pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0085022**
Facility Type	**Municipal**	APS ID	**731**
Major / Minor	**Minor**	Authorization ID	**1460203**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Conoy Township**	Facility Name	**Conoy Township Falmouth WWTP**
Applicant Address	211 Falmouth Road	Facility Address	2515 River Road
	Bainbridge, PA 17502		Bainbridge, PA 17502
Applicant Contact	Jennifer Rabuck	Facility Contact	Jennifer Rabuck
Applicant Phone	(717) 367-4991	Facility Phone	(717) 367-4991
Client ID	77263	Site ID	239235
Ch 94 Load Status	Existing Organic Overload	Municipality	Conoy Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	October 31, 2023	EPA Waived?	Yes
Date Application Accepted	November 15, 2023	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Conoy Township has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The existing permit was issued April 30, 2019, and became effective on June 1, 2019, authorizing discharge of treated sewage from the facility into UNT 9213 to the Susquehanna River. The existing permit expiration date was May 31, 2024, and the permit has been administratively extended since that time. An amendment was issued to the NPDES on December 28, 2023. The amendment was due to the change from chlorine to UV disinfection; the TRC limit was removed from the permit and a UV monitoring requirement was added.

Changes in this renewal: E. Coli monitoring has been added to the permit.

Sludge use and disposal description and location(s): Aerobic digester tank with offsite disposal at Conoy Township's Bainbridge WWTP

Supplemental information for this facility is provided at the end of this fact sheet.

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.

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	June 12, 2024
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	June 13, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.025
Latitude	40º 7' 16"	Longitude	76º 42' 40"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Susquehanna River (WWF, MF)	Stream Code	9213
NHD Com ID	57463595	RMI	0.1
Drainage Area	1.57 mi^2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	0.188	Q_{7-10} Basis	USGS Stream Gage
Elevation (ft)	274	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	13.9

Changes Since Last Permit Issuance: Stream flows were determined by establishing a correlation to the yield of USGS gage station No. 01576500 on Conestoga River. The Q_{7-10} and drainage area at the gage station are 38.6 ft^3/s and 324 mi^2, respectively. The Q_{7-10} runoff rate at the gage station was calculated as follows:

- Q_{7-10} = (38.6 ft^3/s)/324 mi^2 = 0.12 $ft^3/s/mi^2$

The drainage area at the discharge point = 1.57 mi^2.

The Q_{7-10} at the discharge point = 1.57 mi^2 x 0.12 $ft^3/s/mi^2$ = 0.188 ft^3/s.

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	UV Disinfection	0.025
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.025	50	Existing Organic Overload	Aerobic Digester	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: The treatment process consists of: Comminutor and Barscreen, 1 Equalization Tank, 1 Extended Aeration Tank, 1 Final Clarifier, UV Disinfection Process, 1 Sludge Holding Tank, Outfall 001 to UNT 9213 to Susquehanna River.

Compliance History	
Summary of DMRs:	A summary of past DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	3/27/2019: A Notice of Violation (NOV) was issued due to effluent violations for TSS, Fecal Coliform, Ammonia-N, and $CBOD_5$. 4/23/2019: A routine inspection was conducted. The clarifier influent had a heavy accumulation of solids, foam and grease. The effluent had a slight brown tint with fine suspended solids. Field results were within permitted limits. 5/19/2020: A NOV was issued due to effluent violations for Fecal Coliform , TSS, and $CBOD_5$. 6/9/2020: An administrative inspection was conducted. All treatment units were operable, and there were no outstanding issues or needs. 9/14/2020: A routine inspection was conducted. The clarifier effluent trough appeared slightly cloudy. Effluent samples revealed exceedances of pH and TRC. The effluent appeared cloudy with coarse brown suspended solids. 7/8/2021: A routine partial inspection was conducted. The clarifier appeared mostly clear with large pin floc particles. The effluent trough appeared clear and free of excessive algae. The chlorine contact tank contents appeared mostly clear. The WWTP was not discharging during the inspection. The outfall was checked. The area just below the outfall appeared clear due to recent operator cleaning. An accumulation of sewage solids was visible approximately 8 feet from the outfall within UNT to Susquehanna River. Solids were visible approximately 20 feet downstream. Accumulations were 1 inch deep and appeared dark brown with a sewage odor. The solids were cleared from the outfall on 7/9/21. 9/14/2021: A NOV was issued due to the violations documented during the 7/8/21 inspection, as well as effluent violations.

Other Comments: There are no open violations for this Applicant.

Compliance History

DMR Data for Outfall 001 (from May 1, 2023 to April 30, 2024)

Parameter	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23
Flow (MGD) Average Monthly	0.021	0.015	0.152	0.0167	0.0147	0.0120	0.0119	0.0122	0.0117	0.0119	0.0118	0.0121
Flow (MGD) Daily Maximum	0.077	0.027	0.0195	0.0274	0.0357	0.0191	0.0175	0.0199	0.0166	0.0261	0.0179	0.0177
pH (S.U.) Instantaneous Minimum	6.6	6.5	7.12	6.75	6.61	6.70	6.68	6.87	6.52	6.26	6.49	6.28
pH (S.U.) Instantaneous Maximum	7.8	7.5	7.53	8.05	7.65	7.94	7.66	7.8	7.83	7.64	7.51	7.31
DO (mg/L) Instantaneous Minimum	5.3	7.0	7.21	8.89	8.19	7.73	6.43	6.12	6.21	6.40	6.96	6.86
TRC (mg/L) Average Monthly						GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum						GG	GG	GG	GG	GG	GG	GG
CBOD5 (lbs/day) Average Monthly	1.1	0.6	0.40	0.82	1.16	0.48	0.53	0.24	0.38	0.14	0.59	0.59
CBOD5 (lbs/day) Weekly Average	1.4	0.8	0.51	1.22	1.42	0.69	0.64	0.26	0.58	0.27	0.60	0.68
CBOD5 (mg/L) Average Monthly	5.7	5.1	3.25	6.60	10.70	4.85	5.15	2.40	4.45	2.40	6.65	5.20
CBOD5 (mg/L) Weekly Average	6.4	6.6	4.40	9.20	15.20	6.90	6.80	2.70	6.90	2.80	7.0	5.70
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	36	22	10.63	20.66	16.41	8.64	8.74	6.32	2.09	15.17	4.87	7.61
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	49	26	13.09	24.40	17.393	9.33	9.79	6.65	3.16	26.15	5.48	7.87
BOD5 (mg/L) Raw Sewage Influent Average Monthly	211	206	84.25	172.50	147	88.35	80.95	64.20	23.75	154.30	55.05	67.65

TSS (lbs/day) Average Monthly	3.2	1.1	0.50	1.54	1.56	0.75	0.55	0.50	0.37	1.64	0.78	0.91
TSS (lbs/day) Raw Sewage Influent Average Monthly	54	30	14.17	22.20	11.32	12.59	24.33	5.90	1.98	8.64	5.57	6.03
TSS (lbs/day) Raw Sewage Influent Daily Maximum	60	38	21.62	32.62	12.55	17.51	37.70	6.47	2.09	13.66	6.47	6.57
TSS (lbs/day) Weekly Average	4.5	1.5	0.53	2.65	1.96	1.0	0.61	0.62	0.41	2.90	0.88	1.07
TSS (mg/L) Average Monthly	15.0	9.7	4	12.00	14.50	7.65	5.10	5.0	4.20	16.0	8.85	8.0
TSS (mg/L) Raw Sewage Influent Average Monthly	271	285	110.00	179.00	97.00	127.50	245.00	60.0	22.50	87.50	63.0	54.0
TSS (mg/L) Weekly Average	16.0	12.8	4	20.0	21.0	10.00	5.20	6.0	4.40	28.0	10.40	9.0
Fecal Coliform (No./100 ml) Geometric Mean	120	138	28	54	61.85	15.91	62.03	138.56	21.75	61.48	113.84	53.38
Fecal Coliform (No./100 ml) Instantaneous Maximum	235	164	192	140	85.00	23.00	296.00	320.0	43.00	140.00	120.0	77.0
UV Intensity (mW/cm²) Instantaneous Minimum	0.1	0.7	0.6	0.7	0.7							
Nitrate-Nitrite (lbs/day) Average Monthly	5.52	5.07	4.93	4.90	4.41	4.61	3.22	1.56	4.22	4.37	4.09	5.12
Nitrate-Nitrite (mg/L) Average Monthly	30.90	44.3	39.60	41.35	39.25	47.05	27.125	15.465	47.5	43.6	45.9	45.65
Total Nitrogen (lbs/day) Average Monthly	5.85	5.38	5.22	5.31	4.83	4.70	3.82	2.74	4.39	4.64	4.28	5.30
Total Nitrogen (mg/L) Average Monthly	32.50	47.05	41.95	44.70	42.95	48.05	33.3	27.75	49.45	46.2	47.95	47.30
Ammonia (lbs/day) Average Monthly	< 0.04	0.03	0.02	0.04	0.03	0.03	0.26	1.07	0.04	0.06	0.07	0.03
Ammonia (mg/L) Average Monthly	< 0.2	0.3	0.13	0.33	0.27	0.27	2.77	11.03	0.50	0.64	0.82	0.22
TKN (lbs/day) Average Monthly	0.34	0.32	5.22	0.40	0.42	0.10	0.59	1.19	0.17	0.25	0.34	0.18

TKN (mg/L) Average Monthly	1.61	2.80	41.95	3.34	3.72	1.02	6.13	12.35	1.935	2.54	3.81	1.65
Total Phosphorus (lbs/day) Average Monthly	0.73	0.73	0.72	0.63	0.62	0.62	0.84	0.71	0.72	0.80	0.64	0.71
Total Phosphorus (mg/L) Average Monthly	4.29	6.38	5.80	5.32	5.62	6.37	7.735	7.14	8.155	7.975	7.225	6.33

Compliance History

Effluent Violations for Outfall 001, from: June 1, 2023 To: April 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Ammonia	09/30/23	Avg Mo	11.03	mg/L	7.0	mg/L

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

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)	5.2	8.3	XXX	25	40	50	2/month	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids	6.3	9.4	XXX	30	45	60	2/month	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ultraviolet light intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	4.3	XXX	XXX	21	XXX	42	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	1.4	XXX	XXX	7.0	XXX	21	2/month	8-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .025
Latitude 40º 7' 16.00" **Longitude** -76º 42' 40.00"
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

$CBOD_5$, NH_3-N

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 13.77 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The flow data used to run the model was acquired from USGS PA StreamStats and is included as an attachment. The $CBOD_5$ limit is the same as the existing permit limit, which will remain in the permit. The existing NH_3-N limit of 7.0 mg/l is more stringent and will remain in the permit.

There are no industrial/commercial users contributing industrial wastewater to the system and Conoy Township does not currently have an EPA-approved pretreatment program. Accordingly, evaluating reasonable potential of toxic pollutants is not necessary as effluent levels of toxic pollutants are expected to be insignificant.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed 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). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As

part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on December 17, 2019, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads 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. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow.

This facility is considered a Phase 5 non-significant facility with a design flow less than 0.2 MGD but greater than 0.002 MGD. According to the Phase 3 WIP, TN and TP monitoring is recommended for this facility, which is consistent with the existing permit.

Dissolved Oxygen

A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This limit is included in the existing NPDES permit based BPJ. It is still recommended to include this limit in the draft permit to ensure that the facility continues to achieve compliance with DEP water quality standards.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. Fecal coliform IMAX limits have been added to the permit.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of 0.002 – 0.05 mgd will include E. Coli monitoring with a frequency of 1/year. This parameter has been added to the renewal permit.

Influent BOD_5 and Total Suspended Solids (TSS) Monitoring

As a result of negotiation with US EPA, influent monitoring of TSS and BOD_5 are required for any publicly owned treatment works (POTWs); therefore, influent sampling of BOD_5 and TSS are included in the permit. An 8-hr composite sample type will be required to be consistent with the sampling frequency for effluent TSS and $CBOD_5$.

UV Monitoring

DEP's SOP No. BPNPSM-PMT-033 recommends at a minimum, routine monitoring of UV transmittance, dosage, or intensity when the facility is utilizing a UV disinfection system. The monitoring should occur at the same frequency as would be used for TRC. Presumably, this recommendation was implemented as a part of the proper operation and maintenance requirement specified in Part B of the NPDES permit, requesting permittees to demonstrate the effectiveness of UV disinfection system. This is a reasonable approach and has been assigned to other facilities equipped with similar technology. Accordingly, a parameter for UV Intensity will be included in the permit; the same as the existing permit requirements.

Sampling Frequency & Sample Type

The monitoring requirements were established based on BPJ and/or Table 6-3 of DEP's Technical Guidance No. 362-0400-001.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream 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.

303(d) Listed Streams

The discharge is located on a stream segment that is listed as attaining uses.

Class A Wild Trout Fisheries

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

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions are addressed by DEP in this fact sheet.

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" (386-0400-001), 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	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
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	5.2	8.3	XXX	25	40	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	6.3	9.4	XXX	30	45	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	4.3	XXX	XXX	21.0	XXX	42	2/month	8-Hr Composite

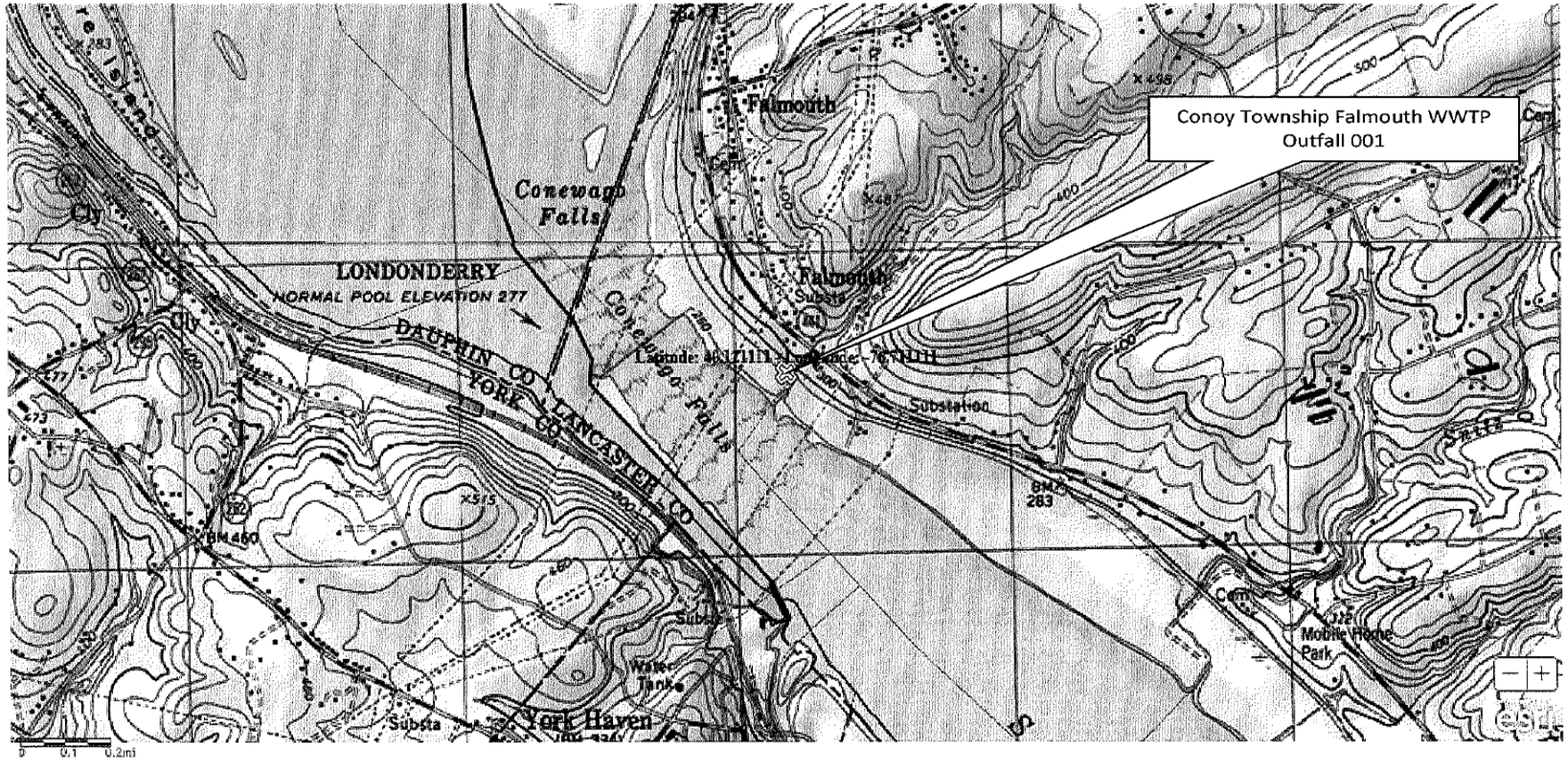
Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

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		
Ammonia May 1 - Oct 31	1.4	XXX	XXX	7.0	XXX	21	2/month	8-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: None

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: BCW-PMT-033
☐	Other: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Falmouth
Conewago Falls
LONDONDERRY
NORMAL POOL ELEVATION 277
DAUPHIN CO
YORK CO
LANCASTER CO
Falmouth Substa
Substation
BM 460
BM 283
Water Tank
Substa
York Haven
Mobile Home Park
0 0.1 0.2mi
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Conoy Township Falmouth WWTP PA0085022 Outfall 001 RMI = 0.1

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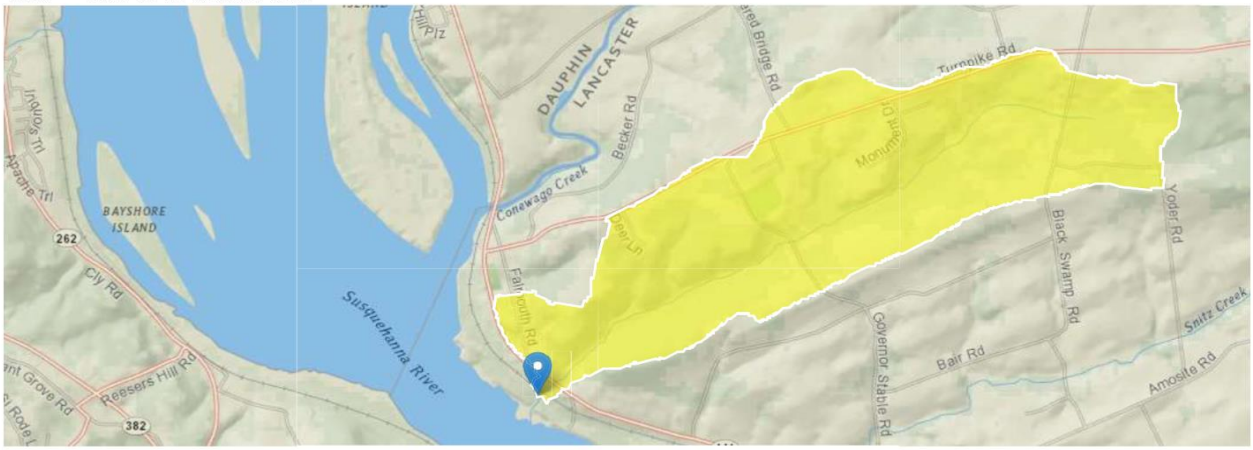

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	4.0524	degrees
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	1.57	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.36	miles per square mile
URBAN	Percentage of basin with urban development	0.1228	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [99.0 Percent (1.55 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.57	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.0524	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4	feet	4.13	5.21
URBAN	Percent Urban	0.1228	percent	0	89

Low-Flow Statistics Parameters [1.0 Percent (0.0194 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.57	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
STRDEN	Stream Density	2.36	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [99.0 Percent (1.55 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [99.0 Percent (1.55 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.124	ft^3/s
30 Day 2 Year Low Flow	0.186	ft^3/s
7 Day 10 Year Low Flow	0.0428	ft^3/s
30 Day 10 Year Low Flow	0.0688	ft^3/s
90 Day 10 Year Low Flow	0.133	ft^3/s

Low-Flow Statistics Disclaimers [1.0 Percent (0.0194 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report [1.0 Percent (0.0194 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0681	ft^3/s
30 Day 2 Year Low Flow	0.104	ft^3/s
7 Day 10 Year Low Flow	0.0232	ft^3/s
30 Day 10 Year Low Flow	0.036	ft^3/s
90 Day 10 Year Low Flow	0.0682	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.123	ft^3/s
30 Day 2 Year Low Flow	0.185	ft^3/s
7 Day 10 Year Low Flow	0.0426	ft^3/s
30 Day 10 Year Low Flow	0.0685	ft^3/s
90 Day 10 Year Low Flow	0.132	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. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.20.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Conoy Township Falmouth WWTP RMI = 0.0

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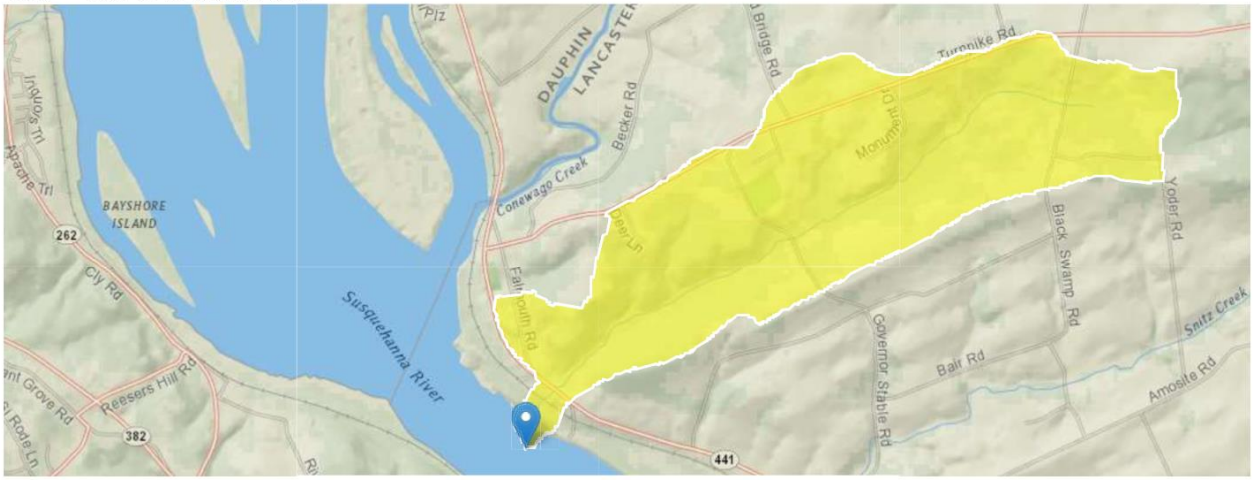

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	4.0649	degrees
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	1.6	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.44	miles per square mile
URBAN	Percentage of basin with urban development	0.369	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [99.0 Percent (1.58 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.6	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.0649	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.2	feet	4.13	5.21
URBAN	Percent Urban	0.369	percent	0	89

Low-Flow Statistics Parameters [1.0 Percent (0.0194 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.6	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
STRDEN	Stream Density	2.44	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.2	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [99.0 Percent (1.58 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [99.0 Percent (1.58 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.157	ft^3/s
30 Day 2 Year Low Flow	0.228	ft^3/s
7 Day 10 Year Low Flow	0.0569	ft^3/s
30 Day 10 Year Low Flow	0.0882	ft^3/s
90 Day 10 Year Low Flow	0.165	ft^3/s

Low-Flow Statistics Disclaimers [1.0 Percent (0.0194 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report [1.0 Percent (0.0194 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0738	ft^3/s
30 Day 2 Year Low Flow	0.11	ft^3/s
7 Day 10 Year Low Flow	0.0267	ft^3/s
30 Day 10 Year Low Flow	0.0402	ft^3/s
90 Day 10 Year Low Flow	0.0736	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.156	ft^3/s
30 Day 2 Year Low Flow	0.227	ft^3/s
7 Day 10 Year Low Flow	0.0566	ft^3/s
30 Day 10 Year Low Flow	0.0877	ft^3/s
90 Day 10 Year Low Flow	0.164	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. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.20.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

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
07G	9213	Trib 09213 to Susquehanna River	**0.100**	274.00	1.57	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	0.100	0.00	0.19	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
Falmouth WWTP	PA0085022	0.0250	0.0250	0.0250	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07G	9213	Trib 09213 to Susquehanna River	**0.000**	259.00	1.60	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	0.100	0.00	0.19	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
07G	9213	Trib 09213 to Susquehanna River

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												
0.100	0.19	0.00	0.19	.0387	0.02841	.408	5.8	14.22	0.10	0.064	20.85	7.00
Q1-10 Flow												
0.100	0.12	0.00	0.12	.0387	0.02841	NA	NA	NA	0.08	0.078	21.22	7.00
Q30-10 Flow												
0.100	0.26	0.00	0.26	.0387	0.02841	NA	NA	NA	0.11	0.055	20.66	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
07G	9213	Trib 09213 to Susquehanna River

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
0.100	Falmouth WWTP	15.15	50	15.15	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.100	Falmouth WWTP	1.81	13.77	1.81	13.77	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.10	Falmouth WWTP	25	25	13.77	13.77	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07G	9213	Trib 09213 to Susquehanna River

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.100	0.025	20.853	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.804	0.408	14.224	0.096
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.92	1.065	2.35	0.748
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.690	24.137	Owens	5
Reach Travel Time (days)			
0.064			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.006	5.88	2.34	7.77
0.013	5.84	2.33	7.85
0.019	5.80	2.32	7.91
0.026	5.76	2.30	7.96
0.032	5.72	2.29	8.01
0.038	5.68	2.28	8.05
0.045	5.64	2.27	8.09
0.051	5.60	2.26	8.11
0.057	5.56	2.25	8.11
0.064	5.52	2.24	8.11

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07G	9213	Trib 09213 to Susquehanna River

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)
0.100	Falmouth WWTP	PA0085022	0.025	CBOD5	25		
				NH3-N	13.77	27.54	
				Dissolved Oxygen			5