pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0030511**
Facility Type	**Non-Municipal**	APS ID	**276001**
Major / Minor	**Minor**	Authorization ID	**1208917**

Applicant and Facility Information

Applicant Name	**Bermudian Springs School District**	Facility Name	**Bermudian Springs High School**
Applicant Address	7335 Carlisle Pike	Facility Address	7335 Carlisle Pike
	York Springs, PA 17372-0501		York Springs, PA 17372-0501
Applicant Contact	Shane Hotchkiss	Facility Contact	Marlin Ensor
Applicant Phone	(717) 528-4113	Facility Phone	(717) 624-4231
Client ID	64940	Site ID	451521
Ch 94 Load Status	Not Overloaded	Municipality	Huntington Township
Connection Status		County	Adams
Date Application Received	August 16, 2017	EPA Waived?	Yes
Date Application Accepted	December 5, 2017	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

Bermudian Springs School District (BSSD) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The last NPDES permit was issued February 7, 2013, with an effective date of March 1, 2013. The Department received the renewal permit application on August 16, 2017 prepared by Brett Loski, Env./GIS Coordinator, WM. F. Hill & Assoc., Inc. A renewal application was submitted showing no changes to the treatment system and no expanded flow. The permit expired on February 28, 2018 and has been administratively extended since that time.

Changes from the previous permit: Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml. A 1/year "Monitor & Report" for Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, TN, and TP requirements will be added to the proposed permit.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days. Any additional information or public review of documents associated with the discharge or the applicant may be available at the PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO File Review Coordinator at 717.705.4700

Approve	Deny	Signatures	Date
X		Hilary H. Le / Environmental Engineering Specialist	September 5, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Clean Water Program Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.03
Latitude	39º 58' 43.05"	Longitude	-77º 4' 52.85"
Quad Name	Hampton	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to North Branch Mud Run (WWF)	Stream Code	NA (Dry Stream to 08635)
NHD Com ID	57469385	RMI	See comments below
Drainage Area	See comments below	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	528	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Excessive algal growth, Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Pending	Name	
Nearest Downstream Public Water Supply Intake	Wrightsville Borough Municipal Authority, York County		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	28.51 miles	Distance from Outfall (mi)	Approximate 54.32 miles

Changes Since Last Permit Issuance: none

Other comments: No Stream code exists for the dry stream on which the discharge is located. The drainage area at the discharge point is 0.08 mi.^{2}. The length of the dry stream from the discharge point to its confluence with UNT 08635 is 0.58 mile.

Drainage Area
The discharge is to Unnamed Tributary 08635 to North Branch Mud Run at RMI 0.30 mile. A drainage area upstream of the discharge is estimated to be 2.55 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
The nearby small watershed within the Conewago drainage basin (with an exit point on UNT 09045 just before its confluence with Conewago Creek) was chosen as a proper representative watershed. The Q_{7-10} is 0.24 cfs and the drainage area is 4.88 mi.^{2} (according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/) which results in a Q_{7-10} low flow yield of 0.05 cfs/mi.^{2}. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

$$\text{Low Flow Yield} = Q_{7-10gage} / \text{Drainage Area}_{gage} = 0.24 \text{ cfs} / 4.88 \text{ mi.}^2 = 0.05 \text{ cfs/mi.}^2$$
$$Q_{7-10discharge} = 0.05 \text{ cfs/mi.}^2 * \text{Drainage Area}_{discharge} = 0.05 \text{ cfs/mi.}^2 * 2.55 \text{ mi.}^2 = 0.13 \text{ cfs}$$
$$Q_{30-10} = 1.36 * Q_{7-10discharge} = 1.36 * 0.13 \text{ cfs} = 0.18 \text{ cfs}$$
$$Q_{1-10} = 0.64 * Q_{7-10discharge} = 0.64 * 0.13 \text{ cfs} = 0.08 \text{ cfs}$$

The resulting dilution ratio (under Q_{7-10} conditions) is $Q_{stream}/Q_{discharge}$ = 0.13 cfs/[0.03 MGD*(1.55 cfs/MGD)] = 2.8:1

Potable Water Supply Intake
The nearest downstream public water supply intake is the Wrightsville Borough Municipal Authority, York County intake on the Susquehanna River, approximately 54.32 miles from the point of discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Bermudian Springs Hs				
WQM Permit No.	**Issuance Date**			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary		Hypochlorite	0.03
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.03	66.7	Not Overloaded		

The WWTP train is as follows:

Comminutor / Bar Screen (1) ⇒ EQ Tank (1) ⇒ Aeration Tank (1) ⇒ Settling Tank (1) ⇒ Sand Filters (2) ⇒ Chlorine Contact Tank (with liquid feed) (1) ⇒ Sludge Holding Tanks (2) ⇒ Discharge to Dry Stream

The system incorporates chemical addition in the form of sodium hypochlorite (for disinfection), and soda ash (for pH control). Two sludge holding tanks are used for solids storage.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months from August 1, 2018 to July 31, 2019 are summarized in the Table below.
Summary of Inspections:	10/11/2017: Mr. Bowen, DEP WQS, conducted a compliance evaluation inspection. The discharge was clear. The field test results indicated in permit limits. There were no violations indicate during inspection.
Other Comments:	There are no open violations associated with this facility or permittee.

Other Comments: DMRs for the past 12 months indicate three instances of non-compliance (one exceedance for maximum flow, one low pH level, and one exceedance for TRC). In general, the facility appears to be operating satisfactorily.

Compliance History

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

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.0078	0.00663	0.01278	0.01145	0.01463	0.01293	0.01365	0.01354	0.01569	0.01079	0.01598	0.00907
Flow (MGD) Daily Maximum	0.02011	0.01318	0.02857	0.02521	0.04615	0.02452	0.02872	0.02885	0.02869	0.02480	0.02868	0.02137
pH (S.U.) Minimum	7.0	6.9	6.4	6.4	6.3	6.2	6.4	6.3	6.5	5.5	6.5	6.6
pH (S.U.) Maximum	7.3	7.2	7.0	6.9	7.0	7.1	7.0	7.0	7.0	7.7	7.0	7.2
DO (mg/L) Minimum	7.2	6.7	5.2	6.4	6.0	8.2	5.8	8.1	5.8	5.4	5.4	5.9
TRC (mg/L) Average Monthly	0.31	0.41	0.44	0.37	0.38	0.37	0.32	0.31	0.29	0.27	0.24	0.33
TRC (mg/L) Instantaneous Maximum	0.81	0.75	1.34	1.29	1.19	1.20	1.15	0.85	1.08	0.94	1.20	1.10
$CBOD_5$ (mg/L) Average Monthly	< 3	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
TSS (mg/L) Average Monthly	3.5	3.5	5.0	1.0	1.0	3.5	1.0	1.0	2.0	1.0	1.0	6.0
Fecal Coliform (CFU/100 ml) Geometric Mean	25	< 3.0	111	28	1.73	11.0	< 3.0	< 9.0	194	32	89	< 2.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	38	5.0	310	38	3.0	17.0	4.0	44	210	> 250	106	6.0
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.10	< 0.11	< 0.10	< 0.1	< 0.1	< 1.0	< 00

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.03
Latitude 39º 58' 42.87" **Longitude** -77º 4' 52.88"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Water Quality-Based Limitations

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model indicates that a monthly average limit of 25 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. However, the existing limits of 10 mg/L monthly average and 20 mg/L instantaneous maximum will remain in the proposed permit as per guidance document 391-2000-014. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

Ammonia (NH_3-N):
NH_3-N calculations were first based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached computer model of the stream:

- Discharge pH = 7.0 (Default)
- Discharge Temperature = 25°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 25ºC (Default for WWF)
- Background NH_3-N = 0 (Default)

The model input data and results are attached. The printout of the WQM 7.0 output indicates that at a discharge of 0.03 MGD, limits of 6.35 mg/L NH_3-N as a monthly average and 12.7 mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life from toxicity effects for summer, to calculate winter limits based on a typical multiplier of 3 used by DEP. Due to anti-backsliding policy, the current NH_3-N limits of 3.0 mg/L monthly average and 6.0 mg/L IMAX for summer will remain in the proposed permit, these limits are more stringent. However, the facility's recent DMRs indicate that the facility has been consistently achieving concentrations under these limits.

Total Suspended Solids (TSS):
The existing dry stream limits of 10 mg/L monthly average and 20 mg/L instantaneous maximum will remain in the proposed permit as per guidance document 391-2000-014. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(2).

Dissolved Oxygen (D.O.):
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100 ml and 25 Pa. Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

Total Residual Chlorine (TRC):
Based on the attached TRC Excel Spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.42 mg/L and an instantaneous maximum limit of 1.37 mg/L. The facility has generally been achieving TRC concentrations below these limits, but occasionally has not. These limits will remain in the proposed permit.

Chesapeake Bay Strategy:
The Department formulated a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). Sewage discharges have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases I, II, and III) dischargers will receive annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/L TN and 0.8 mg/L TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. Phase IV (0.2 - 0.4 MGD) will be required to monitor and report TN and TP during permit renewal monthly and Phase V (below 0.2 MGD) will monitor during current permit renewal once a year. However, any facility in Phases IV and V that undergoes expansion is subjected to cap load right away.

The discharge of TN and TP from this facility is consistent with and covered under the Chesapeake Bay TMDL aggregate WLA for non-significant wastewater discharges. Therefore, a 1/year "Monitor & Report" for Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, TN, and TP requirements will be added to the proposed permit.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams:
eMap PA lists the dry stream as tentatively impaired at the discharge point for excessive algal growth and siltation due to agriculture. UNT 08635 also has a tentative impairment for the same items. A TMDL has not yet been developed.

Class A Wild Trout Fisheries:
No Class A Wild Trout Fisheries are impacted by this discharge.

Additional Consideration

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

Monitoring Frequency and Sample Type
The facility currently is required to collect daily effluent grab samples for D.O., TRC, and pH; bi-monthly effluent 8-hr composite samples of $CBOD_5$, TSS, and Ammonia-Nitrogen; bi-monthly effluent grab samples of Fecal Coliform; annually effluent 8-hr composite samples of TP, Nitrate-Nitrite as N, and total Kjeldahl Nitrogen; and annually effluent calculation samples of TN. Based on the best professional judgement of the author, the existing monitoring frequencies are sufficient and necessary. Therefore, the renewal permit monitoring frequencies will remain the same as those specified in the existing permit.

Attachments is the WQM7.0 data.

WQM7.0 data.pdf

TRC Results

1	**TRC EVALUATION**				
2	Input appropriate values in A3:A9 and D3:D9				
3	0.13	= Q stream (cfs)	0.5	= CV Daily	
4	0.03	= Q discharge (MGD)	0.5	= CV Hourly	
5	30	= no. samples	1	= AFC_Partial Mix Factor	
6	0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor	
7	0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)	
8	0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)	
9	0	= % Factor of Safety (FOS)		=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations	Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 0.913	1.3.2.iii	WLA cfc = 0.882
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 0.340	5.1d	LTA_cfc = 0.513
14					
15	Source		Effluent Limit Calculations		
16	PENTOXSD TRG	5.1f	AML MULT = 1.231		
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.419	AFC	
18			INST MAX LIMIT (mg/l) = 1.369		
19					
20					
21					
22	WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**			
23		**...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**			
24	LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)			
25	LTA_afc	wla_afc*LTAMULT_afc			
26					
27	**WLA_cfc**	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**			
28		**...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**			
29	LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)			
30	**LTA_cfc**	wla_cfc*LTAMULT_cfc			
31					
32	AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))			
33	AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)			
34	INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**			
35					

WQM 7.0 Data:

Node 1: Point of First Use on UNT Mud Run (08635) (0.58 mi downstream of Outfall 001)

Elevation:	528 ft (USGS National Map Viewer)
Drainage Area:	2.55 mi.^{2} (USGS PA StreamStats)
River Mile Index:	0.30 (PA DEP eMapPA)
Low Flow Yield:	0.05 cfs/mi.^{2}
Discharge Flow:	0.03 MGD

Node 2: Just before confluence with Mud Run

Elevation:	517 ft (USGS National Map Viewer)
Drainage Area:	2.94 mi.^{2} (USGS PA StreamStats)
River Mile Index:	0.001 (PA DEP eMapPA)
Low Flow Yield:	0.05 cfs/mi.^{2}
Discharge Flow:	0.000 MGD

Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.42	XXX	1.37	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10	XXX	20	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	10	XXX	20	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18	2/month	8-Hr Composite

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Total Annual	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.42	XXX	1.37	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10	XXX	20	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10	XXX	20	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	8-Hr Composite
Nitrate-Nitrite	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
TKN	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation

Compliance Sampling Location:

Other Comments:

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.
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☐	SOP:
☐	Other: