

Application Type Renewal
 Facility Type Non-Municipal
 Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0034878
 APS ID 1145671
 Authorization ID 1541245

Applicant and Facility Information

Applicant Name	<u>Stephen Buie</u>	Facility Name	<u>Springhill Estates MHP</u>
Applicant Address	<u>13669 Ridge Road</u> <u>West Springfield, PA 16443-9447</u>	Facility Address	<u>Peach Blossom Lane</u> <u>Springboro, PA 16401</u>
Applicant Contact	<u>Stephen Buie</u>	Facility Contact	<u></u>
Applicant Phone	<u>(814) 922-3774</u>	Facility Phone	<u></u>
Client ID	<u>211108</u>	Site ID	<u>257485</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Spring Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Crawford</u>
Date Application Received	<u>September 9, 2025</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>September 23, 2025</u>	If No, Reason	<u></u>
Purpose of Application	<u>Renewal Application for a Minor Sewage Facility</u>		

Summary of Review

The permittee is applying for reissuance of Individual Permit No. **PA0034878** which will expire on January 3, 2026. The facility consists of Chemical addition, Two 1,000-gallon septic tanks, 5,000-gallon dual chamber septic tank with an effluent filter, 1,500-gallon dosing tank, two 625-square foot recirculating surface sands filters and ultraviolet radiation disinfection.

This is a discharge into stream channel -Trib 63513 To Conneaut Creek. The application specifies the use of UV-type disinfection and a UV transmittance (%) is included as part of the monitoring requirements for the facility.

DMRs were submitted for the past five years.

Act 14 – Notifications were submitted and received.

There are two (2) open violations in WMS for the subject Client ID (211108) as of 4/14/2026. There are two (2) NPDES - Violation of effluent limits in Part A of permit.

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		Adebayo Olude Adebayo Olude / Civil Engineer Trainee	October 14, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	April 14, 2026

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.00275</u>
Latitude	<u>41° 50' 18.44"</u>	Longitude	<u>-80° 23' 43.20"</u>
Quad Name	<u>Beaver Center</u>	Quad Code	<u>41080G4</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary to Conneaut Creek (CWF, MF)</u>	Stream Code	<u>63513</u>
NHD Com ID	<u>123926088</u>	RMI	<u>0.0900</u>
Drainage Area	<u>0.72</u>	Yield (cfs/mi ²)	<u>0.0275</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.0198</u>	Q ₇₋₁₀ Basis	<u>USGS StreamStats</u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u>-</u>
Watershed No.	<u>15-A</u>	Chapter 93 Class.	<u>CWF, MF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u>-</u>	Exceptions to Criteria	<u>-</u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u>7</u>	Default	<u></u>
Temperature (°F)	<u>20</u>	Default	<u></u>
Hardness (mg/L)	<u>100</u>	Default	<u></u>
Other:	<u>-</u>		<u>-</u>
Nearest Downstream Public Water Supply Intake	<u>Pennsylvania - Ohio State Border</u>		
PWS Waters	<u>-</u>	Flow at Intake (cfs)	<u>-</u>
PWS RMI	<u>-</u>	Distance from Outfall (mi)	<u>>10miles</u>

Changes Since Last Permit Issuance: Elevation was revised using Google Earth. Drainage Area and Q₇₋₁₀ Flow were revised using USGS StreamStats.

Treatment Facility Summary				
Treatment Facility Name: Springhill Estates MHP				
WQM Permit No.		Issuance Date		
2072402		01/09/2004		
530647		06/19/2009		
530647		12/29/2021		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Septic Tank Sand Filter	Hypochlorite	0.0028
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0028		Not Overloaded	Anaerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: 2072402 was first issued on 01/09/2004 and later transferred on 06/19/2009 and on 12/29/2021 respectively.

Compliance History	
Summary of DMRs:	DMRs were submitted for the past five years.
Summary of Inspections:	There are two (2) open violations in WMS for the subject Client ID (211108) as of 4/14/2026.

Other Comments: None

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	.00275
Latitude	41° 50' 20.00"	Longitude	-80° 23' 2.00"
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)
E. Coli	Report	IMAX	-	92a.61

Comments: 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. The limit for TRC is applicable under chapter 92a.48. New Monitoring for E. Coli is placed in the permit in accordance with the Department’s SOP entitled “Establishing Effluent Limitations for Individual Sewage Permits.” With a design flow between 0.002 – 0.05 MGD, a sample frequency of 1/year is being proposed. A total residual chlorine limit is not in use. However, UV disinfection is being reported on a daily basis using the Daily Effluent Monitoring Form (3800-FM-BCW0435).

Water Quality-Based Limitations

CBOD₅, Ammonia, and Dissolved oxygen are evaluated using WQM 7.0 (Attachment 3 & 4). The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
CBOD ₅	25	Average Monthly	WQM 7.0
NH ₃ -N	22.4	Average Monthly	WQM 7.0
Dissolved Oxygen	4.0	Daily minimum	WQM 7.0

Comments: This discharge was evaluated using the WQM 7.0 model to determine appropriate effluent limitations for CBOD₅, Ammonia-Nitrogen, and Dissolved Oxygen. The modeling results showed that the current CBOD₅ and DO limitations remain appropriate. The Modeling results are less stringent than the current NH₃-N limits, therefore the existing limits will be retained. The pH value of 7.40 from DMR data was used in this most recent WQM 7.0 model run, instead of a site-specific pH value. The Discharge flow is based on a 16-hour runoff period (based on historical models).

Design flow = 0.00275MGD

Model Discharge Flow = $0.00275 \times 24/16 = 0.004125$ MGD.

For NH3-N

CT = 9.11 mg/L (from NH3-N effluent limitation from the model)

Co = NH3-N WQBEL

K=KC = 1.028 (Dry stream model – WQM D.O Simulation)

t = 0.875 days

$$9.11 = (Co)e^{-(1.028 \times 0.875)}$$

$$Co = 9.11/0.40677 = 22.4\text{mg/L}$$

For CBOD5

CT = 4.79 mg/L (from NH3-N effluent limitation from the model)

Co = CBOD5 WQBEL

K=KC = 1.500 (Dry stream model – WQM D.O Simulation)

t = 0.875 days

$$4.79 = (Co)e^{-(1.500 \times 0.875)}$$

$$Co = 4.79/0.269 = 17.81\text{mg/L}$$

Best Professional Judgment (BPJ) Limitations

Comments: None

Anti-Backsliding

The previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous permit limitations, monitoring requirements, and conditions will be retained. New limitations are being proposed for E. Coli

Outfall001 , 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		
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 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	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
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	19.5	XXX	39	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	6.5	XXX	13	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	2/month	8-Hr Composite

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

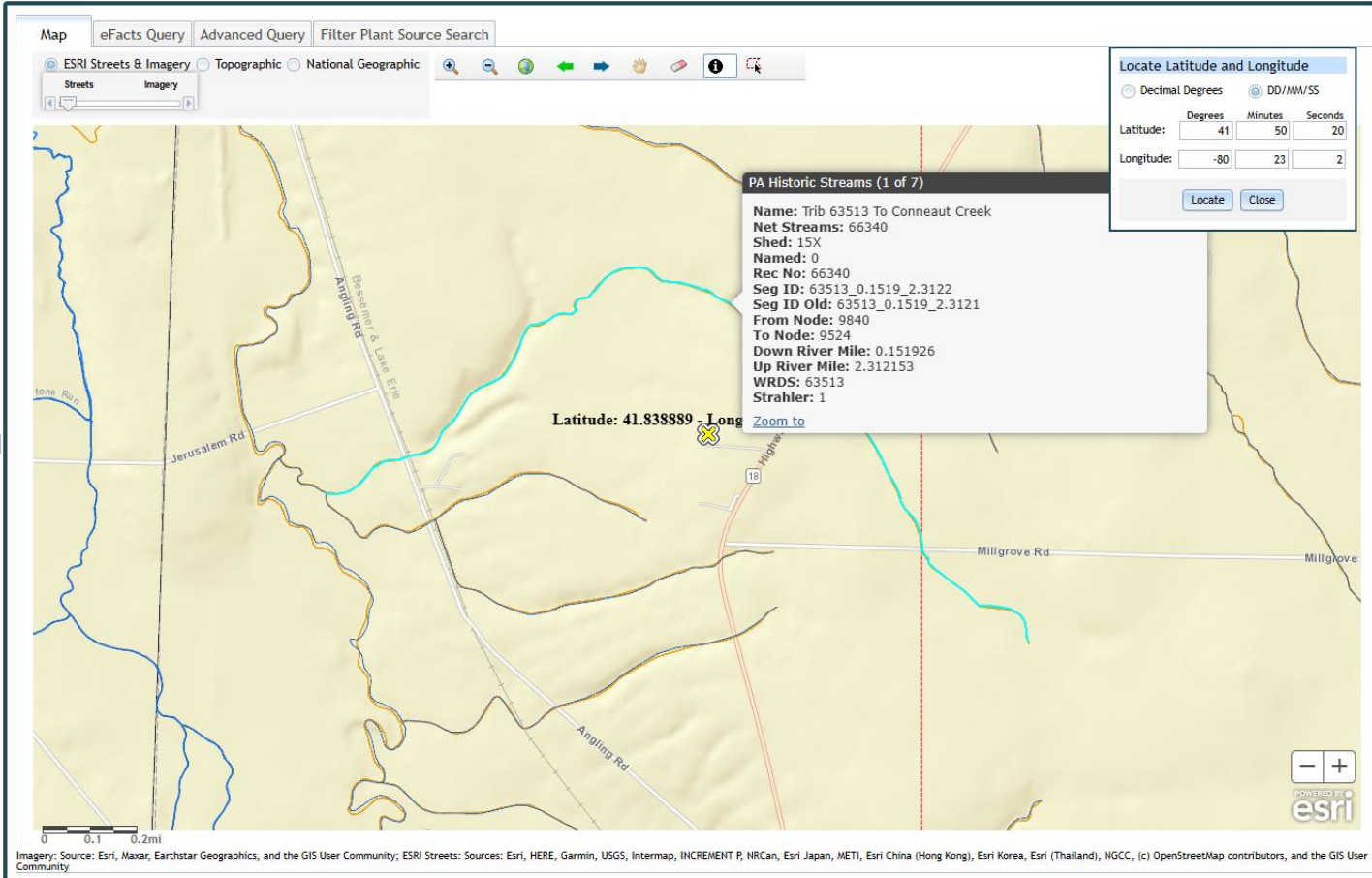
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

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 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	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
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	19.5	XXX	39	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	6.5	XXX	13	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	2/month	8-Hr Composite
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001 after disinfection.

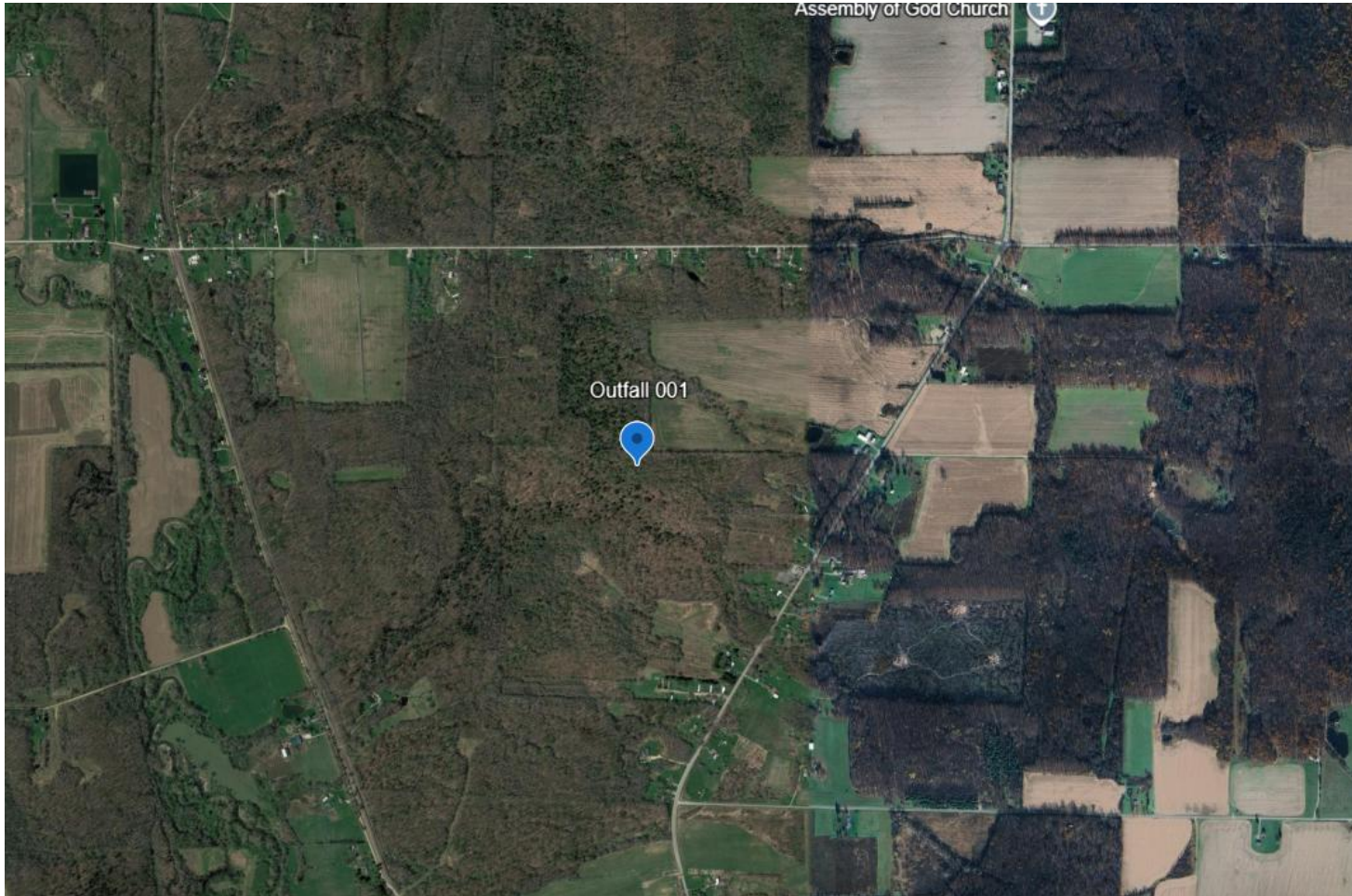
Other Comments: This permit establishes final effluent limitations that are effective upon permit issuance

Attachment 1
eMAP – Receiving stream location and Designation



Google

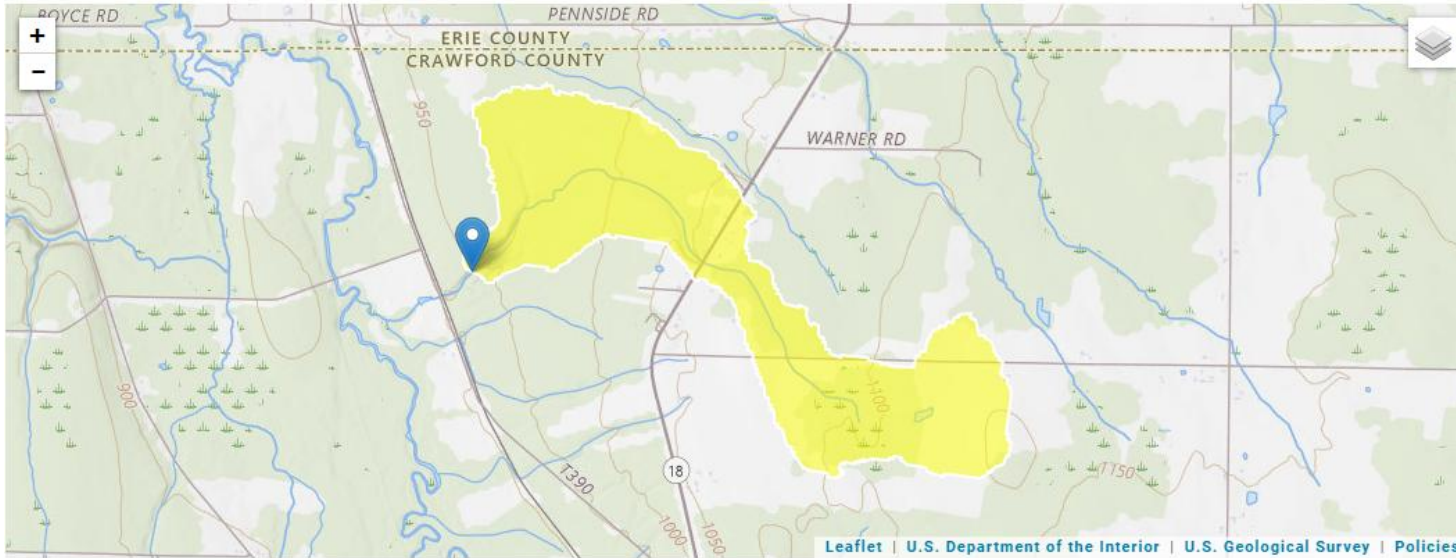
Attachment 2
Earth Aerial Site View



**Attachment 3
StreamStats Report**

StreamStats Report

Region ID: PA
 Workspace ID: PA20251014175950662000
 Clicked Point (Latitude, Longitude): 41.83929, -80.39439
 Time: 2025-10-14 14:00:13 -0400



+ Collapse All

> Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.72	square miles
ELEV	Mean Basin Elevation	1050	feet
PRECIP	Mean Annual Precipitation	43	inches

Attachment 3
WQM 7.0 Modeling Output files (Dry Stream)

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
15	63513	Trib 63513 to Conneaut Creek	1.040	1027.00	0.01	0.00000	0.00	<input type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.001	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Springhill MHP	PA0034878D	0.0041	0.0041	0.0041	0.000	25.00	7.40

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
15	63513 Trib	63513 to Conneaut Creek	0.460	903.00	0.72	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY (cfs)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
									Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.001	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Springhill MHP	PA0034878P	0.0041	0.0041	0.0041	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	4.93	2.00	0.00	1.50
Dissolved Oxygen	7.57	8.24	0.00	0.00
NH3-N	0.59	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin Stream Code Stream Name
15 63513 Trib 63513 to Conneaut 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
1.040	Springhill MHP	NA	50	7.06	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
1.040	Springhill MHP	NA	25	1.1	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.04	Springhill MHP	25	25	25	25	5	5	0	0

WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>	
15	63513	Trib 63513 to Conneaut Creek	
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>
1.040	0.004	24.992	7.399
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>
0.549	0.296	1.923	0.041
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>
24.96	1.500	24.96	1.028
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Scal (mg/L)</u>
5.005	28.952	Owens	NA
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>		
0.875	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>
			<u>D.O. (mg/L)</u>
	0.088	21.17	22.81
	0.175	17.95	20.85
	0.263	15.22	19.06
	0.350	12.90	17.42
	0.438	10.94	15.92
	0.525	9.27	14.55
	0.613	7.86	13.30
	0.700	6.67	12.15
	0.788	5.65	11.11
	0.875	4.79	10.15

Attachment 4
WQM 7.0 Modeling Output files (Perennial Stream)

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
15	63513	Trib 63513 to Conneaut Creek	0.460	903.00	0.72	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
									Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.027	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data							
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Springhill MHP	PA0034878P	0.0041	0.0041	0.0041	0.000	25.00	7.40

Parameter Data				
Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	4.79	2.00	0.00	1.50
Dissolved Oxygen	8.17	8.24	0.00	0.00
NH3-N	10.15	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
15	63513	Trib 63513 to Conneaut Creek	0.000	855.00	1.21	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow (cfs)	Stream Flow (cfs)	Roh Trav Time (days)	Roh Velocity (fps)	WD Ratio	Roh Width (ft)	Roh Depth (ft)	Tributary		Stream	
									Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.027	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

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

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

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>			<u>Stream Name</u>							
15		63513			Trib 63513 to Conneaut Creek							
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
0.480	0.02	0.00	0.02	.0083	0.01976	.28	2.84	10.12	0.03	0.855	21.21	7.07
Q1-10 Flow												
0.480	0.01	0.00	0.01	.0083	0.01976	NA	NA	NA	0.03	1.022	21.87	7.10
Q30-10 Flow												
0.480	0.03	0.00	0.03	.0083	0.01976	NA	NA	NA	0.04	0.747	20.95	7.05

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>	
15	63513	Trib 63513 to Conneaut Creek	

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.480	Springhill MHP	13.32	20.3	13.32	20.3	0	0

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.480	Springhill MHP	1.74	9.11	1.74	9.11	0	0

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.48	Springhill MHP	4.79	4.79	9.11	9.11	6.17	6.17	0	0

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>	
15	63513	Trib 63513 to Conneaut Creek	
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>
0.480	0.004	21.213	7.089
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>
2.837	0.280	10.124	0.033
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>
2.68	0.323	2.21	0.769
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>
7.740	23.855	Owens	6
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>		
0.855	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>
			<u>D.O. (mg/L)</u>
	0.085	2.60	2.07
	0.171	2.53	1.94
	0.256	2.45	1.82
	0.342	2.38	1.70
	0.427	2.31	1.59
	0.513	2.25	1.49
	0.598	2.18	1.40
	0.684	2.12	1.31
	0.769	2.06	1.22
	0.855	2.00	1.15

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
15		63513		Trib 63513 to Conneaut Creek			
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
0.480	Springhill MHP	PA0034878P	0.004	CBOD5	4.79		
				NH3-N	9.11	18.22	
				Dissolved Oxygen			6.17

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP: [redacted]
<input type="checkbox"/>	Other: [redacted]