Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0081396**
Facility Type	**Non-Municipal**	APS ID	**328823**
Major / Minor	**Minor**	Authorization ID	**1463758**

Applicant and Facility Information

Applicant Name	**Peifer & Gross Inc.**	Facility Name	**Laurelwood MHP**
Applicant Address	PO Box 506	Facility Address	2580 Lewisberry Road
	Elizabethtown, PA 17022-0506		York Haven, PA 17370-9502
Applicant Contact	Irvin Peifer	Facility Contact	Timothy Kreider
Applicant Phone	(717) 367-5109	Facility Phone	(717) 808-7021
Client ID	144777	Site ID	271669
Ch 94 Load Status	Not Overloaded	Municipality	Newberry Township
Connection Status		County	York
Date Application Received	December 1, 2023	EPA Waived?	Yes
Date Application Accepted	February 2, 2024	If No, Reason	

Purpose of Application: Renewal of existing NPDES Permit

Summary of Review

Peifer & Gross, Inc. has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit for the Laurelwood MHP. The permit was last reissued to Peifer & Gross, Inc. on May 21, 2019 and amended on July 18, 2019. The permit expired on May 31, 2024 but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days. A file review of documents associated with the discharge or permittee may be available at the PA DEP southcentral regional office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO file review coordinator at 717.705.4700.

Sludge use and disposal description and location(s): Hauled offsite by Smith Disposal Facility, LLC

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		*Aaron Baar* Aaron Baar / Project Manager	February 3, 2025
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	February 4, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.0033
Latitude	40º 7' 58.31"	Longitude	-76º 48' 41.26"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Bennett Run (WWF)	Stream Code	08470
NHD Com ID	57463727	RMI	0.44
Drainage Area	0.0457 sq. miles	Yield (cfs/mi^2)	0.1386
Q_{7-10} Flow (cfs)	0.0194	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	588.22	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Wrightsville Borough Municipal Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	28.51	Distance from Outfall (mi)	~25 mi

Changes Since Last Permit Issuance: No changes since the last issuance of the Laurelwood MHP's NPDES permit.

Drainage Area

The discharge is to 0.2 mi long dry swale that discharges into an UNT to Bennett Run at RMI 0.24. A drainage area upstream of the point of first use is determined to be 0.0943 sq.mi. according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

According to StreamStats, the watershed has a Q_{7-10} of 0.0.0194 cfs. This information was used to obtain a LFY, a chronic 30-day (Q_{30-10}) and acute (Q_{1-10}) exposure stream flows for the discharge point as follows (Guidance No. 391-2000-023).

Q_{7-10} = 0.0194 cfs
Q_{30-10} = 1.36 * 0.0194 cfs = 0.0264 cfs
Q_{1-10} = 0.64 * 0.0194 cfs = 0.0124 cfs
LFY = 0.0194 cfs/0.0457 mi^2 = 0.1386 cfs/mi^2

UNT to Bennet Run

25 Pa Code §93.9 classifies the receiving water, UNT to Bennet Run, with a WWF Existing Use designation. No special protection waters are impacted by this discharge. The discharge is in a stream segment listed as attaining all uses (aquatic life and recreation) in the 2024 Integrated Report. Effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Local Watershed Total Maximum Daily Loads (TMDLs)

According to PA's 2024 Integrated Water Quality Monitoring and Assessment Report, UNT to Bennet Run in the vicinity of the point of discharge is listed as not impaired with a Category 2 classification, indicating that some but not all uses are met. The assessment status of the remaining uses may be unknown because data are insufficient to assess the water, or it may be impaired.

Public Water Supply Intake

The nearest downstream public water supply intake is the Wrightsville Borough Municipal Authority intake located on the Susquehanna River approximately 25 miles from the discharge. Considering the distance and nature, the discharge is not expected to significantly affect the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: Laurelwood MHP

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Primary	Septic Tank	Hypochlorite	0.0033

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0033		Not Overloaded	Aerobic Digestion	Other WWTP

Peifer & Gross, Inc., own and operate the Laurelwood MHP sanitary wastewater treatment facility located in Newberry Township, York County. The facility serves only the Laurelwood MHP, all wastes are residential in nature, and all sewer systems are 100% separated. With having both annual average design flow and hydraulic design capacity of 0.0033 MGD, this facility consists of 1000 gallon septic tanks x5, a 2000 gallon dosing tank, two intermittent subsurface sand filters, a chlorine contact tank and the outfall (i.e., Outfall 001). Solids are hauled offsite for disposal.

Compliance History	
Summary of DMRs:	eDMR results for the past year are not available at the time of this review due to a network issue.
Summary of Inspections:	Since the last renewal of the facility's NPDES permit, the following inspections have been logged: May 21, 2020: An administrative inspection was conducted by phone by Austen Randecker. No violations were noted. April 30, 2024: A CEI was conducted by Shawn Lesitsky. No violations were noted. Recommendations were made to put the sodium hypochlorite drum on secondary storage.

Other Comments: No open violations as of February 3, 2025

Existing Permit Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Minimum	Average Monthly	Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.2	XXX	0.5	1/day	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20	2/month	24-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
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5.0	2/month	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/year	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Maximum	Instant. Maximum		
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1year	Calculation
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/6 months	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

Compliance History

Effluent Violations for Outfall 001, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	04/30/24	IMAX	0.51	mg/L	.5	mg/L
Ammonia	05/31/24	Avg Mo	3.7	mg/L	2.5	mg/L

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0033
Latitude 40º 7' 59.98" **Longitude** -76º 48' 39.78"
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)

Comments: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges.

The model was utilized, and the model output indicated that existing WQBEL for CBOD5 and ammonia are still appropriate and protective of water quality.

A minimum of 5.0 mg/L for DO is an existing effluent limit and will remain unchanged in the draft permit as recommended by DEP's SOP. This requirement has also been assigned to other sewage facilities in the region. 5.0 mg/L is taken directly from 25 Pa. Code § 93.7(a) and it is also determined to be appropriate according to water quality modeling.

Total Residual Chlorine

Since chlorine is used for disinfection, Total Residual Chlorine (TRC) effluent levels must be regulated in accordance with 25 Pa Code §92a.48(b). DEP's TRC_CALC worksheet is utilized to determine if the existing BAT TBEL is still appropriate. The worksheet indicates that the existing limits of 0.2 mg/L (average monthly) and 0.5 mg/L (IMAX) are still protective of water quality.

Toxics

DEP's NPDES permit application for minor sewages (less than 0.1 MGD) does not require sampling for heavy metals including Total Copper, Total Lead, and Total Zinc.

Best Professional Judgment (BPJ) Limitations

Total Phosphorus & Total Nitrogen

DEP's SOP no. BPNPSM-PMT-033 recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, routine monitoring for TKN, Nitrate-Nitrite, Total Nitrogen and Total Phosphorus are recommended to be continued in this permit renewal. To bring the facility's monitoring frequencies into conformity with DEP Guidance No. 362-0400-001 (*Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits*), the monitoring frequency of TKN, Nitrate-Nitrite, Total Nitrogen and Total Phosphorus is proposed to increase from 1/6 months to 2/month. The change is further supported by an ammonia limit exceedance in May 2024 at the facility.

Additional Considerations

Flow Monitoring

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

Discharge to a Dry Swale

The limits are generally in conformity with the Department's *Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers.* (386-2000-013) and previous permits issued for the facility.

E. Coli Monitoring

In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033) and as authorized by § 92a.61 of the PA Code, annual E. Coli monitoring has been proposed in this permit. The collection method will be via grab sample.

Chesapeake Bay TMDL

The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001).

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed, in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011, Phase 2 in March 2012 and Phase 3 in December 2019. In accordance with the Phase 3 WIP, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal.

The Phase 3 WIP categorizes this facility as a phase 5 non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annual. As discussed previously, twice monthly testing of these pollutants is proposed in this permit.

Monitoring Frequency and Sample Type

Unless discussed otherwise above, the permit's monitoring frequency and sample type for all parameters will remain unchanged from the last permit renewal.

Antidegradation Requirements

All effluent limitations and monitoring requirements 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.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal. This approach is in accordance with 40 CFR §122.44(l(1).

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	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.2	XXX	0.5	1/day	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20	2/month	24-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
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

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		
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5	2/month	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

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.

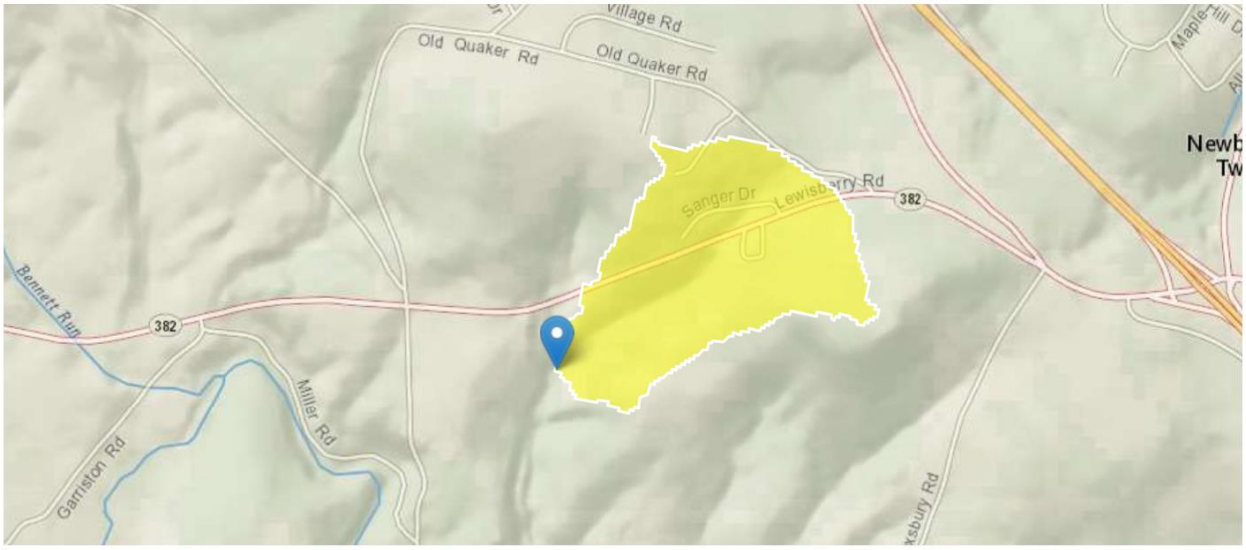
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

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:

StreamStats Report

Region ID: PA
Workspace ID: PA20250203123300860000
Clicked Point (Latitude, Longitude): 40.12938, -76.81694
Time: 2025-02-03 07:33:23 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.228	degrees
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.14	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.3	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.77	miles per square mile
URBAN	Percentage of basin with urban development	9.673	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [99.0 Percent (0.139 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	8.228	degrees	1.7	6.4
DRNAREA	Drainage Area	0.14	square miles	4.78	1150
ROCKDEP	Depth to Rock	4.3	feet	4.13	5.21

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
URBAN	Percent Urban	9.673	percent	0	89

Low-Flow Statistics Parameters [1.0 Percent (0.00108 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	0	percent	0	99
DRNAREA	Drainage Area	0.14	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
ROCKDEP	Depth to Rock	4.3	feet	3.32	5.65
STRDEN	Stream Density	2.77	miles per square mile	0.51	3.1

Low-Flow Statistics Disclaimers [99.0 Percent (0.139 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 (0.139 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0435	ft^3/s
30 Day 2 Year Low Flow	0.0543	ft^3/s
7 Day 10 Year Low Flow	0.0194	ft^3/s
30 Day 10 Year Low Flow	0.026	ft^3/s
90 Day 10 Year Low Flow	0.0349	ft^3/s

Low-Flow Statistics Disclaimers [1.0 Percent (0.00108 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 (0.00108 square miles) Low Flow Region 2]

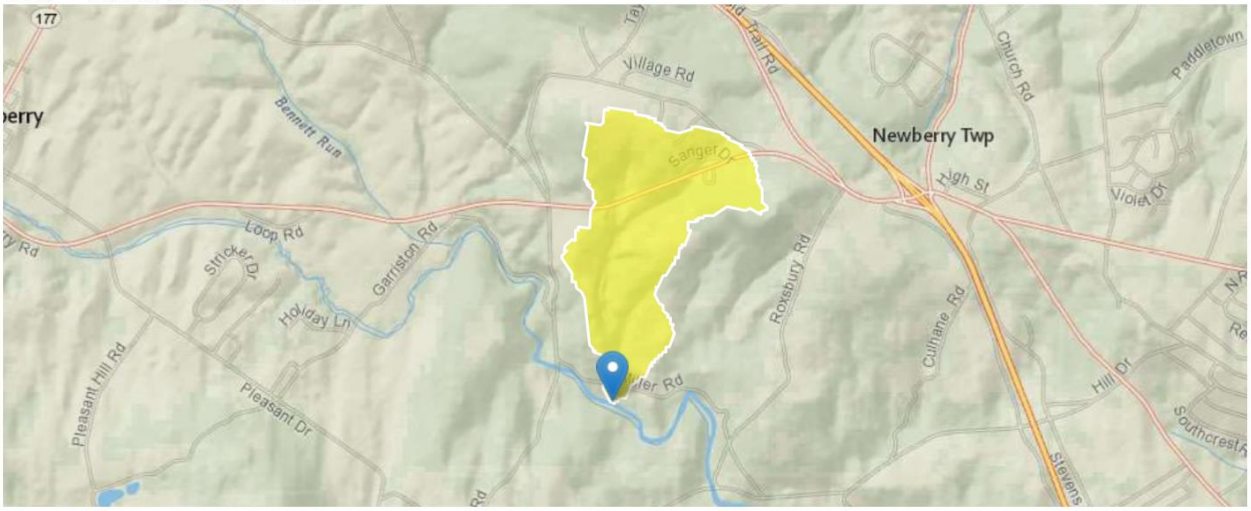
Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00469	ft^3/s
30 Day 2 Year Low Flow	0.00728	ft^3/s
7 Day 10 Year Low Flow	0.00149	ft^3/s
30 Day 10 Year Low Flow	0.00232	ft^3/s
90 Day 10 Year Low Flow	0.0045	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0431	ft^3/s
30 Day 2 Year Low Flow	0.0538	ft^3/s
7 Day 10 Year Low Flow	0.0192	ft^3/s
30 Day 10 Year Low Flow	0.0258	ft^3/s
90 Day 10 Year Low Flow	0.0346	ft^3/s

StreamStats Report

Region ID: PA
Workspace ID: PA20250203124655893000
Clicked Point (Latitude, Longitude): 40.12062, -76.81739
Time: 2025-02-03 07:47:19 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.4521	degrees
DRNAREA	Area that drains to a point on a stream	0.39	square miles
ROCKDEP	Depth to rock	4.2	feet
URBAN	Percentage of basin with urban development	3.8839	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	7.4521	degrees	1.7	6.4
DRNAREA	Drainage Area	0.39	square miles	4.78	1150
ROCKDEP	Depth to Rock	4.2	feet	4.13	5.21
URBAN	Percent Urban	3.8839	percent	0	89

Low-Flow Statistics Disclaimers [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 [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0874	ft^3/s
30 Day 2 Year Low Flow	0.112	ft^3/s
7 Day 10 Year Low Flow	0.0375	ft^3/s
30 Day 10 Year Low Flow	0.0515	ft^3/s
90 Day 10 Year Low Flow	0.0731	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: 4.26.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	**Input appropriate values in B4:B8 and E4:E7**					
4	0.0194	**= Q stream (cfs)**		0.5	**= CV Daily**	
5	0.0033	**= Q discharge (MGD)**		0.5	**= CV Hourly**	
6	30	**= no. samples**		1	**= AFC_Partial Mix Factor**	
7	0.3	**= Chlorine Demand of Stream**		1	**= CFC_Partial Mix Factor**	
8	0	**= Chlorine Demand of Discharge**		15	**= AFC_Criteria Compliance Time (min)**	
9	0.5	**= BAT/BPJ Value**		720	**= CFC_Criteria Compliance Time (min)**	
	0	**= % Factor of Safety (FOS)**			**=Decay Coefficient (K)**	
10	**Source**	Reference	**AFC Calculations**		**Reference**	**CFC Calculations**
11	**TRC**	**1.3.2.iii**	**WLA afc =**	1.231	**1.3.2.iii**	**WLA cfc =** 1.193
12	**PENTOXSD TRG**	**5.1a**	**LTAMULT afc =**	0.373	**5.1c**	**LTAMULT cfc =** 0.581
13	**PENTOXSD TRG**	**5.1b**	**LTA_afc=**	0.459	**5.1d**	**LTA_cfc =** 0.693
14						
15	**Source**		**Effluent Limit Calculations**			
16	**PENTOXSD TRG**	**5.1f**	**AML MULT =**	1.231		
17	**PENTOXSD TRG**	**5.1g**	**AVG MON LIMIT (mg/l) =**	0.500	**BAT/BPJ**	
18			**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)**

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07F	8470	Trib 08470 of Bennett 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)
0.440	Laurekwood MHP	PA0081396	0.003	CBOD5	10		
				NH3-N	2.5	5	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07F	8470	Trib 08470 of Bennett 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
0.440	Laurekwood MHP	11.07	5	11.07	5	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
0.440	Laurekwood MHP	1.37	2.5	1.37	2.5	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)		
0.44	Laurekwood MHP	10	10	2.5	2.5	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07F	8470	Trib 08470 of Bennett Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.440	0.003	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.486	0.318	4.676	0.052
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.67	0.672	0.52	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.567	28.043	Owens	6
Reach Travel Time (days)			
0.517			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.052	3.51	0.49	7.54
0.103	3.36	0.47	7.54
0.155	3.22	0.44	7.54
0.207	3.08	0.42	7.54
0.259	2.95	0.40	7.54
0.310	2.82	0.38	7.54
0.362	2.70	0.36	7.54
0.414	2.58	0.34	7.54
0.465	2.47	0.32	7.54
0.517	2.37	0.31	7.54

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	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07F	8470	Trib 08470 of Bennett 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												
0.440	0.02	0.00	0.02	.0051	0.09647	.318	1.49	4.68	0.05	0.517	25.00	7.00
Q1-10 Flow												
0.440	0.01	0.00	0.01	.0051	0.09647	NA	NA	NA	0.04	0.624	25.00	7.00
Q30-10 Flow												
0.440	0.03	0.00	0.03	.0051	0.09647	NA	NA	NA	0.06	0.449	25.00	7.00

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
07F	8470	Trib 08470 of Bennett Run	**0.440**	588.22	0.05	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	0.074	0.00	0.02	0.000	0.000	0.0	0.00	0.00	25.00	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
Laurekwood MHP	PA0081396	0.0033	0.0033	0.0033	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	2.50	0.00	0.00	0.70