Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0238988**
Facility Type	**Non-Municipal**	APS ID	**1145485**
Major / Minor	**Minor**	Authorization ID	**1540987**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Greene Meadows Septic Association**	Facility Name	**Greene Meadows STP**
Applicant Address	2130 Deer Run Trail	Facility Address	2500 Deer Run Trail
	Erie, PA 16509-5600		Erie, PA 16509
Applicant Contact	Aaron Jarmolowicz	Facility Contact	Greene Meadows Subd. Stp
Applicant Phone	(814) 440-6149	Facility Phone	(814) 440-6149
Client ID	380933	Site ID	557107
Ch 94 Load Status	Not Overloaded	Municipality	Greene Township
Connection Status	No Limitations	County	Erie
Date Application Received	September 8, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	-

Purpose of Application: Renewal application for Minor Sewage Facility

Summary of Review

The Department received a renewal application for NPDES Permit No. PA0238988 which expired on September 30, 2025. There is one outfall (Outfall 001) which discharges to Tributary 63774 to Walnut Creek. Greene Meadows Septic Association is a Sewage Treatment Plant (STP) that serves a subdivision of 20 homes located on Deer Run Trail in Erie, PA.

Act 14 notifications were submitted and received.

The facility is currently in the eDMR system.

An inspection summary is provided below (Table 1).

There are no open violations in WMS for the subject Client ID (380933) as of October 22, 2025.

Proposed Changes:

- Addition of E. Coli monitoring
- More stringent Ammonia-Nitrogen (NH3-N) limits

Approve	Deny	Signatures	Date
X		Carlee Wilson Carlee Wilson / Environmental Engineering Trainee	October 22, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	October 29, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.01
Latitude	42º 2' 36.22"	Longitude	-79º 59' 31.30"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary of Walnut Creek (CWF, MF)	Stream Code	63774
NHD Com ID	123923514	RMI	0.3000
Drainage Area	0.2	Yield (cfs/mi^2)	0.0372
Q_{7-10} Flow (cfs)	0.00744	Q_{7-10} Basis	USGS - StreamStats
Elevation (ft)	1345	Slope (ft/ft)	-
Watershed No.	15-A	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake	-		
PWS Waters	-	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	-

Changes Since Last Permit Issuance: Drainage Area and Q_{7-10} Flow were updated using StreamStats data from USGS (Attachments 2 & 3). Elevation was adjusted using Google Earth.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Treatment Facility Summary

Treatment Facility Name: Greene Meadows STP

WQM Permit No.	Issuance Date
2503414 A-3 T-1	01/09/2024
2503414 A-3	04/11/2022
2503414 A-2	06/29/2017
2503414 A-1	01/30/2015
2503414	07/25/2003

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Phosphorus Reduction	Septic Tank Sand Filter	Ultraviolet	0.01

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.01	18.34	Not Overloaded	Anaerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

2503414 A-3 T-1

20 residences with a 1,250-gallon or greater dual chamber septic tank discharging to a 1,000-gallon aerated collection tank, 1,000-gallon pump tank with two alternating submersible pumps, 2,500-gallon dosing tank with two alternating submersible pumps, subsurface sand filter, alum addition, dosing tank, surface sand filter and UV radiation disinfection.

2503414 A-3

A new dosing tank was installed on the outlet of the subsurface sand filter where alum is added to aid the precipitation of Phosphorus, the tank is pumped to two surface sand filters where the under drains direct the flow to the existing UV disinfection before discharging.

2503414 A-2

Two 60 ft. by 60 ft. subsurface sand filters in place of free access sand filters, dosing tank configuration, and different sized dosing tank pumps.

2503414 A-1

13 existing parcels with at least a 1250-gallon septic tank each combining in a 1000-gallon central collection tank fitted with an aerator, to an existing 1000-gallon pump tank with two submersible pumps rated at 50 GPM at 30 ft. TDH to a new 4 ft. diameter manhole and into a new 6-inch gravity line to the new sand filter pump tanks. The six new lots will install 1250-gallon dual compartment septic tanks with an approved septic tank aerator and then connect into the new 6-inch gravity line. The new sand filter pump tanks are (two) 1250-gallon single chamber tanks in series equipped with two pumps (both in the second tank) rated at 140 GPM at 40 ft. TDH. The pumps will alternate doses between two open access sand filters with dimensions of 32 ft. by 50 ft. and have built in ability to operate as a one pass filter or as a recirculating filter (can recycle approximately a third of the flow) as an added operational flexibility based on plant performance. After the sand filters, the effluent will pass through two UV units in series prior to surface discharge.

Compliance History

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

Parameter	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24
Flow (MGD) Average Monthly	0.0015	0.009	0.0064	0.01	0.015	0.005	0.005	0.005	0.005	0.006	0.0057	0.015
Flow (MGD) Daily Maximum	0.0015	0.009	0.0064	0.01	0.016	0.005	0.005	0.005	0.005	0.006	0.0057	0.015
pH (S.U.) Daily Minimum	6.8	6.8	6.8	7.1	6.8	7.9	8.3	6.8	7.0	6.4	6.9	6.0
pH (S.U.) Daily Maximum	7.2	7.1	7.1	7.2	7.1	8.6	8.7	7.2	7.4	7.1	6.9	6.5
DO (mg/L) Daily Minimum	9.6	10.8	10.6	10.6	12.1	5.2	10.3	9.0	9.0	7.8	8.5	6.4
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.0	2.7	< 2.0	3.4	< 2.0	< 2.0	< 2.0
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1	79	1.0	< 1.0	10	< 1.0	1.0	< 1.0	< 1.0	3.0	1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1.0	< 1	79	1.0	< 1.0	10	< 1.0	< 1.0	< 1.0	< 1.0	3.0	1.0
Total Nitrogen (mg/L) Average Quarterly			21			12.3			52.9			34
Ammonia (mg/L) Average Monthly	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	0.15	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (mg/L) Average Monthly	< 0.15	1.5	0.16	0.15	0.51	1.5	< 0.15	0.15	0.535	2.83	< 1.0	0.188

Compliance History

Effluent Violations for Outfall 001, from: October 1, 2024, To: August 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Phosphorus	07/31/25	Avg Mo	1.5	mg/L	1.0	mg/L
Total Phosphorus	03/31/25	Avg Mo	1.5	mg/L	1.0	mg/L
Total Phosphorus	11/30/24	Avg Mo	2.83	mg/L	1.0	mg/L

Summary of Inspections

Table 1. 5-Year Inspection Summary for Greene Meadows Septic Association

Facility Name	Inspected Date	Inspection Type	Inspection Result	Inspector	No. of Violations
GREENE MEADOWS STP	12/18/2020	Administrative/File Review	Violation(s) Noted	SINGER, SEAN	2
GREENE MEADOWS STP	08/25/2022	Follow-up Inspection	No Violations Noted	KRAUSE, SHANE	0
GREENE MEADOWS STP	04/14/2021	Routine/Partial Inspection	No Violations Noted	KRAUSE, SHANE	0
GREENE MEADOWS STP	03/12/2025	Compliance Evaluation	Violation(s) Noted	KRAUSE, SHANE	1
GREENE MEADOWS STP	12/28/2023	Administrative/File Review	Violation(s) Noted	KING, WILLIAM	1

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .01
Latitude 42º 2' 36.00" **Longitude** -79º 59' 30.00"
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
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.

Since chlorine disinfection is not used, a TRC limit is not applied.

Water Quality-Based Limitations

Table 2. Water Quality Modeling Results

Parameter	Limit (mg/l)	SBC
CBOD5	25	Average Monthly
NH3-N	2.5	Average Monthly
	5.1	IMAX
Dissolved Oxygen	4	Daily Minimum

The Department's Toxics Management Spreadsheet was not used for this case since no sampling other than sewage-related parameters was performed for this facility with the renewal application. The above parameters were evaluated using water quality modeling (Attachment 5). This model (WQM 7) 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. CBOD5 and Dissolved Oxygen will remain the same.

However, the model recommends an average monthly limit of 2.5 mg/l and an IMAX limit of 5.1 mg/l for Ammonia-Nitrogen, which are more stringent than the current permit limits (Table 3). Therefore, these new limits are proposed in this renewal. According to historic DMR data, the permittee is not in risk of noncompliance with these more stringent limits and will not need a compliance schedule.

Best Professional Judgment (BPJ) Limitations

A Phosphorus limit of 1.0 mg/l as an average monthly is in place for discharges to Lake Erie or tributaries to Lake Erie (IJC Agreement).

The permittee will be required to check for “UV Functional” 1/day and report on the supplemental report entitled “Daily Effluent Monitoring Form (3800-FM-BCW0435)” in accordance with Part C.I.F. of the permit.

Anti-Backsliding

Table 3. Current Permit Effluent Limitations for Outfall 001

Parameter	Effluent Limitations			
	Concentrations			
	Minimum	Average Monthly	Maximum	Instant. Maximum
Flow (MGD)	XXX	Report	Report Daily Max	XXX
pH (S.U.)	6.0 Daily Min	XXX	9.0 Daily Max	XXX
DO	4.0 Daily Min	XXX	XXX	XXX
CBOD5	XXX	25.0	XXX	50
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 Avg Qrtly	XXX	XXX
Ammonia Nov 1 - Apr 30	XXX	Report	XXX	XXX
Ammonia May 1 - Oct 31	XXX	14.0	XXX	28
Total Phosphorus	XXX	1.0	XXX	2

Comments: Water Quality Modeling suggests more stringent Ammonia-Nitrogen limits (highlighted above). All other 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.

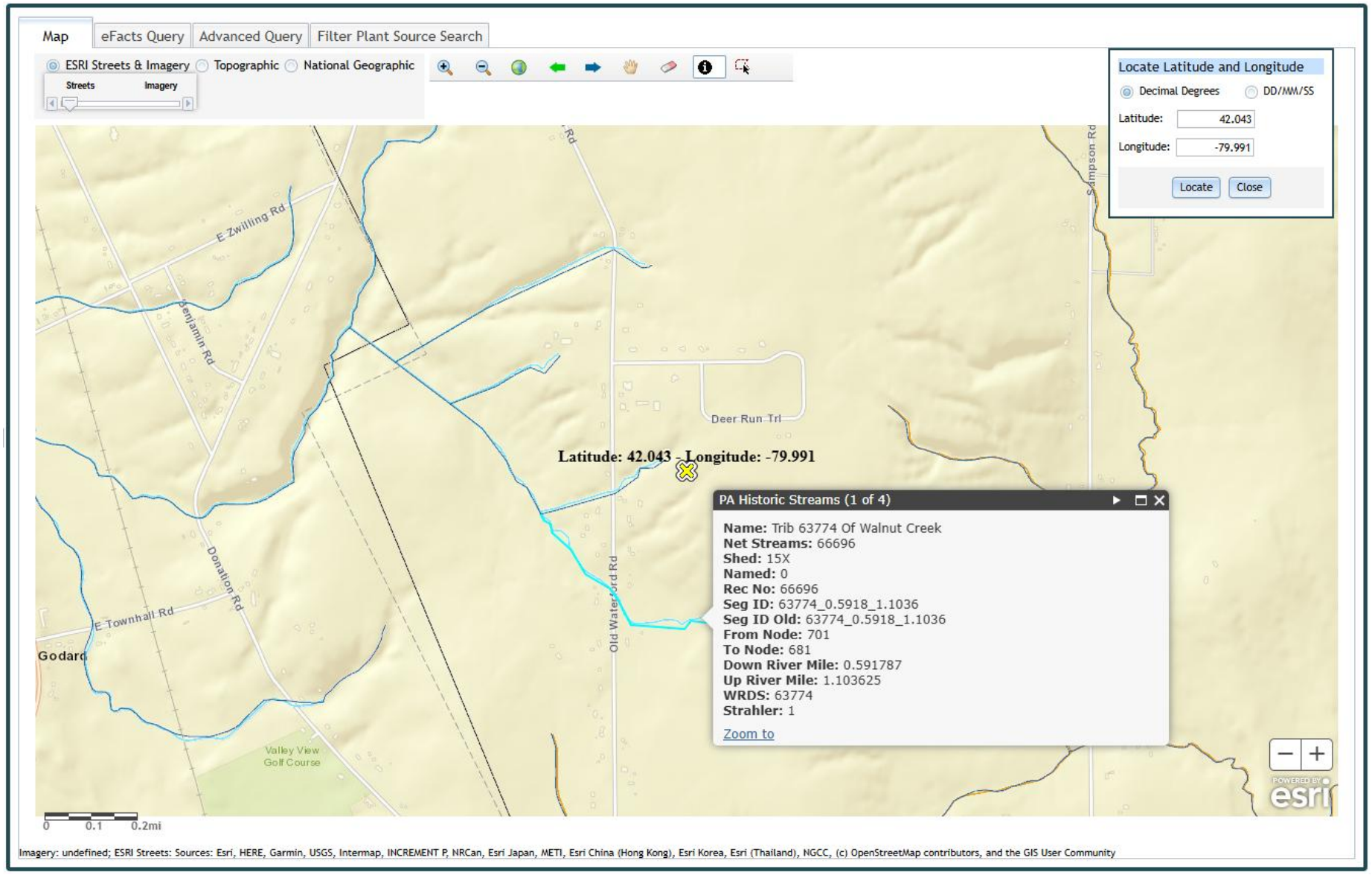
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

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 Daily Min	XXX	9.0 Daily Max	XXX	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	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15.3	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5.1	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	2/month	Grab

Compliance Sampling Location: Outfall 001 – after disinfection

Attachment 1

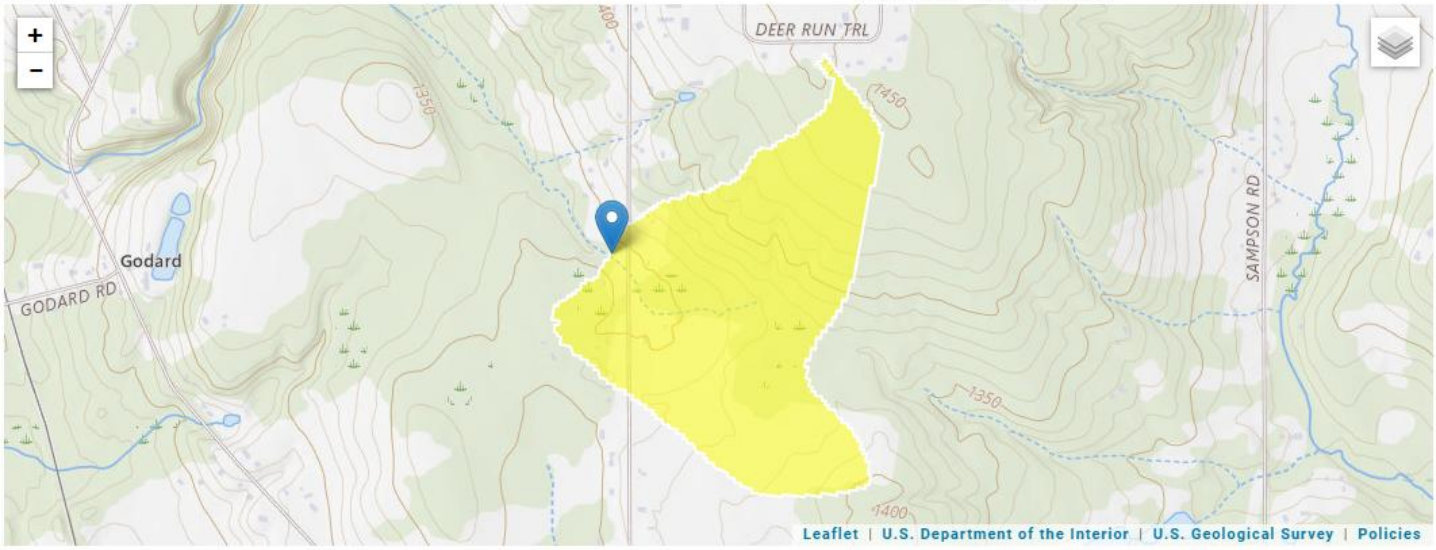
eMapPA – Receiving Stream Location and Data



Attachment 2
StreamStats (Outfall 001) – Drainage Details

StreamStats Report

Region ID:	PA
Workspace ID:	PA20251021173058591000
Clicked Point (Latitude, Longitude):	42.03959, -79.99465
Time:	2025-10-21 13:31:20 -0400



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.2	square miles	2.33	1720
ELEV	Mean Basin Elevation	1382	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0197	ft^3/s
30 Day 2 Year Low Flow	0.0308	ft^3/s
7 Day 10 Year Low Flow	0.00744	ft^3/s
30 Day 10 Year Low Flow	0.0113	ft^3/s
90 Day 10 Year Low Flow	0.0173	ft^3/s

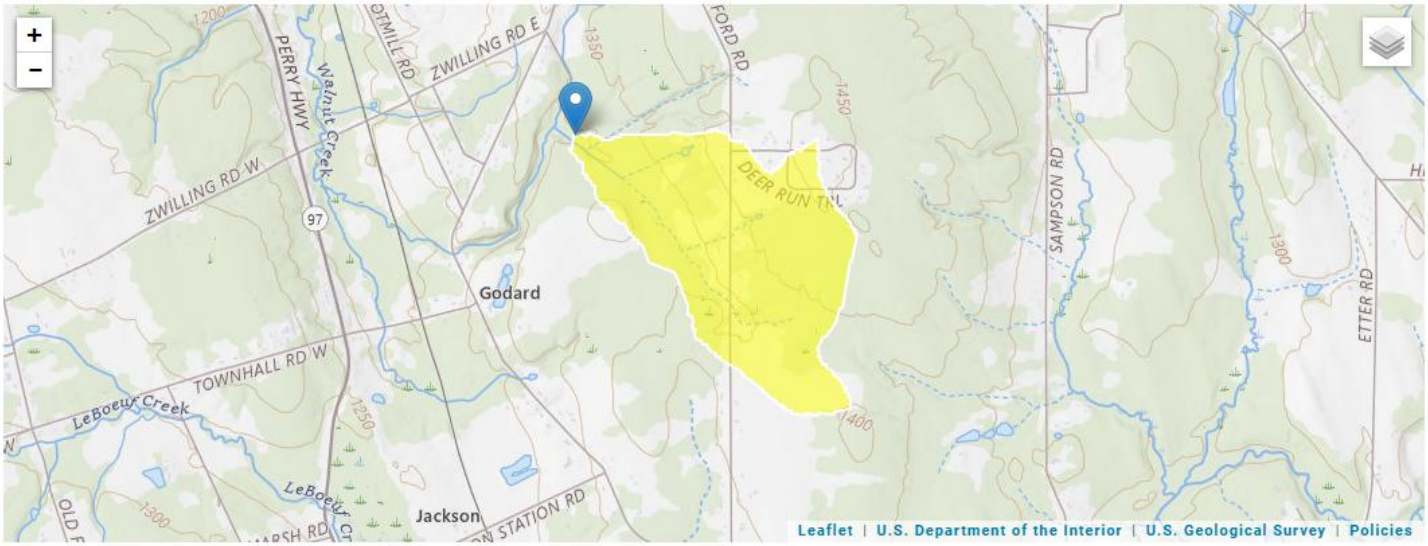
Low-Flow Statistics Citations

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

Attachment 3
StreamStats (Endpoint) – Drainage Details

StreamStats Report

Region ID:	PA
Workspace ID:	PA20251021174047145000
Clicked Point (Latitude, Longitude):	42.04711, -80.00396
Time:	2025-10-21 13:41:09 -0400



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.5	square miles	2.33	1720
ELEV	Mean Basin Elevation	1377	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

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

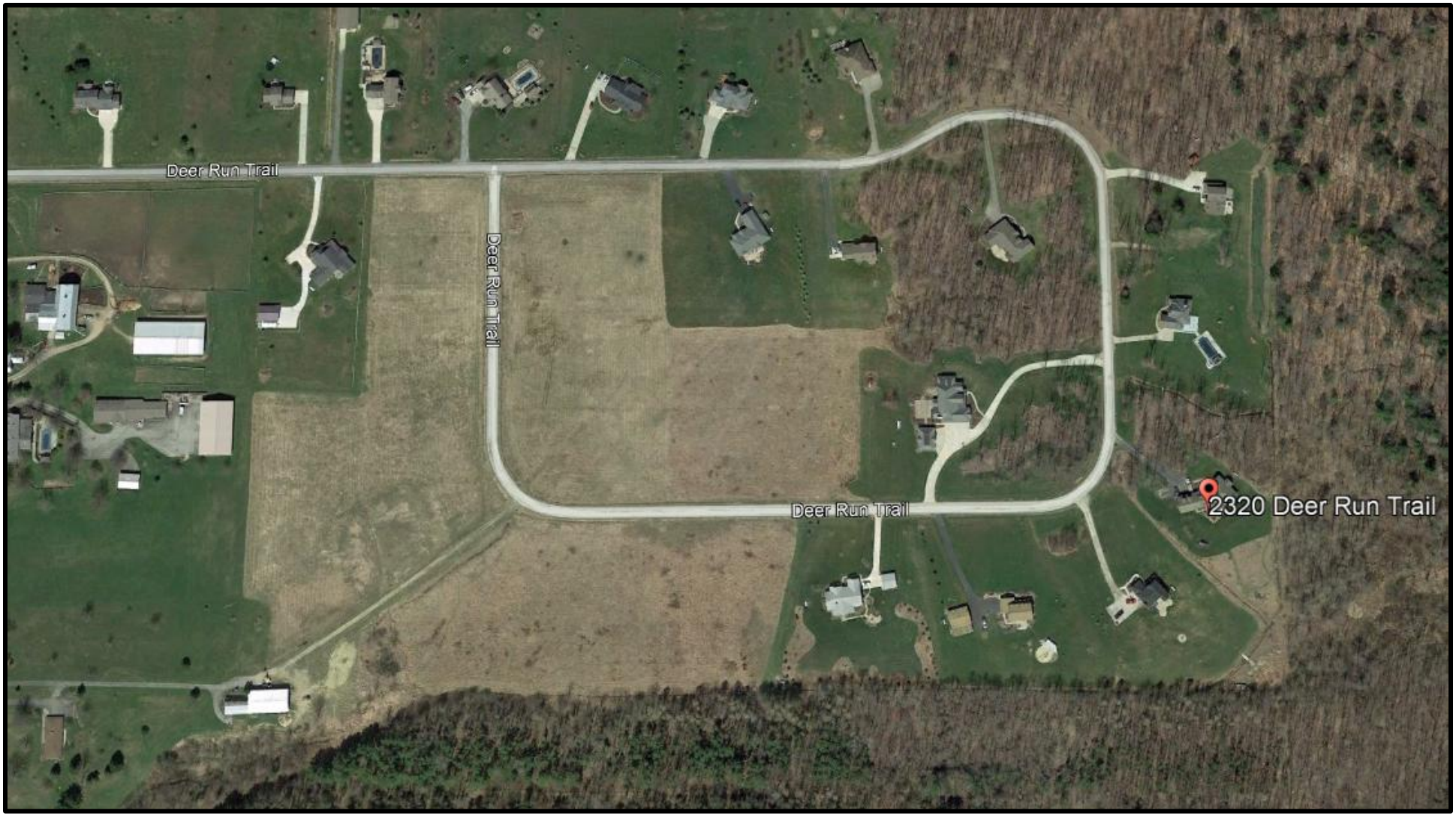
Low-Flow Statistics Flow Report [Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0502	ft^3/s
30 Day 2 Year Low Flow	0.0771	ft^3/s
7 Day 10 Year Low Flow	0.0199	ft^3/s
30 Day 10 Year Low Flow	0.0297	ft^3/s
90 Day 10 Year Low Flow	0.0448	ft^3/s

Low-Flow Statistics Citations

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

Attachment 4
Google Earth – Aerial Site View



Attachment 5
Water Quality Modeling Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
15	63774	Trib 63774 of Walnut 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)
0.860	Greene Meadows	PA0238988	0.010	CBOD5	25		
				NH3-N	2.57	5.14	
				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
	15	63774	Trib 63774 of Walnut Creek	**0.860**	1345.00	0.20	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	0.037	0.00	0.01	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
Greene Meadows	PA0238988	0.0100	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
15	63774	Trib 63774 of Walnut 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												
0.860	0.01	0.00	0.01	.0155	0.01587	.282	2.04	7.25	0.04	1.137	23.38	7.00
Q1-10 Flow												
0.860	0.00	0.00	0.00	.0155	0.01587	NA	NA	NA	0.04	1.219	23.82	7.00
Q30-10 Flow												
0.860	0.01	0.00	0.01	.0155	0.01587	NA	NA	NA	0.04	1.069	23.02	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
15	63774	Trib 63774 of Walnut 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
0.860	Greene Meadows	12.21	15.97	12.21	15.97	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
0.860	Greene Meadows	1.55	2.57	1.55	2.57	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)		
0.86	Greene Meadows	25	25	2.57	2.57	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
15	63774	Trib 63774 of Walnut Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.860	0.010	23.376	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.044	0.282	7.248	0.040
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
17.53	1.341	1.73	0.908
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.378	28.183	Owens	5
Reach Travel Time (days)			
1.137			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.114	14.67	1.56	7.02
0.227	12.28	1.41	7.31
0.341	10.27	1.27	7.51
0.455	8.60	1.15	7.68
0.569	7.19	1.04	7.75
0.682	6.02	0.93	7.75
0.796	5.04	0.84	7.75
0.910	4.22	0.76	7.75
1.024	3.53	0.68	7.75
1.137	2.95	0.62	7.75

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **5**)
☐	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: