include an increase in design flow will contain Cap Loads based on the lesser of a) existing TN and 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.

A list of non-significant sewage and industrial waste dischargers with Cap Loads in NPDES permits is presented in Attachment B of the Phase 2 WIP.

The total nitrogen (TN) and total phosphorus (TP) cap loads itemized by Attachment B for the subject facility are as follows:

TN Cap Load (lbs/yr)	7,306
TN Delivery Ratio	0.930
TP Cap Load (lbs/yr)	974
TP Delivery Ratio	0.436

This facility is subject to Sector C monitoring requirements. The facility is listed as a non-significant discharger with cap loads in Attachment B of the Phase 2 WIP. The facility has been recommended to be sampled for nitrogen species and phosphorus on a 1x/wk basis.

5.5 Anti-Degradation Requirement

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

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

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

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

5.6 Anti-Backsliding

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

5.7 TDS, Sulfate, Chloride, and Bromide Monitoring

Based upon an email directive from Central Office on January 23, 2014 and in accordance with the SOP- Establishing effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), TDS and other major constituents (sulfate, chloride, and bromide) have emerged as pollutants of concern. Monitoring requirements are based on sampling data that triggers the threshold for either concentration limits or loading limits.

Where the concentration of TDS in the discharge exceeds 1,000 mg/l or the net TDS load from a discharge exceeds 20,000 lbs/day and the discharge exceeds 0.1 MGD, monitoring and reporting for TDS, sulfate, and chloride should be required. Since the facility neither trips the concentration threshold or the loading threshold, the facility will not be required to be monitored for TDS, sulfate, and chloride.

Where the concentration of bromide in a discharge exceeds 1 mg/l and the discharge flow exceeds 0.1 MGD, monitoring and reporting should be required. Since the facility doesn't trip the concentration threshold, the facility will not be required to be monitored for bromide.

6.0 NPDES Parameter Details

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

The reader will find in this section:

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

6.1 Recommended Monitoring Requirements and Effluent Limitations

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

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection
Hyndman Borough; PA0020851

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 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 25 mg/l as an average monthly and 76 lbs/day 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). WMS modeling indicates that the TBEL is more stringent than the WQBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 30 mg/l as an average monthly and 91 lbs/day 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. Since the TBEL is more stringent than TBEL, TBEL will apply.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day.
		Effluent Limit:	The facility will be required to recording UV dosage.
		Rationale:	Consistent with the SOP- Establishing Efluent Limitations for Individual Sewage Permits (Revised January 10, 2019), routine monitoring of UV is required.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).

Notes:

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

2 Monitoring frequency based on flow rate of 0.365 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 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Hyndman Borough; PA0020851

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk 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/wk basis.
Nitrate-Nitrite as N	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk 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/wk basis.
Total Nitrogen	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo 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/mo basis.
TKN	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk 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/wk basis.
Total Phosphorus	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk 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/wk basis.
Net Total Nitrogen	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo.
		Effluent Limit:	Effluent limits shall be greater than 7,306 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo basis.
Net Total Phosphorus	Cheapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo.
		Effluent Limit:	Effluent limits shall be greater than 974 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo basis.

Notes:

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

2 Monitoring frequency based on flow rate of 0.365 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 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.1.3 Toxics

The application package included sampling results for TDS, chloride, bromide, sulfate, total copper, total lead, and total zinc. The results were reviewed using the Toxics Screening Analysis to determine if PENTOXSD modeling was necessary. None of the pollutants exceeded the most stringent criterion limits. Thus, no PENTOXSD modeling was necessary. In turn, no monitoring or limits will be required for these parameters.

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.

- There are no proposed changes to the monitoring or effluent limits for the proposed NPDES.

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** 39° 48' 42.00" , **Longitude** 78° 43' 2.00" , **River Mile Index** 13.9 , **Stream Code** 61864

Receiving Waters: Wills Creek (CWF)

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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	76	122	XXX	25	40	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	91	137	XXX	30	45	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ultraviolet light dosage (mWsec/cm²)	XXX	XXX	Report	XXX	XXX	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. B. For Outfall 001 , **Latitude** 39º 48' 42.00" , **Longitude** 78º 43' 2.00" , **River Mile Index** 13.9 , **Stream Code** 61864

Receiving Waters: Wills Creek (CWF)

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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Net Total Nitrogen	Report	7306	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	974	XXX	XXX	XXX	XXX	1/month	Calculation

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

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- SBR Batch Discharge Condition
- Hauled-In Waste Restrictions
- Solids Management for Non-Lagoon Treatment Systems

Attachment A

Stream Stats/Gauge Data

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

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

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01583500	Western Run at Western Run, Md.	39.511	-76.677	59.8	N
01583600	Beaverdam Run at Cockeysville, Md.	39.486	-76.646	20.9	N
01584050	Long Green Creek at Glen Arm, Md.	39.455	-76.479	9.40	N
01584500	Little Gunpowder Falls at Laurel Brook, Md.	39.505	-76.432	36.1	N
01585095	North Fork Whitemarsh Run near White Marsh, Md.	39.386	-76.469	1.34	N
01585100	Whitemarsh Run at White Marsh, Md.	39.371	-76.446	7.61	N
01585200	West Branch Herring Run at Idlewylde, Md.	39.374	-76.584	2.13	N
01585300	Stemmers Run at Rossville, Md.	39.341	-76.488	4.46	N
01585400	Brien Run at Stemmers Run, Md.	39.334	-76.473	1.97	N
01585500	Cranberry Branch near Westminster, Md.	39.593	-76.968	3.29	LF
01586000	North Branch Patapsco River at Cedarhurst, Md.	39.504	-76.885	56.6	LF
01586210	Beaver Run near Finksburg, Md.	39.489	-76.903	14.0	N
01586610	Morgan Run near Louisville, Md.	39.452	-76.955	28.0	N
01587500	South Branch Patapsco River at Henryton, Md.	39.351	-76.914	64.4	N
01589000	Patapsco River at Hollofield, Md.	39.310	-76.792	285	Y
01589100	East Branch Herbert Run at Arbutus, Md.	39.24	-76.692	2.47	N
01589300	Gwynns Falls at Villa Nova, Md.	39.346	-76.733	32.5	N
01589330	Dead Run at Franklintown, Md.	39.311	-76.717	5.52	N
01589440	Jones Falls at Sorrento, Md.	39.392	-76.661	25.2	N
01589500	Sawmill Creek at Glen Burnie, Md.	39.17	-76.631	4.97	LF
01594930	Laurel Run at Dobbin Road near Wilson, Md.	39.244	-79.428	8.23	N
01594936	North Fork Sand Run near Wilson, Md.	39.260	-79.410	1.91	N
01594950	McMillan F near Fort Pendleton, Md.	39.277	-79.390	2.30	N
01595000	North Branch Potomac River at Steyer, Md.	39.302	-79.307	73.1	N
01595200	Stony River near Mount Storm, W.Va.	39.270	-79.262	48.7	Y
01595300	Abram Creek at Oakmont, W.Va.	39.367	-79.179	42.6	N
01595500	North Branch Potomac River at Kitzmiller, Md.	39.394	-79.182	225	N
01595800	North Branch Potomac River at Barnum, W.Va.	39.445	-79.111	266	Y
01596500	Savage River near Barton, Md.	39.570	-79.102	49.1	N
01597000	Crabtree Creek near Swanton, Md.	39.500	-79.159	16.7	N
01597500	Savage River below Savage River Dam near Bloomington, Md.	39.503	-79.124	106	Y
01598500	North Branch Potomac River at Luke, Md.	39.479	-79.064	406	Y
01599000	Georges Creek at Franklin, Md.	39.494	-79.045	72.4	N
01600000	North Branch Potomac River at Pinto, Md.	39.567	-78.840	607	Y
01601000	Wills Creek below Hyndman, Pa.	39.812	-78.716	146	N
01601500	Wills Creek near Cumberland, Md.	39.670	-78.788	247	N
01603000	North Branch Potomac River near Cumberland, Md.	39.622	-78.773	877	Y
01603500	Evitts Creek near Centerville, Pa.	39.790	-78.646	30.2	N
01604500	Patterson Creek near Headsville, W.Va.	39.443	-78.822	221	N
01609000	Town Creek near Oldtown, Md.	39.553	-78.555	148	N
01610000	Potomac River at Paw Paw, W.Va.	39.539	-78.456	3,129	N
01610155	Sideling Hill Creek near Bellegrove, Md.	39.650	-78.344	102	N
01611500	Cacapon River near Great Cacapon, W.Va.	39.582	-78.310	675	N
01613000	Potomac River at Hancock, Md.	39.698	-78.178	4,064	N
01613050	Tonoloway Creek near Needmore, Pa.	39.898	-78.132	10.7	N

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

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

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
[4]01583500	1946–2008	63	9.6	10.7	24.0	13.4	26.9	17.5
[4]01583600	1984–2008	25	4.9	5.6	9.6	7.3	11.6	9.6
[4]01584050	1977–2008	32	1.5	1.6	3.3	1.9	3.7	2.5
[4]01584500	1928–2008	52	5.9	6.5	16.2	8.2	17.8	10.9
[4]01585095	1994–2008	15	0	0	.1	.1	.2	.4
[4]01585100	1960–2008	45	.3	.5	1.0	.9	1.7	2.3
[4]01585200	1959–2008	39	.1	—	—	.3	.6	.7
[4]01585300	1960–1989	28	.1	.1	.3	.3	.7	1.0
[4]01585400	1960–1987	28	.2	.2	.4	.2	.5	.6
[4]01585500	1951–2008	58	.1	.2	.7	.3	1.0	.5
[4]01586000	1947–2008	61	7.1	8.2	18.8	11.0	21.0	15.8
[4]01586210	1984–2008	25	1.3	1.5	4.5	2.5	5.0	3.7
[4]01586610	1984–2008	25	2.6	2.9	8.2	4.1	9.2	6.2
[4]01587500	1950–1980	31	4.3	5.3	19.8	8.9	20.9	14.4
[4]01589000	[2]1956–2004	41	12.6	14.6	34.1	19.6	40.1	27.5
[4]01589000	[3]1946–1954	9	57.0	70.8	108	84.7	130	117
[4]01589100	1959–2008	40	0.3	0.4	0.6	0.5	0.9	1.0
[4]01589300	1958–2008	42	3.3	3.8	8.1	5.7	10.8	9.1
[4]01589330	1961–2008	36	.2	.3	.6	.5	1.0	1.2
[4]01589440	1967–2008	33	3.3	3.5	8.4	4.6	9.8	6.6
[4]01589500	1946–2008	31	.1	.1	2.1	.2	2.5	.4
[4]01594930	1982–2004	23	1.2	1.6	3.0	2.1	3.9	2.9
[4]01594936	1982–2007	26	.1	.1	.3	.2	.4	.3
[4]01594950	1988–2008	21	<.1	<.1	.1	<.1	.2	.1
[4]01595000	1958–2008	51	4.8	6.4	14.7	9.8	21.8	17.4
[5]01595200	1963–2008	46	2.0	2.9	5.9	3.8	8.4	6.8
01595300	1958–1982	25	.4	.5	2.5	1.0	4.2	2.6
[4]01595500	1951–2008	39	11.7	14.2	32.4	22.0	47.7	37.1
01595800	[3]1968–1981	14	18.6	21.1	43.4	30.0	63.0	57.9
[4]01596500	1950–2008	59	.8	1.0	2.4	1.6	3.7	3.0
[4]01597000	1950–1981	32	1.0	1.1	1.7	1.3	2.0	1.7
[4]01597500	1952–2008	57	5.4	7.3	24.9	13.0	37.8	28.1
[4]01598500	[2]1952–2008	57	71.4	78.3	143	90.8	164	109
[4]01599000	1907–2008	78	2.9	3.2	6.1	4.0	7.7	5.6
[4]01600000	[2]1952–2008	38	76.6	83.4	133	95.6	160	115
[4]01600000	[3]1940–1950	11	38.2	43.4	70.7	49.7	91.6	87.4
01601000	1953–2008	20	.9	1.0	3.0	2.1	6.2	4.6
[4]01601500	1907–2008	78	13.1	13.9	23.4	16.5	29.0	23.2
[4]01603000	[2]1983–2008	26	202	212	304	235	352	266
[4]01603000	[3]1931–1981	51	57.4	64.7	143	79.2	168	119
01603500	1934–1982	49	1.7	1.8	3.0	2.2	3.7	2.8
[5]01604500	1940–2008	69	2.2	2.7	6.9	4.4	9.7	7.1
[4]01609000	1930–2008	22	1.5	1.9	6.6	3.0	10.0	6.2
01610000	1940–2008	69	226	239	381	278	459	369
[4]01610155	1969–2008	18	0	0	.2	.1	1.0	1.0

Attachment B

Modeling Input Values
WQM 7.0 Modeling Output Values
Toxics Screening Analysis

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	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.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	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.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, Revised October 11, 2013
☐	Other: