Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0252506**
Facility Type	**Municipal**	APS ID	**1153280**
Major / Minor	**Minor**	Authorization ID	**1553964**

Applicant and Facility Information

Applicant Name	**Indiana County Municipal Service Authority**	Facility Name	**Margaret STP**
Applicant Address	602 Kolter Drive	Facility Address	831 Margaret Road
	Indiana, PA 15701-3570		Kittanning, PA 16201
Applicant Contact	Tricia Lefko	Facility Contact	Marty Maschak
Applicant Phone	(724) 349-6640	Facility Phone	
Client ID	38534	Site ID	609543
Ch 94 Load Status	Not Overloaded	Municipality	Cowanshannock Township
Connection Status	No Limitations	County	Armstrong
Date Application Received	January 5, 2026	EPA Waived?	Yes
Date Application Accepted		If No, Reason	-

Purpose of Application: Renewal application for an Individual NPDES Permit for a Minor Sewage Facility

Summary of Review

On January 5, 2025, the Department received a renewal application for Individual Permit No. PA0032760. The facility is a Minor Sewage Facility that discharges Tributary 47022 to Huskins Run (WWF). 100% of its flow is received from the Cowanshannock Township Sewers.

Act 14 notifications were submitted and received.

The facility is currently in the eDMR system.

Th last inspection occurred on June 19, 2025. No violations were noted.

There are no open violations in WMS for the subject Client ID (38534) as of January 21, 2026.

Proposed Changes:

- More stringent limits for Ammonia-Nitrogen are proposed
- A more stringent limit for Dissolved Oxygen is proposed

Approve	Deny	Signatures	Date
X		Carlee Wilson Carlee Wilson / Environmental Engineering Specialist	January 21, 2026
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	February 5, 2026

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.035
Latitude	40º 46' 25.56"	Longitude	-79º 22' 17.05"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Huskins Run (WWF)	Stream Code	47022
NHD Com ID	123853826	RMI	1.06
Drainage Area	0.32	Yield (cfs/mi^2)	0.025
Q_{7-10} Flow (cfs)	0.008	Q_{7-10} Basis	USGS - StreamStats
Elevation (ft)	1205	Slope (ft/ft)	-
Watershed No.	17-E	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	-

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)	68	Default
Hardness (mg/L)	100	Default
Other:	-	-

Nearest Downstream Public Water Supply Intake	PA American - Kittanning		
PWS Waters	Allegheny River	Flow at Intake (cfs)	987
PWS RMI	45.6	Distance from Outfall (mi)	18.5

Changes Since Last Permit Issuance: Q_{7-10} Flow was adjusted using StreamStats data from USGS. Elevation was changed using Google Earth.

Public Participation

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.

Treatment Facility Summary				
Treatment Facility Name: Margaret STP				
WQM Permit No.	**Issuance Date**			
0303407	03/04/2005			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Ultraviolet	0.003
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.006	15.9	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

WQM Permit No. 0303407 consists of the following: A shredder, an equalization tank, an extended aeration tank, a clarifier, and ultraviolet (UV) light disinfection. Solids are wasted to an aerobic digester.

Sludge use and disposal description and location(s): Sludge is not used; it is disposed of at an approved landfill.

Compliance History

DMR Data for Outfall 001 (from December 1, 2024, to November 30, 2025)

Parameter	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24
Flow (MGD) Average Monthly	0.0012	0.002	0.0024	0.0015	0.00202	0.0032	0.0056	0.003	0.0028	0.00209 2	0.0029	0.0028
Flow (MGD) Weekly Average	0.0013	0.0029	0.0027	0.0021	0.003	0.0036	0.0088	0.0037	0.00311	0.0026	0.0034	0.0040
pH (S.U.) Daily Minimum	7.6	7.5	7.3	7.6	6.7	6.1	7.1	7.1	7.0	7.2	7.2	6.9
pH (S.U.) Daily Maximum	7.9	7.9	7.7	8.0	7.6	7.2	7.8	7.9	7.7	7.5	7.6	7.8
DO (mg/L) Instantaneous Minimum	6.9	6.6	6.1	6.1	4.1	4.2	4.1	4.8	4.1	5.2	4.6	6.4
CBOD5 (lbs/day) Average Monthly	< 0.03	< 0.05	< 0.06	< 0.04	< 0.07	< 0.08	0.7	< 0.09	0.3	< 0.1	0.3	0.2
CBOD5 (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 3.0	< 5.0	< 3.0	18.0	< 3.0	16.0	< 5.0	11.0	7.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	2.0	4.0	5.0	3.0	4.0	8.0	11.0	7.0	7.0	5.0	6.0	8.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	220.0	253.0	269.0	287.0	285.0	299.0	252.0	258.0	294.0	280.0	237.0	323.0
BOD5 (mg/L) Raw Sewage Influent Instantaneous Maximum	248.0	315.0	270.0	311.0	321.0	329.0	285.0	268.0	338.0	325.0	261.0	402.0
TSS (lbs/day) Average Monthly	0.04	0.05	0.1	0.07	0.3	0.2	1.5	< 0.1	0.3	0.1	0.6	0.5
TSS (lbs/day) Raw Sewage Influent Average Monthly	3.0	5.0	6.0	4.0	5.0	10.0	10.0	6.0	6.0	5.0	5.0	10.0
TSS (mg/L) Average Monthly	4.0	3.0	5.0	7.0	21.0	6.0	25.0	< 4.0	15.0	7.0	23.0	19.0

TSS (mg/L) Raw Sewage Influent Average Monthly	270.0	290.0	313.0	349.0	399.0	380.0	250.0	212.0	276.0	267.0	194.0	407.0
TSS (mg/L) Raw Sewage Influent Instantaneous Maximum	324.0	314.0	346.0	372.0	452.0	384.0	296.0	228.0	280.0	280.0	202.0	512.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1.0	< 42.0	51.0	< 3.0	< 14.0	1617.0	177.0	< 449.0	30.0	< 157.0	1505.0
E. Coli (No./100 ml) Instantaneous Maximum												344.6
Total Nitrogen (mg/L) Annual Average												< 0.5
Ammonia (lbs/day) Average Monthly	< 0.01	< 0.002	< 0.002	< 0.002	< 0.007	< 0.003	1.6	0.3	0.05	< 0.002	0.01	0.02
Ammonia (mg/L) Average Monthly	< 0.6	< 0.1	< 0.1	< 0.1	< 0.3	< 0.1	36.4	9.1	1.6	< 0.1	0.4	0.7
Total Phosphorus (mg/L) Annual Average												5.93
UV Dosage (mjoules/cm²) Average Monthly	13.8	13.9	13.9	12.8	9.2	10.2	14.7	12.7	13.7	13.8	13.3	13.7
UV Dosage (mjoules/cm²) Daily Maximum	14.1	14.2	14.2	14.2	14.3	14.1	14.3	14.2	14.2	14.1	13.9	14.1

Compliance History

Effluent Violations for Outfall 001, from: January 1, 2025, To: November 30, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	05/31/25	Geo Mean	1617.0	No./100 ml	200	No./100 ml
Ammonia	05/31/25	Avg Mo	1.6	lbs/day	.2	lbs/day
Ammonia	05/31/25	Avg Mo	36.4	mg/L	4.5	mg/L

Comments: Effluent violations are not considered chronic or significant.

Table 1. 5-Year Inspection Report

Client	Site Name	Inspection Date	Inspection Type	Inspection Result	Inspector
INDIANA CNTY MUNI SVC AUTH	MARGARET STP	03/28/2023	Chapter 94 Inspection	No Violations Noted	STONESIFER, CLINTON
INDIANA CNTY MUNI SVC AUTH	MARGARET STP	03/29/2021	Chapter 94 Inspection	No Violations Noted	STONESIFER, CLINTON
INDIANA CNTY MUNI SVC AUTH	MARGARET STP	02/29/2024	Compliance Evaluation	No Violations Noted	STONESIFER, CLINTON
INDIANA CNTY MUNI SVC AUTH	MARGARET STP	06/19/2025	Routine/Partial Inspection	No Violations Noted	STONESIFER, CLINTON

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .035
Latitude 40º 46' 25.00" **Longitude** -79º 22' 18.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

Table 2. The Minimum Technology-Based and BPJ Standards for Individual Sewage Permits

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)
Total Nitrogen	Report	Annual Average	-	92a.61
Total Phosphorous	Report	Annual Average	-	92a.61
E. Coli	Report	IMAX	-	92a.61

The above limits are minimum technology-based and BPJ standards for individual sewage permits which are found in the Department's "*Establishing Effluent Limitations for Individual Sewage Permits"* document (SOP. No. BCW-PMT-033). The limits for pH are technology-based on Chapter 93.7. The limits for Total Suspended Solids and Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for E. Coli, Total Nitrogen, and Total Phosphorus are based on Chapter 92a.61.

Water Quality-Based Limitations

Table 3. WQM 7 Inputs

Outfall 001	River Mile Index (RMI)	1.06
	Elevation (ft)	1205
	Drainage Area	0.32
	LFY	0.025
	Q7-10 Flow	0.008
Endpoint	River Mile Index (RMI)	0
	Elevation (ft)	1106
	Drainage Area	1.44
	LFY	0.029
	Q7-10 Flow	0.042

Table 4. WQM 7 Results

Parameter	Limit (mg/l)	SBC	Model
CBOD5	25	Average Monthly	WQM 7
	50	IMAX	
NH3 - N	1.7	Average Monthly	
	3.4	Instantaneous Maximum	
DO	5.0	Inst. Minimum	

The parameters in Table 3 were found using google earth, StreamStats, and eMapPA. These parameters are entered into the Department's Water Quality Modeling program (WQM 7) to determine WQBELs for CBOD5, NH3-N, and Dissolved Oxygen.

Table 4 displays the results of this evaluation. The limits for CBOD5 will remain the same. However, more stringent limits are proposed for NH3-N and DO. The attached results of the WQM 7.0 stream model (Attachment 5) indicate a monthly average limit (AML) of 1.7 mg/L and an instantaneous maximum limit (IMAX) of 3.4 mg/l for the months of May through October for NH3-N. A seasonal multiplier of 3 is then applied to find an AML of 5.1 mg/l and an IMAX limit of 10.2 mg/l for the months of November through April. Mass limits were calculated for the AMLs using the formula below:

Mass based limit (lb./day) = concentration limit (mg/L) × design flow (MDG) × 8.34

0.5 (lb./day) = 1.7 (mg/l) × 0.035 (MGD) × 8.34
1.5 (lb./day) = 5.1 (mg/l) × 0.035 (MGD) × 8.34

The goal Dissolved Oxygen concentration for Warm Water Fisheries (WWF) is 5.0 mg/l. The model suggests a minimum limit of 5.0 mg/l be imposed.

A 3-year compliance schedule has been implemented for both DO and NH3-N.

Notes

Total Residual Chlorine limits are not imposed because Ultraviolet (UV) disinfection is used.

The ratio of stream flow ($Q_{7\text{-}10}$) to wastewater flow (design flow) is less than 3:1. However, the more stringent standards in DEP's *Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers* (391-2000-014) are not applied since they cannot be achieved, and the receiving stream is not impaired.

Influent monitoring for Total Suspended Solids (TSS) and BOD5 will be retained as recommended in the *New and Reissuance Sewage Individual NPDES Permit Applications* (SOP No. BCW-PMT-002) for POTWs with design flows > 2,000 GPD, and as authorized under Chapter 92a.61.

Anti-Backsliding

Table 5. Current Permit Effluent Limitations for Outfall 001

Parameter	Effluent Limitations					
	Mass Units (lbs/day) (1)		Concentrations (mg/L)			
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
Flow (MGD)	Report	Report Wkly Avg	XXX	XXX	XXX	XXX
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX
CBOD5	1.3	XXX	XXX	25.0	XXX	50
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report
TSS	1.5	XXX	XXX	30.0	XXX	60
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX
Ammonia Nov 1 - Apr 30	0.7	XXX	XXX	13.5	XXX	27
Ammonia May 1 - Oct 31	0.2	XXX	XXX	4.5	XXX	9
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX
UV Dosage (mjoules/cm²)	XXX	XXX	XXX	Report	Report	XXX

Comments: More stringent limits are proposed for the highlighted items above. All other permit limitations, monitoring requirements, and conditions will be retained in the next permit.

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 End of Interim Period 1.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Wkly Avg	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	1.3	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Total Suspended Solids	1.5	XXX	XXX	30.0	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	0.7	XXX	XXX	13.5	XXX	27.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	0.2	XXX	XXX	4.5	XXX	9.0	2/month	Grab
Ultraviolet light dosage (mjoules/cm²)	XXX	XXX	XXX	Report	Report	XXX	1/day	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection

Proposed Effluent Limitations and Monitoring Requirements

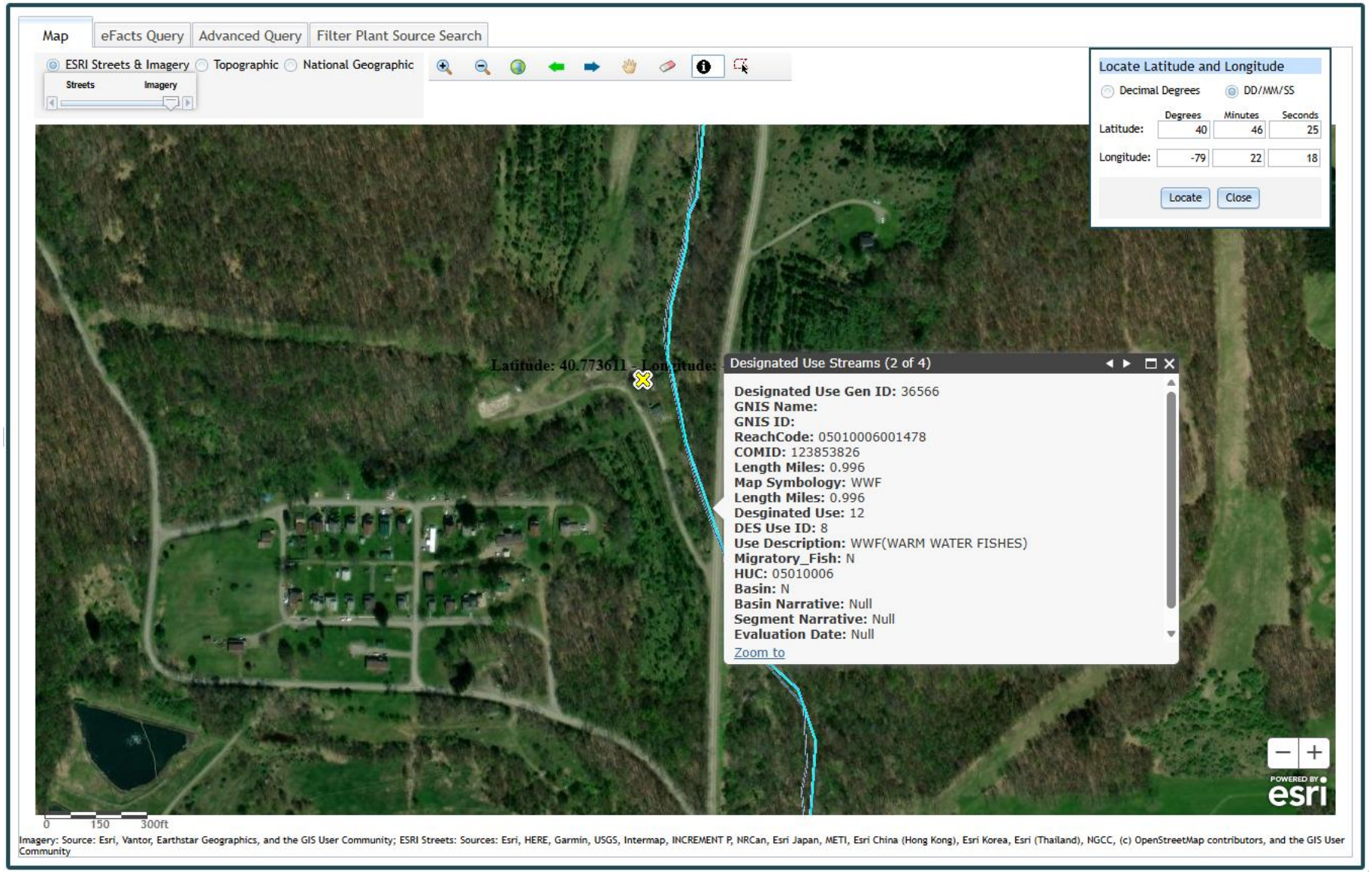
The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants).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

Outfall 001, Effective Period: End of Interim Period 1 through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Wkly Avg	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	1.3	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Total Suspended Solids	1.5	XXX	XXX	30.0	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	1.5	XXX	XXX	5.1	XXX	10.2	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	0.5	XXX	XXX	1.7	XXX	3.4	2/month	Grab
Ultraviolet light dosage (mjoules/cm²)	XXX	XXX	XXX	Report	Report	XXX	1/day	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection

Attachment 1
eMapPA – Receiving Stream Designation and Location

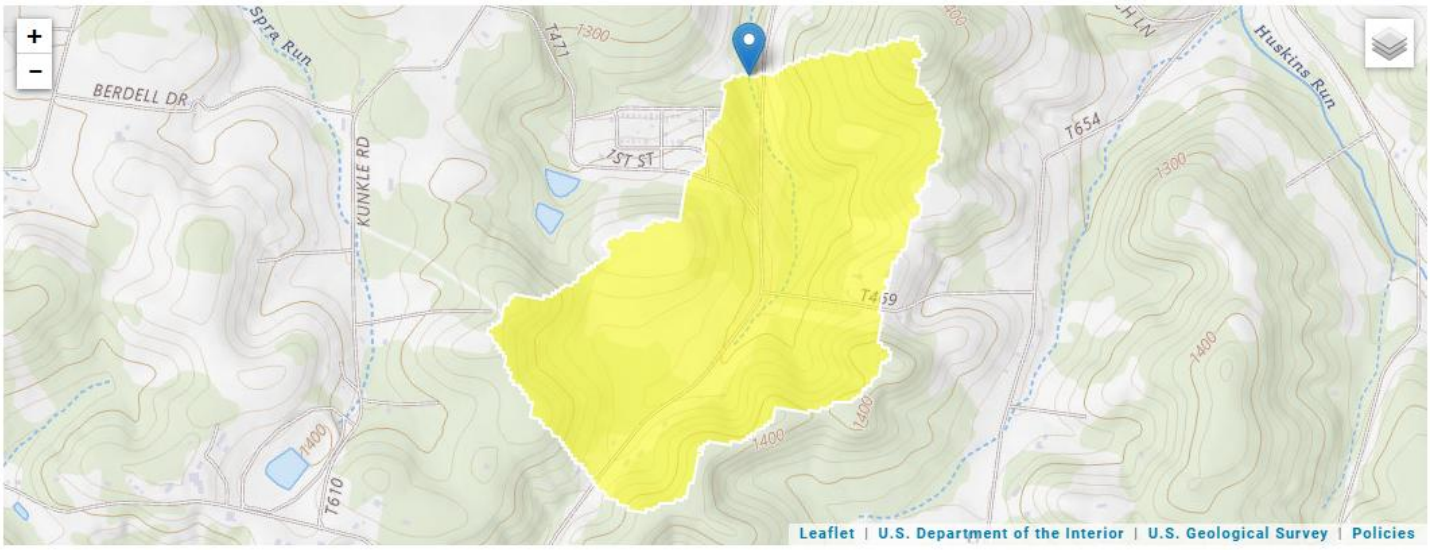


Attachment 2
Google Earth – Aerial Site View

Attachment 3
StreamStats Report – Outfall 001

StreamStats Report

Region ID:	PA
Clicked Point (Latitude, Longitude):	40.77336, -79.37124
Time:	2026-01-21 10:53:01 -0500



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.32	square miles	2.33	1720
ELEV	Mean Basin Elevation	1338.8	feet	898	2700
PRECIP	Mean Annual Precipitation	41	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.025	ft^3/s
30 Day 2 Year Low Flow	0.0379	ft^3/s
7 Day 10 Year Low Flow	0.00848	ft^3/s
30 Day 10 Year Low Flow	0.0132	ft^3/s
90 Day 10 Year Low Flow	0.0205	ft^3/s

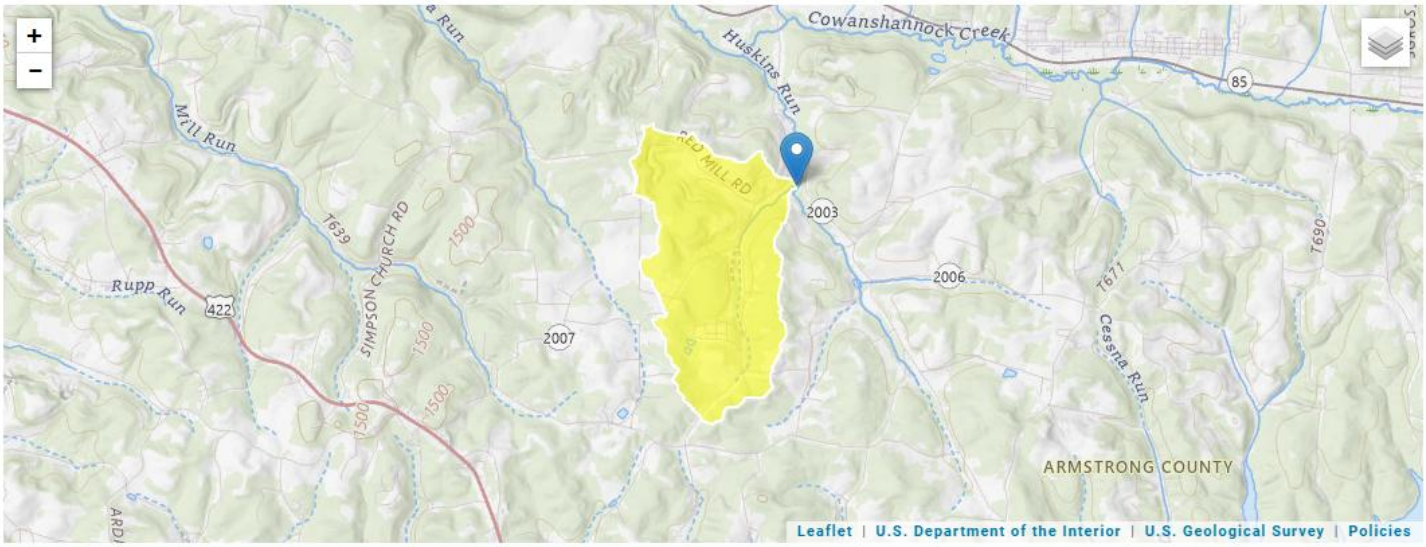
Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Attachment 4
StreamStats Report - Endpoint

StreamStats Report

Region ID:	PA
Clicked Point (Latitude, Longitude):	40.78589, -79.36382
Time:	2026-01-21 11:00:13 -0500



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.44	square miles	2.33	1720
ELEV	Mean Basin Elevation	1319.1	feet	898	2700
PRECIP	Mean Annual Precipitation	41	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.115	ft^3/s
30 Day 2 Year Low Flow	0.17	ft^3/s
7 Day 10 Year Low Flow	0.0422	ft^3/s
30 Day 10 Year Low Flow	0.0639	ft^3/s
90 Day 10 Year Low Flow	0.0976	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Attachment 5
WQM 7 Stream Model

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
17E	47022	Trib 47022 to Huskins Run	**1.060**	1205.00	0.32	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.025	0.01	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Margaret STP	PA0252506	0.0350	0.0350	0.0350	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
17E	47022	Trib 47022 to Huskins Run	**0.000**	1106.00	1.44	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.029	0.04	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
17E	47022	Trib 47022 to Huskins Run

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.060	0.01	0.00	0.01	.0541	0.01769	.33	2.98	9.03	0.06	1.024	24.36	7.00
Q1-10 Flow												
1.060	0.01	0.00	0.01	.0541	0.01769	NA	NA	NA	0.06	1.052	24.57	7.00
Q30-10 Flow												
1.060	0.01	0.00	0.01	.0541	0.01769	NA	NA	NA	0.06	0.998	24.16	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
17E	47022	Trib 47022 to Huskins Run

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.060	Margaret STP	11.48	12.56	11.48	12.56	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.060	Margaret STP	1.44	1.73	1.44	1.73	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
1.06	Margaret STP	25	25	1.73	1.73	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
17E	47022	Trib 47022 to Huskins Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.060	0.035	24.356	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.979	0.330	9.031	0.063
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.04	1.450	1.51	0.979
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.417	29.464	Owens	5
Reach Travel Time (days)			
1.024			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.102	18.38	1.37	6.46
0.205	15.33	1.24	6.80
0.307	12.79	1.12	7.07
0.410	10.67	1.01	7.29
0.512	8.90	0.91	7.47
0.614	7.42	0.83	7.62
0.717	6.19	0.75	7.62
0.819	5.17	0.68	7.62
0.922	4.31	0.61	7.62
1.024	3.59	0.55	7.62

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
17E	47022	Trib 47022 to Huskins Run

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.060	Margaret STP	PA0252506	0.035	CBOD5	25		
				NH3-N	1.73	3.46	
				Dissolved Oxygen			5

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