pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0247855**
Facility Type	**Municipal**	APS ID	**559917**
Major / Minor	**Minor**	Authorization ID	**1215337**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Belfast Township Fulton County**	Facility Name	**Needmore STP**
Applicant Address	121 Homestead Lane	Facility Address	323 Martin Road
	Needmore, PA 17238-9425		Needmore, PA 17238
Applicant Contact	Greg Mellott	Facility Contact	Greg Mellott
Applicant Phone	(717) 377-9491	Facility Phone	(717) 377-9491
Client ID	70132	Site ID	659110
Ch 94 Load Status	Not Overloaded	Municipality	Belfast Township
Connection Status	No Limitations	County	Fulton
Date Application Received	January 4, 2018	EPA Waived?	Yes
Date Application Accepted	March 15, 2018	If No, Reason	
Purpose of Application	NPDES permit renewal		

Summary of Review

Belfast Township has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on July 19, 2013 and became effective on August 1, 2013. The permit expired on July 31, 2018 but the terms and conditions of the permit have been extended since that time.

The NPDES permit for discharge of sewage from the Needmore Wastewater Treatment facility is located in Belfast Township, Fulton County. The annual average design flow is 0.03 MGD, and a maximum hydraulic capacity of 0.034 MGD.

Changes from the previous permit: Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml.

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 27, 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 50' 40.48"	Longitude	-78º 8' 20.42"
Quad Name	Needmore	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tonoloway Creek (WWF)	Stream Code	60850
NHD Com ID	49470738	RMI	16.6 miles
Drainage Area	31.9 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	589.39	Slope (ft/ft)	
Watershed No.	13-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	R.C. Wilson Water Treatment Plant near Williamsport, MD		
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 30.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Tonoloway Creek at RMI 16.6 miles. A drainage area upstream of the discharge is estimated to be 31.9 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
There are no nearby stream gages with low flow data that have extensive or recent periods of record. Since USGS PA StreamStats estimated the drainage area that is below the minimum value allowed by USGS's regression equations, the USGS gage station No. 70403 on Tonoloway Creek watershed (at the PA/MD border) will be used to calculate the Q_{7-10} at the point of discharge using a low flow yield method. The Q_{7-10} here is 1.69 cfs and the drainage area is 112 mi.^{2} which results in a Q_{7-10} low flow yield of 0.015 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):

$$\text{Low Flow Yield} = Q_{7\text{-}10gage} / \text{Drainage Area}_{gage} = 1.69 \text{ cfs} / 112 \text{ mi.}^2 = 0.015 \text{ cfs/mi.}^2$$
$$Q_{7\text{-}10discharge} = 0.015 \text{ cfs/mi.}^2 * \text{Drainage Area}_{discharge} = 0.015 \text{ cfs/mi.}^2 * 31.9 \text{ mi.}^2 = 0.48 \text{ cfs}$$
$$Q_{30\text{-}10} = 1.36 * Q_{7\text{-}10discharge} = 1.36 * 0.48 \text{ cfs} = 0.65 \text{ cfs}$$
$$Q_{1\text{-}10} = 0.64 * Q_{7\text{-}10discharge} = 0.64 * 0.48 \text{ cfs} = 0.307 \text{ cfs}$$

Tonoloway Creek
25 Pa Code 93.9z classifies Tonoloway Creek as warm water fishes (WWF) surface water. Based on the 2016 Integrated Report, Tonoloway Creek, is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Potable Water Supply Intake
The nearest downstream public water supply intake is the R.C. Wilson Water Treatment Plant near Williamsport, MD intake on the Potomac River, approximately 30 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: Needmore WWTP & Sewer System

WQM Permit No.	Issuance Date
2906402	8/18/2006
2906402 A-1	10/8/2013

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	UV	0.03

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.034	60	Not Overloaded	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance: none

The treatment process consists of a comminutor (1), bar screen (1), equitization tank (1), aeration (4), clarifier (1), UV disinfection (1), sludge holding (2), discharge (outfall).

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:	12/16/2016: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. The discharge was clear. The field test results indicated in permit limits. There were no violations during inspection. 12/18/2017: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. The discharge was clear. The field test results indicated in permit limits. There were no violations during inspection. 1/10/2019: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. The discharge was clear. The field test results indicated in permit limits. The results presented report were summarized in the Table below.
Other Comments:	There are no open violations associated with this facility or permittee.

Other Comments: DMRs for the past 12 months indicate seven instances of non-compliance (seven exceedances for maximum flow). The sample dated 1/10/2019 laboratory results report in the Table indicated that they met limits in the permit. The facility appears to be operating satisfactorily.

Date	Flow MDG	pH S.U.	DO mg/L	Temp ^{0}C	$CBOD_5$ mg/L	TSS mg/L	Fecals No./100ml	NH3-N mg/L	TP mg/L	TN mg/L
1/10/2019	0.007	7.16	11.94	5.1	2.00	< 5	< 25	0.04	4.081	0.01

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	0.0067	0.0040	0.0068	0.0053	0.0079	0.0125	0.0089	0.0109	0.0106	0.0055	0.023167	0.0072
Flow (MGD) Daily Maximum	0.0103	0.0063	0.0348	0.0108	0.0527	0.0452	0.0211	0.0734	0.0555	0.0081	0.15320	0.0492
pH (S.U.) Minimum	7.2	7.0	7.2	6.9	7.2	7.2	7.0	7.1	7.1	7.2	7.3	7.5
pH (S.U.) Maximum	7.7	7.3	7.8	7.5	7.8	7.8	7.6	7.7	7.7	7.9	7.8	7.9
DO (mg/L) Minimum	8.0	7.8	7.8	8.0	9.8	9.6	10.1	9.8	8.0	8.0	7.2	7.7
CBOD5 (lbs/day) Average Monthly	0.18	0.17	0.11	0.10	0.18	0.29	0.18	0.15	0.17	0.12	0.20	0.65
CBOD5 (lbs/day) Weekly Average	0.23	0.17	0.13	0.11	0.21	0.29	0.20	0.16	0.23	0.11	0.32	1.21
CBOD5 (mg/L) Average Monthly	3.00	4.66	3.00	3.00	3.00	3.09	3.00	3.00	3.51	3.00	3.00	3.00
CBOD5 (mg/L) Weekly Average	3.00	6.26	3.00	3.00	3.00	3.4	3.00	3.00	4.01	3.00	3.00	3.00
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	11.4	4.8	5.6	8.4	9.9	24.9	9.5		8.7	6.6	4.4	18.1
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	14.0	6.8	6.3	10.3	11.0	37.2	11.4		10.5	8.6	4.5	28.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	194.0	151.2	168	248.5	171.0	268.5	157.5		188.0	171.0	98.2	174.8
TSS (lbs/day) Average Monthly	0.30	0.29	0.11	0.09	0.36	0.27	0.29	0.30	0.21	0.11	0.15	1.73
TSS (lbs/day) Raw Sewage Influent Average Monthly	10.0	5.4	6.1	5.8	8.5	38.8	12.1		3.9	5.5	3.6	22.0
TSS (lbs/day) Raw Sewage Influent Daily Maximum	11.0	7.8	7.0	5.9	9.9	65.5	19.5		4.5	7.7	5.1	36.7
TSS (lbs/day) Weekly Average	0.34	0.36	0.12	0.12	0.53	0.31	0.37	0.52	0.34	0.14	0.17	3.38
TSS (mg/L) Average Monthly	5.6	8.7	3.3	2.9	7.0	2.9	4.6	6.4	4.0	2.8	3.0	5.4

TSS (mg/L) Raw Sewage Influent Average Monthly	176.0	129.5	171	175.0	156.0	419	207.0		88.0	142.0	60.5	171.5
TSS (mg/L) Weekly Average	7.8	13.2	4.2	4.0	11.2	3.4	5.6	11.2	6.0	3.6	4.4	8.4
Fecal Coliform (CFU/100 ml) Geometric Mean	4	23	4	4	4	4	4	8	4	4	14	16
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	4	54	4	4	4	5	4	16	4	3.6	25	68
UV Intensity (µw/cm²) Minimum	4.8	5.6	5.6	4.1	4.8	4.1	4.0	4.3	5.0	5.1	7.0	8.3
Total Nitrogen (lbs/day) Annual Average											2.2	
Total Nitrogen (mg/L) Annual Average											10.15	
Total Nitrogen (lbs) Total Annual											2.2	
Total Phosphorus (lbs/day) Annual Average											0.05	
Total Phosphorus (mg/L) Annual Average											0.248	
Total Phosphorus (lbs) Total Annual											0.05	

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.03
Latitude 39º 50' 40.00" **Longitude** -78º 8' 21.00"
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 25 mg/L average monthly (AML), 40 mg/L average weekly limit (AWL), and 50 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. Mass limits are calculated as follows:

Mass based AML (lb/day) = 25 (mg/L) x 0.03 (MG/day) x 8.34 (lb/MG)(L/mg) = 6.255 lb/day
Mass based AWL (lb/day) = 40 (mg/L) x 0.03 (MG/day) x 8.34 (lb/MG)(L/mg) = 10.0 lb/day

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 = 20°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 25ºC (Default)
- Background NH_3-N = 0 (Default)

The attached computer printout of the WQM7.0 stream model shows that no NH_3-N requirements are needed to protect the aquatic life from NH_3-N toxicity.

Dissolved Oxygen (D.O.):
The existing permit contains a limit of 5.0 mg/L for D.O. DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum stream D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. Since the WQM 7.0 model was run using a minimum D.O. of 5.0 mg/L, this limit will be continued in the renewed permit with a daily monitoring requirement per DEP guidance.

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

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 § 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):
Since this facility upgraded to an ultraviolet disinfection unit, a TRC limit is not necessary. A monitoring requirement for evaluating the effectiveness of the UV bulbs will be remain in the proposed permit.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. A limit of 30 mg/L AML will be required based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 PA § 92a.47(a)(1), and an AWL of 45mg/L per 40CFR 133.102(b)(2) and 25 PA § 92a.47(a)(2). Mass limits are calculated as follows:

Mass based AML (lb/day) = 30 (mg/L) x 0.03 (MG/day) x 8.34 (lb/MG)(L/mg) = 7.5 lb/day
Mass based AWL (lb/day) = 45 (mg/L) x 0.03 (MG/day) x 8.34 (lb/MG)(L/mg) = 11.2 lb/day

Phosphorus:
No phosphorus permit limitations are necessary for this facility.

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. This plant is classified as a phase V, will be required to monitor and report TP and TN once a year.

Influent BOD_5 and TSS Monitoring:
The permit will include influent BOD_5 and TSS monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements, per DEP policy.

Toxic
This is a minor sewage facility receiving domestic wastewater only and the current application does not require sampling of toxic pollutants (or heavy metals) for those facilities with design flows less than 0.1 MGD. Therefore, no reasonable potential analysis for toxic pollutants has been performed for this permit renewal.

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
This discharge is not located on a 303d listed stream segment.

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

Additional Considerations

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., and pH; daily measured record UV Light Transmittance (%); two-month effluent 8-hr composite samples of $CBOD_5$, and TSS; two-month effluent grab samples of fecal coliform; two-month influent 8-hr composite sample of BOD_5 and TSS; annually effluent 8-hr composite samples of TP; 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 existing monitoring frequencies will remain the same as those specified in the proposed permit.

WQM 7.0 MODEL INPUT:

1. Outfall 001 on Tonoloway Creek
    a. Elevation: 589.39 ft
    b. RMI: 16.6 miles to PA & MD boundaries
    c. Drainage Area: 31.9 $mi.^2$
    d. Low Flow Yield: 0.015 $cfs/mi.^2$
    e. Discharge Flow: 0.03 MGD
2. Just after Trib 61046 to Tonoloway Creek
    a. Elevation: 579.68 ft
    b. RMI: 15.98 miles to PA & MD boundaries
    c. Drainage Area: 41.9 $mi.^2$
    d. Low Flow Yield: 0.015 $cfs/mi.^2$
    e. Discharge Flow: 0.000 MGD

Attachment is WQM7.0 data.

WQM7.0 data.pdf

Permit No. PA0247855

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	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 Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
$CBOD_5$	6.2	10.0	XXX	25	40	50	2/month	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2.month	8-Hr Composite
Total Suspended Solids	7.5	11.2	XXX	30	45	60	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
Total Nitrogen	Report Ann. Average	Report Total Annual	XXX	Report Ann. Average	XXX	XXX	1/year	Calculate
Total Phosphorus	Report Ann. Average	Report Total Annual	XXX	Report Ann. Average	XXX	XXX	1/year	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	Daily Maximum	Daily 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
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
CBOD5	6.2	10.0 Wkly Avg	XXX	25.0	40.0	50.0	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	7.5	11.2 Wkly Avg	XXX	30.0	45.0	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Total Nitrogen	Report Annl Avg	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Phosphorus	Report Annl Avg	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

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.
☐	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:
☐	Other: