Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0102822**
Facility Type	**Non-Municipal**	APS ID	**1142504**
Major / Minor	**Minor**	Authorization ID	**1535871**

Applicant and Facility Information

Applicant Name	**Jones Estates Rolling Valley PA LLC**	Facility Name	**Rolling Valley Estates**
Applicant Address	2310 S Miami Boulevard	Facility Address	369 Eagle Mill Road
	Durham, NC 27703-5798		Butler, PA 16001-8789
Applicant Contact	Kellen Buss	Facility Contact	Kellen Buss
Applicant Phone	(419) 357-9091	Facility Phone	(419) 357-9091
Client ID	373254	Site ID	244074
Ch 94 Load Status	Not Overloaded	Municipality	Connoquenessing Township
Connection Status		County	Butler
Date Application Received	August 1, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	--

Purpose of Application: Renewal application for a Minor Sewage Facility

Summary of Review

On August 1, 2025, the Department received a renewal application for Rolling Valley Estates' Individual Permit No. PA0102822 that is set to expire on January 31, 2026. Rolling Valley Estates is a mobile home park with a design flow of 0.025 MGD. There is one outfall (Outfall 001) which discharges to Little Connoquenessing Creek (CWF).

Act 14 notifications were submitted and received.

The facility is currently in the eDMR system.

An inspection summary has been provided below (Table 1).

There are 24 open violations in WMS for the subject Client ID (373254) as of October 2, 2025. (Table 1)

Notes:

- Total Residual Chlorine effluent violations are considered chronic and significant.

Proposed Changes:

- Addition of E. Coli monitoring

Approve	Deny	Signatures	Date
X		Carlee Wilson Carlee Wilson / Environmental Engineering Trainee	October 2, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	October 3, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.025
Latitude	40º 51' 44.63"	Longitude	-79º 58' 34.46"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Little Connoquenessing Creek (CWF)	Stream Code	34918
NHD Com ID	126217465	RMI	---
Drainage Area	11.5 (first point of perennial conditions)	Yield (cfs/mi^2)	0.015
Q_{7-10} Flow (cfs)	0.173	Q_{7-10} Basis	USGS - StreamStats
Elevation (ft)	1038	Slope (ft/ft)	-
Watershed No.	20-C	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	Aluminum, Iron, and Manganese		
Source(s) of Impairment	Abandoned Mine Drainage (AMD)		
TMDL Status	Final	Name	Little Connoquenessing Creek Watershed

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	Harmony Borough Water Authority		
PWS Waters	Little Connoquenessing Creek	Flow at Intake (cfs)	2.0
PWS RMI	1.1	Distance from Outfall (mi)	7.0

Changes Since Last Permit Issuance: Q_{7-10} Flow was changed using updated StreamStats data.

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: Rolling Valley Estates				
WQM Permit No.	**Issuance Date**			
1073410 T-1	6/25/2024			
1073410	9/10/1973			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage			Chlorine	0.025
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.025		Not Overloaded		

Changes Since Last Permit Issuance: None

1073410 T-1

Screening and comminution, alum for Phosphorus removal, two parallel 12,500-gallon aeration tanks, two parallel 2,000-gallon settling tanks, a 3,000-gallon aerated sludge storage tank, a dosing chamber with dual siphons, two 1,600 square foot (40' x 40') intermittent surface sand filters, and tablet chlorination with a 2,073-gallon contact tank.

The influent comes into the aeration basin for secondary treatment, then goes to the clarifier, and then to the chlorine contact tank for disinfection.

Table 1. Inspection Summary of the Last 5 Years for Rolling Valley Estates

Site Name	*Inspection Date*	*Inspection Type*	*Inspection Result Description*	*Inspector*	*Number of Violations*
ROLLING VALLEY ESTATES	04/02/2025	Administrative/File Review	Violation(s) Noted	RIOS MARTINEZ, WANDA	1
ROLLING VALLEY ESTATES	12/28/2023	Administrative/File Review	Violation(s) Noted	KING, WILLIAM	1
ROLLING VALLEY ESTATES	04/05/2023	Administrative/File Review	Violation(s) Noted	OPILA, TAMI	1
ROLLING VALLEY ESTATES	01/03/2023	Administrative/File Review	Violation(s) Noted	KING, WILLIAM	1
ROLLING VALLEY ESTATES	07/21/2025	Administrative/File Review	Violation(s) Noted	SINGER, SEAN	1
ROLLING VALLEY ESTATES	08/14/2025	Compliance Evaluation	Violation(s) Noted	CARVER, MELISSA	14
ROLLING VALLEY ESTATES	10/11/2024	Administrative/File Review	Violation(s) Noted	SINGER, SEAN	3
ROLLING VALLEY ESTATES	12/20/2021	Administrative/File Review	Violation(s) Noted	KING, WILLIAM	1
ROLLING VALLEY ESTATES	05/06/2022	Administrative/File Review	Violation(s) Noted	OPILA, TAMI	1

Compliance History

DMR Data for Outfall 001 (from August 1, 2024, to July 31, 2025)

Parameter	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24
Flow (MGD) Average Monthly	0.0042	0.0039	0.0041	0.0043	0.0043	0.009	0.0041	0.004	0.0041	0.0041	0.0042	0.0041
Flow (MGD) Daily Maximum	0.0045	0.0042	0.0037	0.0045	0.0047	0.0095	0.0045	0.0044	0.0045	0.0045	0.0045	0.0045
pH (S.U.) Instantaneous Minimum	7.76	7.04	6.97	7.2	6.64	7.25	7.36	6.28	7.13	6.01	6.07	6.07
pH (S.U.) Instantaneous Maximum	8.81	8.21	7.98	8.43	7.98	7.65	7.84	7.97	8.82	8.91	7.08	6.93
DO (mg/L) Instantaneous Minimum	4.16	4.41	4.36	5.02	4.71	4.03	4.03	5.16	3.69	4.03	4.02	4.11
TRC (mg/L) Average Monthly	0.28	0.83	0.81	0.94	1.13	1.08	0.5	0.09	0.08	0.47	0.61	1.0
TRC (mg/L) Instantaneous Maximum	0.45	1.53	1.42	1.49	1.59	2.2	1.6	0.15	0.22	0.9	0.79	1.55
CBOD5 (mg/L) Average Monthly	< 2.0	3.28	2.14	< 2.0	3.23	< 2.0	2.0	2.0	23.05	6.055	< 2.0	2.0
TSS (mg/L) Average Monthly	< 5.0	< 5.0	6.5	< 5.0	< 5.0	< 5.0	5.0	6.5	5.0	5.0	5.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	1.0	14.83	1.0	1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	1.0	22	1.0	1.0
Total Nitrogen (mg/L) Average Monthly	31.05	22.59	10.18	12.06	17.95	22.65	1.66	29.3	29.3	46.7	12.93	1.05
Ammonia (mg/L) Average Monthly	1.765	0.328	0.27	< 0.15	7.3575	0.15	0.45	0.317	0.317	0.1015	0.55	0.65
Total Phosphorus (mg/L) Average Monthly	2.91	0.6	0.72	0.39	0.78	0.62	0.15	1.28	1.28	6.09	1.05	0.50
Total Aluminum (mg/L) Annual Average								0.249				
Total Iron (mg/L) Annual Average								< 0.03				
Total Manganese (mg/L) Annual Average								0.036				

Compliance History

Effluent Violations for Outfall 001, from: September 1, 2024, To: July 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
DO	11/30/24	Inst Min	3.69	mg/L	4.0	mg/L
DO	11/30/24	Inst Min	3.69	mg/L	4.0	mg/L
TRC	02/28/25	Avg Mo	1.08	mg/L	.5	mg/L
TRC	06/30/25	Avg Mo	0.83	mg/L	.5	mg/L
TRC	02/28/25	Avg Mo	1.08	mg/L	.5	mg/L
TRC	03/31/25	Avg Mo	1.13	mg/L	.5	mg/L
TRC	05/31/25	Avg Mo	0.81	mg/L	.5	mg/L
TRC	09/30/24	Avg Mo	0.61	mg/L	.5	mg/L
TRC	04/30/25	Avg Mo	0.94	mg/L	.5	mg/L
TRC	03/31/25	Avg Mo	1.13	mg/L	.5	mg/L
TRC	04/30/25	Avg Mo	0.94	mg/L	.5	mg/L
TRC	05/31/25	Avg Mo	0.81	mg/L	.5	mg/L
TRC	06/30/25	Avg Mo	0.83	mg/L	.5	mg/L
TRC	02/28/25	IMAX	2.2	mg/L	1.6	mg/L
TRC	02/28/25	IMAX	2.2	mg/L	1.6	mg/L
CBOD5	11/30/24	Avg Mo	23.05	mg/L	20.0	mg/L
CBOD5	11/30/24	Avg Mo	23.05	mg/L	20.0	mg/L
Total Phosphorus	07/31/25	Avg Mo	2.91	mg/L	2.0	mg/L
Total Phosphorus	10/31/24	Avg Mo	6.09	mg/L	2.0	mg/L

Table 2. Open Violations in WMS for Client ID (373254)		
Inspection Program	*Violation Date*	*Violation*
Water Planning and Conservation	11/20/2024	Reporting for all water withdrawals and usage
Safe Drinking Water	04/13/2023	Failure to comply with permit condition
Safe Drinking Water	04/13/2023	Failure to comply with permit condition
Safe Drinking Water	04/13/2023	Failure to comply with permit condition
Safe Drinking Water	06/06/2023	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
Safe Drinking Water	06/06/2023	FAILURE TO COMPLY WITH UNINTERRUPTED SYSTEM SERVICE PLAN REQUIREMENTS
WPC NPDES	10/11/2024	NPDES - Violation of effluent limits in Part A of permit
WPC NPDES	10/11/2024	NPDES - Failure to monitor pollutants as required by the NPDES permit
WPC NPDES	04/02/2025	NPDES - Failure to pay annual fee
WPC NPDES	07/21/2025	NPDES - Violation of effluent limits in Part A of permit
WPC NPDES	08/14/2025	NPDES - Failure to utilize an accredited environmental laboratory for testing or analysis of environmental samples
WPC NPDES	08/14/2025	NPDES - Failure to utilize approved analytical methods
WPC NPDES	08/14/2025	NPDES - Failure to properly document monitoring activities and results
WPC NPDES	08/14/2025	NPDES - Failure to properly document monitoring activities and results
WPC NPDES	08/14/2025	NPDES - Failure to properly document monitoring activities and results
WPC NPDES	08/14/2025	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports
WPC NPDES	08/14/2025	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
WPC NPDES	08/14/2025	CSL - Failure to apply for and/or obtain a WQM permit for the construction of sewage or industrial waste facilities
WPC NPDES	08/14/2025	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
WPC NPDES	08/14/2025	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
WPC NPDES	08/14/2025	NPDES - Violation of Part C permit condition(s)
WPC NPDES	08/14/2025	Operator Certification - Owner failed to comply with the Act or Chapter 302 regulations
WPC NPDES	08/14/2025	Operator Certification - Operator failed to comply with the Act or Chapter 302 regulations
WPC NPDES	08/14/2025	Operator Certification - Owner failed to comply with the Act or Chapter 302 regulations

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .025
Latitude 40º 51' 58.00" **Longitude** -79º 58' 41.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

Table 3. Minimum Technology and BPJ Standards

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

The site received the 2.0 mg/l Total Phosphorous limit based on Chapter 96.5 due to the discharge flowing to Connoquenessing Creek which is impaired for nutrients. The limit will be retained into this renewal.

Water Quality-Based Limitations

Table 4. Water Quality Modeling Results (WQM 7.0)

Parameter	*Limit (mg/l)*	*SBC*
CBOD5	25	Average Monthly
NH3-N	12.77	Average Monthly
	25.54	IMAX
DO	4	Daily Minimum

The above parameters were evaluated using water quality modeling (Attachment 6). This model is used to determine and/or establish WQBELs to protect water quality. In this evaluation, the model provided the above limits for CBOD5, Ammonia-Nitrogen and Dissolved Oxygen. The CBOD5 and DO limits remained the same. Since the NH3-N limits recommended by the model are less stringent than the current permit, the current limits will be retained into this renewal.

Toxic Pollutants

The Toxics Management Spreadsheet was ran using the highest discharge concentration values from the facility's eDMR data (Attachment 7). No limits were recommended by the model. Since the current permit require monitoring, 1/year monitoring will be retained for Aluminum, Iron, and Manganese due to the Little Connoquenessing Creek Watershed TMDL that was made final on April 9, 2009, under the authority of Chapter 92a.61, and per the direction of the SOP for Establishing Effluent Limitations for Individual Sewage Permits.

Anti-Backsliding

Table 5. Current Permit Effluent Limitations for Outfall 001				
Parameter	**Effluent Limitations**			
	Concentrations (mg/L)			
	Minimum	**Average Monthly**	**Maximum**	**Instant. Maximum**
Flow (MGD)	XXX	Report	XXX	XXX
pH (S.U.)	6.0 Inst Min	XXX	XXX	9.0
DO	4.0 Inst Min	XXX	XXX	XXX
TRC	XXX	0.5	XXX	1.6
CBOD5	XXX	20.0	XXX	40
TSS	XXX	30.0	XXX	60
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	2000 Geo Mean	XXX	10000
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	200 Geo Mean	XXX	1000
Total Nitrogen	XXX	Report	XXX	XXX
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	12.0	XXX	36
Ammonia-Nitrogen May 1 - Oct 31	XXX	4.0	XXX	12
Total Phosphorus	XXX	2.0	XXX	4
Total Aluminum	XXX	Report Annl Avg	XXX	XXX
Total Iron	XXX	Report Annl Avg	XXX	XXX
Total Manganese	XXX	Report Annl Avg	XXX	XXX

Comments: All permit limitations, monitoring, requirements, and conditions will be retained into the next permit with the addition of E. Coli monitoring.

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	20.0	XXX	40	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	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
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	12.0	XXX	36	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	4.0	XXX	12	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite

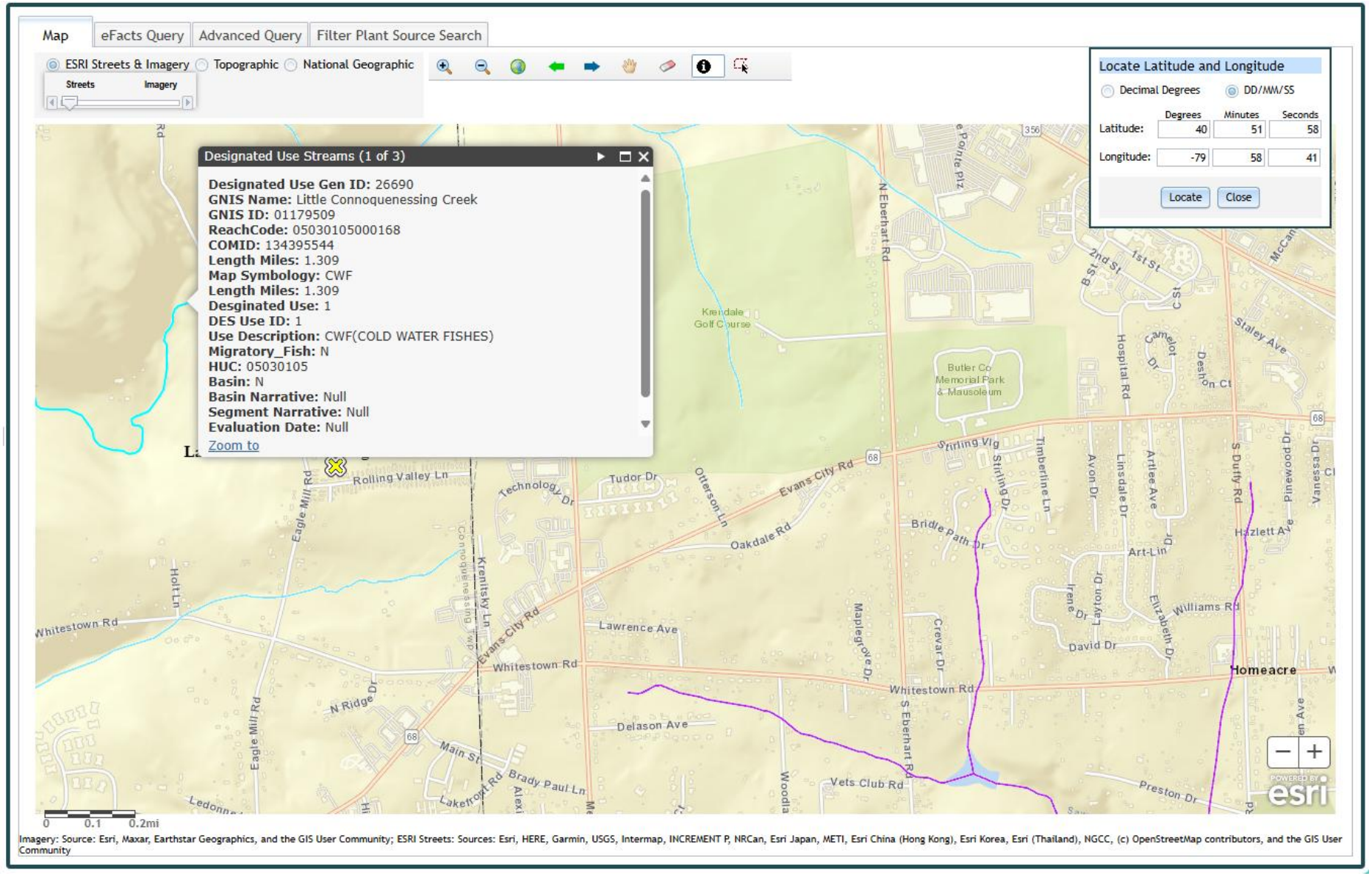
Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Aluminum	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Iron	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Manganese	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

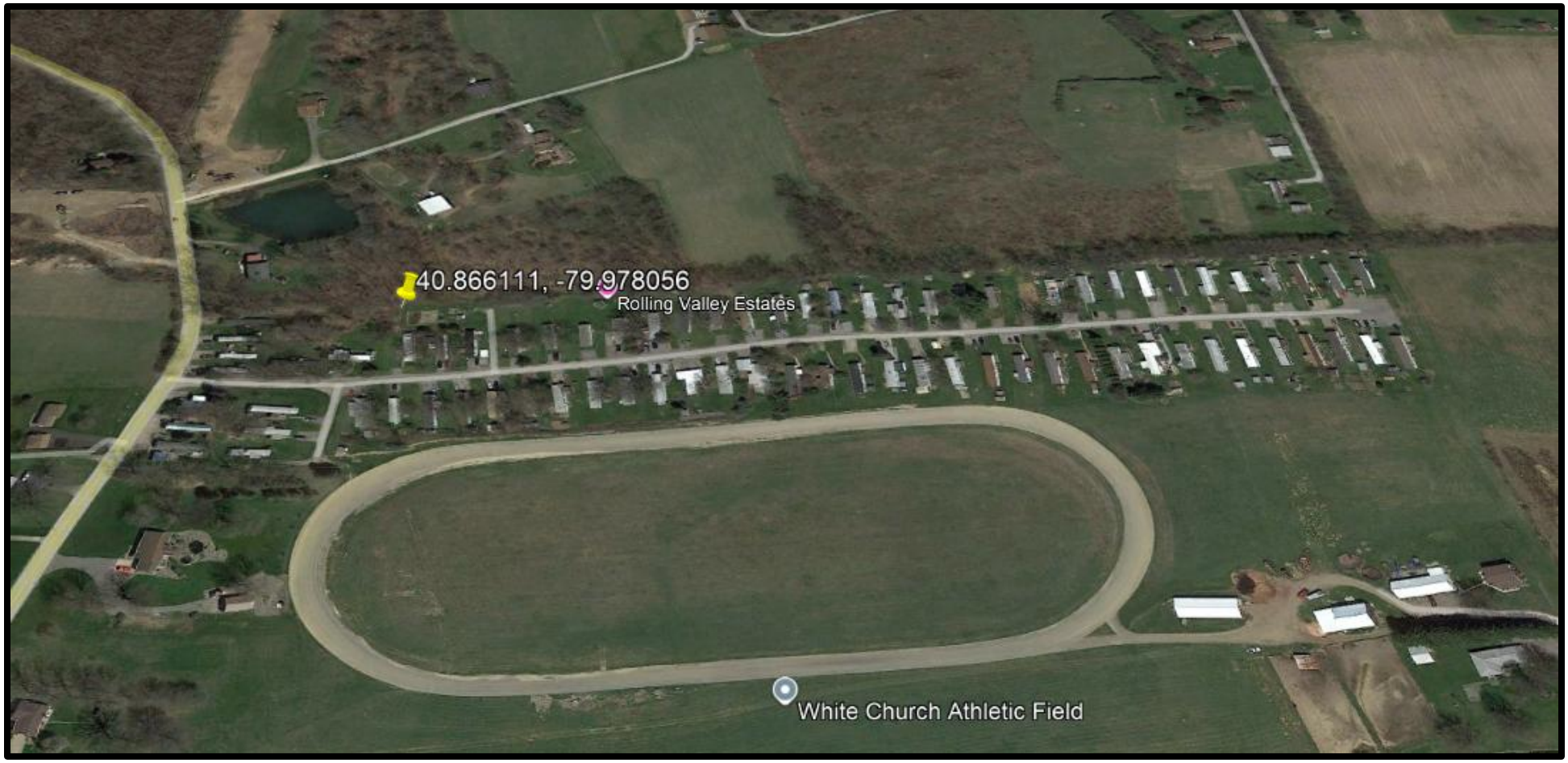
Compliance Sampling Location: Outfall 001 – after disinfection

Other Comments: Flow and Total Nitrogen are monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for Total Residual Chlorine (TRC), $CBOD_5$, Total Suspended Solids, and Fecal Coliform are technology based on Chapter 92a.47. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. The Total Phosphorus limits are technology-based on Chapter 96.5. Total Aluminum, Total Iron, and Total Manganese are monitor only based on Chapter 92a.61.

Attachment 1
eMapPA – Receiving Stream Location and Data



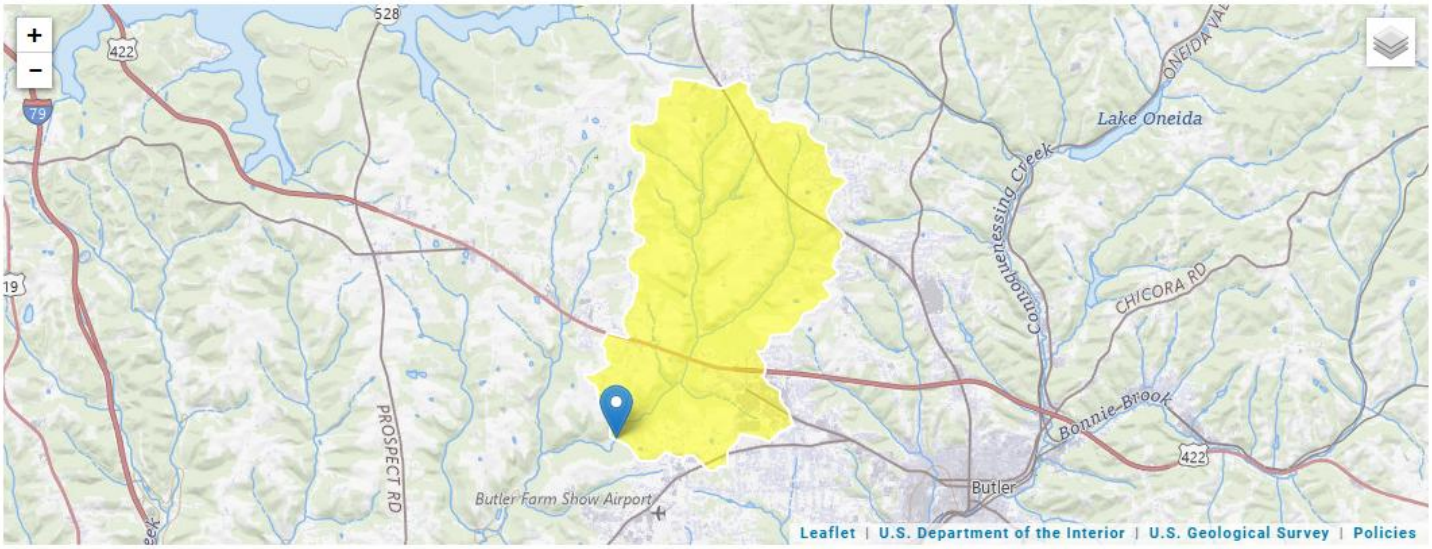
Attachment 2
Google Earth – Aerial Site View



Attachment 3
USGS StreamStats – Outfall 001

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250930172607225000
Clicked Point (Latitude, Longitude):	40.86884, -79.98532
Time:	2025-09-30 13:26:28 -0400



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	11.5	square miles	2.26	1400
ELEV	Mean Basin Elevation	1272	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.476	ft^3/s	43	43
30 Day 2 Year Low Flow	0.823	ft^3/s	38	38
7 Day 10 Year Low Flow	0.173	ft^3/s	66	66
30 Day 10 Year Low Flow	0.309	ft^3/s	54	54
90 Day 10 Year Low Flow	0.569	ft^3/s	41	41

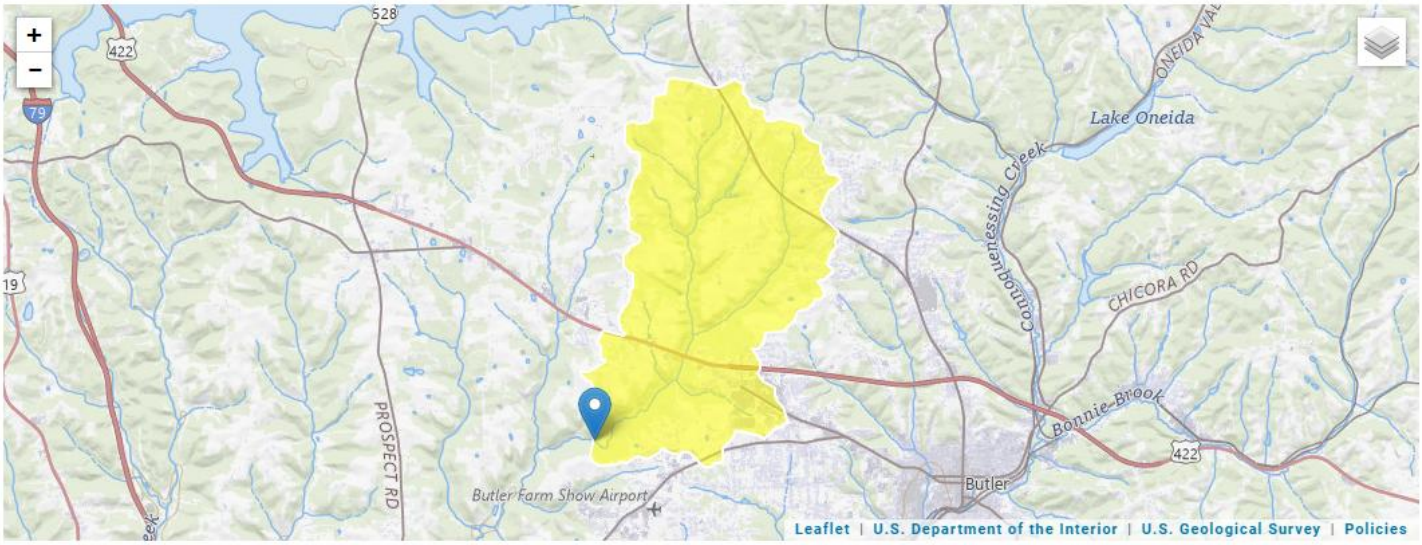
Low-Flow Statistics Citations

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
USGS StreamStats – Endpoint

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250930173906270000
Clicked Point (Latitude, Longitude):	40.86788, -79.98985
Time:	2025-09-30 13:39:26 -0400



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	11.7	square miles	2.26	1400
ELEV	Mean Basin Elevation	1271	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.485	ft^3/s	43	43
30 Day 2 Year Low Flow	0.838	ft^3/s	38	38
7 Day 10 Year Low Flow	0.176	ft^3/s	66	66
30 Day 10 Year Low Flow	0.315	ft^3/s	54	54
90 Day 10 Year Low Flow	0.58	ft^3/s	41	41

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
TRC Spreadsheet

TRC EVALUATION

0.173	= Q stream (cfs)	0.5	= CV Daily
0.025	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= %Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	1.446	1.3.2.iii	WLA cfc =	1.402
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.539	5.1d	LTA_cfc =	0.815

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Attachment 6
WQM 7.0 Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20C	34918	LITTLE CONNOQUENESSING CREEK

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)
13.000	Connoquenessing	PA0102822	0.025	CBOD5	25		
				NH3-N	12.77	25.54	
				Dissolved Oxygen			4

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
20C	34918	LITTLE CONNOQUENESSING CREE	**13.000**	1038.00	11.50	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	0.015	0.00	0.17	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
Connoquenessing	PA0102822	0.0250	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	4.00	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
20C	34918	LITTLE CONNOQUENESSING CREEK

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												
13.000	0.17	0.00	0.17	.0387	0.00227	.426	10.31	24.19	0.05	1.268	20.91	7.00
Q1-10 Flow												
13.000	0.11	0.00	0.11	.0387	0.00227	NA	NA	NA	0.04	1.541	21.29	7.00
Q30-10 Flow												
13.000	0.24	0.00	0.24	.0387	0.00227	NA	NA	NA	0.06	1.097	20.71	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
20C	34918	LITTLE CONNOQUENESSING CREEK

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
13.000	Connoquenessin	15.06	50	15.06	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
13.000	Connoquenessin	1.8	12.77	1.8	12.77	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)		
13.00	Connoquenessing	25	25	12.77	12.77	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20C	34918	LITTLE CONNOQUENESSING CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
13.000	0.025	20.914	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
10.307	0.426	24.188	0.048
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.20	0.762	2.33	0.751
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.468	14.089	Owens	5
Reach Travel Time (days)			
1.268			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.127	5.61	2.12	7.89
0.254	5.07	1.93	8.04
0.380	4.58	1.75	8.10
0.507	4.14	1.59	8.10
0.634	3.75	1.45	8.10
0.761	3.39	1.32	8.10
0.888	3.06	1.20	8.10
1.014	2.77	1.09	8.10
1.141	2.50	0.99	8.10
1.268	2.26	0.90	8.10

Attachment 7
TMS Spreadsheet

Discharge Information

Instructions | Discharge | Stream

Facility: Connoquenessing STP NPDES Permit No.: PA0102822 Outfall No.: 001

Evaluation Type: Wastewater Description: Sewage

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.025	100	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		0.249									
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L		0.036									
	Total Lead	µg/L											
	Total Manganese	µg/L		0.319									
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Connoquenessing STP, NPDES Permit No. PA0102822, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Little Connoquenessing Creek

No. Reaches to Model: 1

(●) Statewide Criteria
( ) Great Lakes Criteria
( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	034918	13.3	1038	11.5			Yes
End of Reach 1	034918	12	1026	11.7			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	13.3	0.015										100	7		
End of Reach 1	12	0.015													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	13.3														
End of Reach 1	12														

Model Results

Connoquenessing STP, NPDES Permit No. PA0102822, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 8.461 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	4,095	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ *CFC* CCT (min): 8.461 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	8,190	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ *THH* CCT (min): 8.461 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	5,460	

☑ *CRL* CCT (min): 3.128 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	

Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Aluminum	2,625	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	8,190	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	5,460	µg/L	Discharge Conc ≤ 10% WQBEL

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: