

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

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0100650  
 APS ID 1150083  
 Authorization ID 1548494

**Applicant and Facility Information**

Applicant Name	<u>Forrest Brooke MHC LLC</u>	Facility Name	<u>Forrest Brooke MHP</u>
Applicant Address	<u>9140 Sandpiper Drive</u> <u>Streetsboro, OH 44241-4599</u>	Facility Address	<u>7224 West Market Street</u> <u>Mercer, PA 16137</u>
Applicant Contact	<u>Kathy White</u>	Facility Contact	<u>Ken Campbell</u>
Applicant Phone	<u>(330) 592-6903</u>	Facility Phone	<u>(724) 510-9042</u>
Client ID	<u>267675</u>	Site ID	<u>244047</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Lackawannock Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Mercer</u>
Date Application Received	<u>November 6, 2025</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>November 13, 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. **PA0100650**. The facility consists of a comminutor and bar screen before four (4) primary aeration tanks(carbonaceous), followed by a primary clarifier (carbonaceous). After the primary clarifier, there are four (4) secondary aeration tanks (nitrification) which are followed by a secondary clarifier (nitrification). Liquid chlorine is then injected into the discharge line of the secondary clarifier before the final aeration tank. Alum is injected directly into the flocculation/Final aeration tank before the two (2) phosphorus removal/chlorine contact tanks. After contact time is achieved, the discharge line routes through a dechlorination tablet feeder followed by a buried concrete dichlorination tank. Following the buried tank is secondary dechlorination tablet feeder is in place followed by an open top concrete contact basin before discharging through a 4" Sch. 40 PVC pipe at Outfall 001 to an unnamed Tributary 36056 of Magargee Run.

In addition, two (2) waste/sludge digester tanks are in the facility. Sludge is pumped out and hauled away as needed from these tanks.

This is an existing discharge with a design hydraulic capacity of 0.072-MGD - Trib 36056 Of Magargee Run

A total of eight inspections have been conducted, with the most recent one completed on July 27, 2022. This inspection served as a follow-up to assess the status of violations identified during the previous compliance evaluation inspection and to address issues related to the grinder pump station complaint.

Act 14 – Notifications were submitted and received.

There are no open violations in WMS for the subject Client ID (267675) as of 11/13/25.

Sludge use and disposal description and location(s): 6.047 dry tons of Sludge to Daltons Facility.

Approve	Deny	Signatures	Date
x		Adebayo Olude Adebayo Olude / Civil Engineer Trainee	November 14, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	January 16, 2026

**Summary of Review**

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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.072</u>
Latitude	<u>41° 14' 9.55"</u>	Longitude	<u>-80° 21' 14.48"</u>
Quad Name	<u>Greenfield</u>	Quad Code	<u>41080B3</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary to Magargee Run (WWF)</u>	Stream Code	<u>36056</u>
NHD Com ID	<u>130026609</u>	RMI	<u>0.9300</u>
Drainage Area	<u>0.19</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.0057</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.0011</u>	Q <sub>7-10</sub> Basis	<u>USGS StreamStats</u>
Elevation (ft)	<u>1242</u>	Slope (ft/ft)	<u>-</u>
Watershed No.	<u>20-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u>-</u>	Exceptions to Criteria	<u>-</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>NUTRIENTS</u>		
Source(s) of Impairment	<u>PACKAGE PLANT OR OTHER PERMITTED SMALL FLOWS DISCHARGES</u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u>7</u>	Default	<u></u>
Temperature (°F)	<u>25</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>Aqua Pennsylvania, Inc. - Shenango Valley WTP</u>		
PWS Waters	<u>Shenango River</u>	Flow at Intake (cfs)	<u>143.8</u>
PWS RMI	<u>28.88</u>	Distance from Outfall (mi)	<u>&gt; 10miles</u>

Changes Since Last Permit Issuance: Elevation was revised using Google Earth. Drainage Area and Q<sub>7-10</sub> Flow were revised using USGS StreamStats.

Other Comments:

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Forrest Brooke MHP				
<b>WQM Permit No.</b>		<b>Issuance Date</b>		
4399416		09/20/1999		
4399416		04/30/2009		
4399416		10/30/2024		
<b>Waste Type</b>	<b>Degree of Treatment</b>	<b>Process Type</b>	<b>Disinfection</b>	<b>Avg Annual Flow (MGD)</b>
Sewage	Secondary With Ammonia And Phosphorus	Activated Sludge	No Disinfection	0.072
<b>Hydraulic Capacity (MGD)</b>	<b>Organic Capacity (lbs/day)</b>	<b>Load Status</b>	<b>Biosolids Treatment</b>	<b>Biosolids Use/Disposal</b>
0.072		Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: WQM Permit No. 4399416 was issued on 09/20/1999 and transferred on 04/30/2009. Later it was amended on 10/30/2024 with a proposed corrective action to maintain permit compliance of TRC by adding dechlorination after the chlorine contact tanks. The dechlorination system will consist of two (2) Norweco Bio-Dynamic LF 4600 tablet feeders that will be installed in series. Tablets can be fed through the four (4) 4" Sch. 40 PVC pipes that extend from the top of the unit to finished grade level. Each feeder is rated at a maximum of 0.20 MGD or 140 GPM (each). The Bio-Neutralizer dechlorination tablet is recommended by Norweco to be used in conjunction with the LF 4600. If additional chlorine removal is required, Norweco has a Bio-Max dechlorination tablet available.

"Dechlorination Tablet Feeder #1" will be installed upstream of "Dechlorination Tank #1 ". Dechlorination Tank #1 is an existing 3-baffled, buried post aeration/stripping tank, with an approximate volume of 2,975-gallons and Actual Contact time of 29.75 minutes. This tablet feeder will be secondary and only used if adequate TRC reduction cannot be achieved from "Dechlorination Tablet Feeder #2" alone.

"Dechlorination Tablet Feeder #2" will be installed upstream of "Dechlorination Tank #2". Dechlorination Tank #2 is an existing open top discharge basin, with an approximate volume of 52-gallons and Actual Contact time of 31 seconds. This tablet feeder will be the primary unit.

Compliance History	
<b>Summary of DMRs:</b>	The last inspection was on 07/27/2022.
<b>Summary of Inspections:</b>	A total number of 8 inspected were conducted. There are no open violations in WMS for the subject Client ID (267675) as of 11/13/25.

Other Comments: None

Compliance History

DMR Data for Outfall 001 (from October 1, 2024 to September 30, 2025)

Parameter	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24
Flow (MGD) Average Monthly	0.0245	0.0245	0.1205	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245
pH (S.U.) Instantaneous Minimum	7.7	7.7	7.4	7.6	7.5	7.7	7.29	7.6	7.5	7.5	7.1	7.4
pH (S.U.) Instantaneous Maximum	8.1	8.4	8.1	8.3	8.1	8.4	7.93	8.3	7.8	8.1	8.4	8.2
DO (mg/L) Daily Minimum	7.61	7.56	7.46	7.49	7.38	7.31	7.8	7.04	6.6	6.34	6.54	6.69
TRC (mg/L) Average Monthly	< 0.01	0.00001	0.00001	0.00001	0.00000 1	0.00000 1	0.0001	0.0001	0.00001	0.0001	0.0007	0.003
CBOD5 (mg/L) Average Monthly	4.0	< 2.0	< 2.0	7.9	3.1	3.8	2.6	6.7	4.3	< 2.0	< 3.3	< 2.8
TSS (mg/L) Average Monthly	20.0	22.0	25	19	23	22	15	30	10	14	16	12
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	85	179	39	12	< 1	< 1	< 1	< 1	< 3	< 1
Total Nitrogen (mg/L) Average Monthly	9.93	11.5	3.66	8.3	13.9	8.39	8.89	7.52	8.79	9.49	7.95	4.7
Ammonia (mg/L) Average Monthly	< 0.20	2.3	< 0.2	0.5	0.2	< 0.2	< 0.2	< 2.4	< 2.6	< 0.2	0.8	0.1
Total Phosphorus (mg/L) Average Monthly	0.7	0.8	0.5	0.7	0.6	< 0.5	0.2	2.0	1.1	< 0.7	< 0.1	< 0.1

**Development of Effluent Limitations**

<b>Outfall No.</b>	<u>001</u>	<b>Design Flow (MGD)</b>	<u>.072</u>
<b>Latitude</b>	<u>41° 14' 9.02"</u>	<b>Longitude</b>	<u>-80° 21' 14.14"</u>
<b>Wastewater Description:</b>	<u>Sewage Effluent</u>		

**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 <sub>5</sub>	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 > 0.05 and < 1 MGD, a sample frequency of 1/quarter is proposed.

**Water Quality-Based Limitations**

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
CBOD <sub>5</sub>	25	Average Monthly	WQM 7.0
	50	IMAX	
NH <sub>3</sub> -N May 1 – Oct 31	1.0	Average Monthly	WQM 7.0
	2.5	IMAX	
NH <sub>3</sub> -N Nov 1 – Apr 30	3.0	Average Monthly	WQM 7.0
	7.5	IMAX	
Dissolved Oxygen	5.0	Daily minimum	WQM 7.0
TRC	0.01	Average Monthly	TRC Spreadsheet Model
	0.03	IMAX	

Comments: This discharge was evaluated using the WQM 7.0 model to determine appropriate effluent limitations for CBOD<sub>5</sub>, Ammonia-Nitrogen, and Dissolved Oxygen. The modeling results confirmed that the current CBOD<sub>5</sub> limitations remain appropriate, and existing Dissolved Oxygen limits are also adequate for the facility. The model calculated WQBELs for NH<sub>3</sub>-N that are more stringent than what is currently imposed in the previous permit. The model recommended summertime average monthly limitations of 1.39 and an IMAX of 2.78. Respectively these will round down to 1.0 mg/l Average Monthly Average and 2.5 Instantaneous Maximum based on the rounding guidelines in the Permit Writers Manual. A seasonal multiplier of 3 times the summertime average monthly limit is established for the winter period. The default pH value of 7.0 S.U. was used in this most recent WQM 7.0 model run, instead of a site-specific pH value.

Based on the discharge data, the permittee will not be able to achieve the new WQBELs for Ammonia upon permit issuance; therefore, the renewal permit will contain a three-year schedule of compliance for the permittee to come into compliance with the new limits.

The Department's TRC model was also performed. The model indicated an average monthly limit of 0.01 mg/L and an IMAX limit of 0.03 mg/L. The average monthly limit from the model is the same as the current limit, however, the model recommended a more stringent IMAX limit. It appears that the permittee can achieve the new IMAX limit, therefore no compliance schedule for TRC will be imposed.

**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 or more stringent limitations are being proposed for E. Coli, Ammonia-Nitrogen, and TRC

**Outfall001 , Continued (from Start of Final Period through Permit Expiration Date)**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	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	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.01	XXX	0.05	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	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	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	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 Three Years After Permit Effective Date.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	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	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.01	XXX	0.03	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	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	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	2/month	8-Hr Composite
E. Coli	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab

Compliance Sampling Location: Outfall 001 after disinfection

Other Comments:

**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.

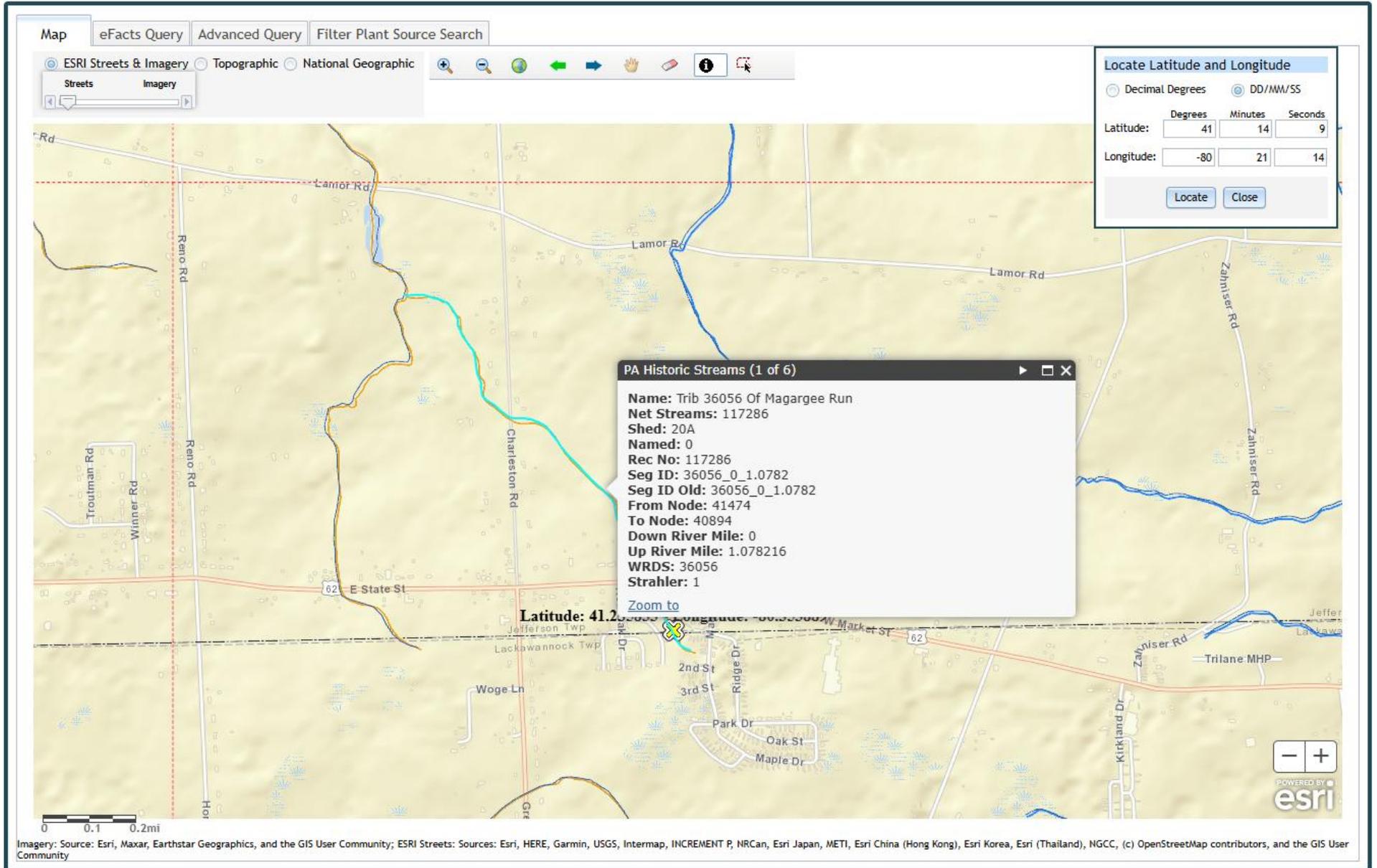
**Outfall 001, Effective Period: Three Years After Permit Effective Date through Permit Expiration Date.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	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	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.01	XXX	0.03	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	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	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	3.0	XXX	7.5	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.0	XXX	2.5	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2	2/month	8-Hr Composite
E. Coli	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab

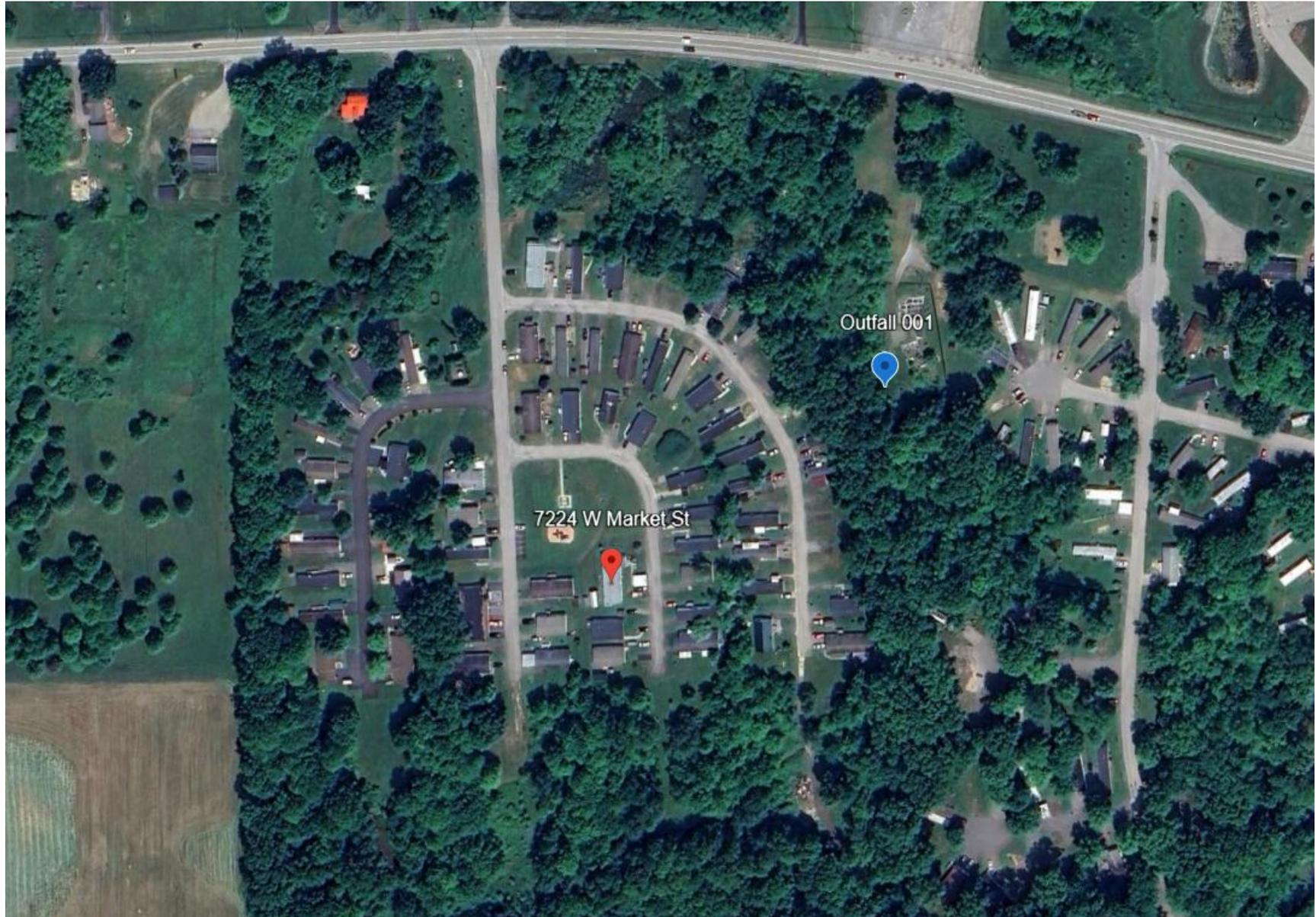
Compliance Sampling Location: Outfall 001 after disinfection

Other Comments:

Attachment 1  
eMAP – Receiving stream location and Designation



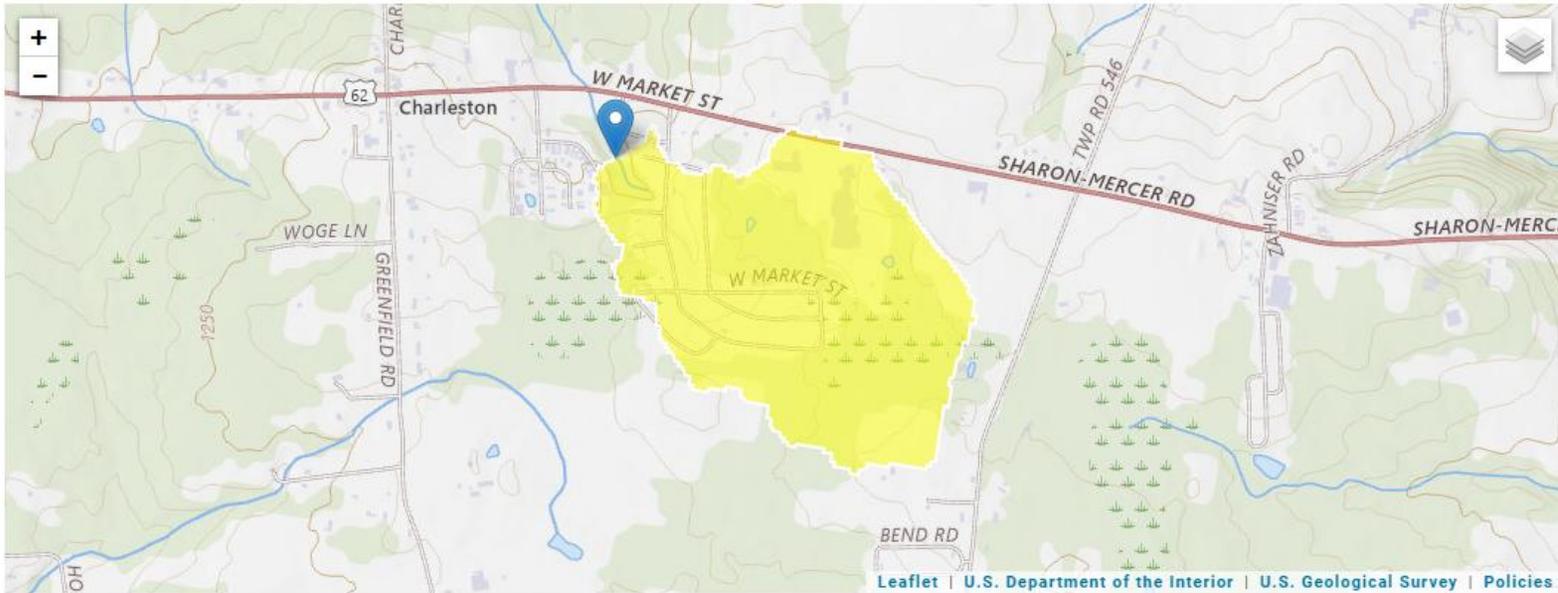
Attachment 2  
Google Earth Aerial Site View



### StreamStats Report

Region ID:  
Workspace ID:  
Clicked Point (Latitude, Longitude):  
Time:

PA  
PA20251113163537720000  
41.23582, -80.35385  
2025-11-13 11:36:00 -0500



+ Collapse All

> Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.19	square miles
ELEV	Mean Basin Elevation	1289	feet

Attachment 3

TRC\_CALC (version 1)

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9					
0.0011	= Q stream (cfs)		0.5	= CV Daily	
0.072	= 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)	
0	= % Factor of Safety (FOS)			= Decay Coefficient (K)	
Source	Reference	AFC Calculations		Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.022		1.3.2.iii	WLA cfc = 0.014
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 0.008		5.1d	LTA_cfc = 0.008
Source	Effluent Limit Calculations				
PENTOXSD TRG	5.1f	AML MULT = 1.231			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.010		CFC	
		INST MAX LIMIT (mg/l) = 0.033			
WLA afc	$(.019/e^{-k \cdot AFC\_tc}) + [(AFC\_Yc \cdot Qs \cdot .019 / Qd \cdot e^{-k \cdot AFC\_tc}) \dots + Xd + (AFC\_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$				
LTAMULT afc	$EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1)^{0.5})$				
LTA_afc	wla_afc * LTAMULT_afc				
WLA_cfc	$(.011/e^{-k \cdot CFC\_tc}) + [(CFC\_Yc \cdot Qs \cdot .011 / Qd \cdot e^{-k \cdot CFC\_tc}) \dots + Xd + (CFC\_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$				
LTAMULT_cfc	$EXP((0.5 \cdot LN(cvd^2 / no\_samples + 1)) - 2.326 \cdot LN(cvd^2 / no\_samples + 1)^{0.5})$				
LTA_cfc	wla_cfc * LTAMULT_cfc				
AML MULT	$EXP(2.326 \cdot LN((cvd^2 / no\_samples + 1)^{0.5}) - 0.5 \cdot LN(cvd^2 / no\_samples + 1))$				
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 3**  
**WQM 7.0 Modeling Output files**

**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
20A	38056	Trib 38056 of Magargee Run	1.070	1242.00	0.19	0.00000	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.006	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
Forest MHP	PA0100650	0.0720	0.0720	0.0720	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>						
20A		36056				Trib 36056 of Magargee 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
<b>Q7-10 Flow</b>												
1.070	0.00	0.00	0.00	.1114	0.06629	.4	2.55	6.37	0.11	0.033	24.95	7.00
<b>Q1-10 Flow</b>												
1.070	0.00	0.00	0.00	.1114	0.06629	NA	NA	NA	0.11	0.033	24.97	7.00
<b>Q30-10 Flow</b>												
1.070	0.00	0.00	0.00	.1114	0.06629	NA	NA	NA	0.11	0.033	24.93	7.00

**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	1.38	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 D.O.Simulation**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
20A	36056	Trib 36056 of Magargee Run		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
1.070	0.072	24.952	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
2.547	0.400	6.367	0.110	
<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>	
24.78	1.499	1.38	1.025	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
5.031	30.355	Owens	5	
<u>Reach Travel Time (days)</u>	<b>Subreach Results</b>			
0.033	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.003	24.62	1.37	5.11
	0.007	24.47	1.37	5.19
	0.010	24.32	1.36	5.26
	0.013	24.17	1.36	5.32
	0.017	24.02	1.35	5.38
	0.020	23.87	1.35	5.43
	0.023	23.72	1.35	5.48
	0.027	23.57	1.34	5.53
	0.030	23.42	1.34	5.58
	0.033	23.28	1.33	5.62

**WQM 7.0 Wasteload Allocations**

**SWP Basin**      **Stream Code**                      **Stream Name**  
20A                      36056                                      Trib 36056 of Magargee 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
	1.070 Forest MHP	11.1	11.17	11.1	11.17	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
	1.070 Forest MHP	1.37	1.39	1.37	1.39	0	0

**Dissolved Oxygen Allocations**

RMI	Discharge Name	<u>COD5</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)		
	1.07 Forest MHP	25	25	1.39	1.39	5	5	0	0

**WQM 7.0 Effluent Limits**

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
20A		36056		Trib 36056 of Magargee 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)
1.070	Forest MHP	PA0100650	0.072	CBOD5	25		
				NH3-N	1.39	2.78	
				Dissolved Oxygen			5