

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

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0221236
APS ID 1140621
Authorization ID 1532628

Applicant and Facility Information

Applicant Name <u>Roberta Brocklehurst</u>	Facility Name <u>Brocklehurst MHP</u>
Applicant Address <u>306 Fox Mine Road</u> <u>Jackson Center, PA 16133-1434</u>	Facility Address <u>350 Fox Mine Road</u> <u>Jackson Center, PA 16133</u>
Applicant Contact <u>Roberta Brocklehurst</u>	Facility Contact _____
Applicant Phone <u>(724) 992-3984</u>	Facility Phone _____
Client ID <u>313878</u>	Site ID <u>240670</u>
Ch 94 Load Status <u>Not Overloaded</u>	Municipality <u>Jackson Township</u>
Connection Status _____	County <u>Mercer</u>
Date Application Received <u>July 1, 2025</u>	EPA Waived? <u>Yes</u>
Date Application Accepted _____	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. **PA0221236**. The facility is a Lagoon system consisting of a 474,000-gallon primary stabilization pond which then flows into 114,500-gallon tertiary pond and then into a hypo-chlorination unit followed by a 1000-gallon chlorine contact tank with effluent running into an unknown tributary of fox run.

This is an existing discharge with a design hydraulic capacity of 0.0032-MGD - Trib 35801 To Fox Run (TSF).

DMRs were reviewed up to the last inspection; May 2018, June 2018, and 2nd Quarter 2018 were submitted late. No discharge has been reported since April 2010 till May 31, 2025.

Act 14 – Notifications were submitted and received.

There are no open violations in WMS for the subject Client ID (313878) as of 7/29/25.

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	July 29, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	August 7, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.0032
Latitude	41° 17' 46.50"	Longitude	-80° 8' 21.00"
Quad Name	41080C2	Quad Code	Jackson Center
Wastewater Description: Sewage Effluent			
Receiving Waters	Unnamed Tributary to Fox Run (TSF)	Stream Code	35801
NHD Com ID	130029275	RMI	0.5100
Drainage Area	0.0566	Yield (cfs/mi ²)	0.001 – default (dry stream)
Q ₇₋₁₀ Flow (cfs)	0.000258	Q ₇₋₁₀ Basis	UGS Stream Stats
Elevation (ft)		Slope (ft/ft)	-
Watershed No.	20-A	Chapter 93 Class.	TSF
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)	-		-
Temperature (°F)	-		-
Hardness (mg/L)	-		-
Other:	-		-
Nearest Downstream Public Water Supply Intake	Beaver River		
PWS Waters	Beaver Falls Municipal Authority	Flow at Intake (cfs)	561
PWS RMI	3.5	Distance from Outfall (mi)	>20

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

Other Comments: The streamflow value used for the receiving stream in this renewal is different from the previous permit. According to USGS Stream Stats, the anticipated low-flow (Q₇₋₁₀) for the stream is 0.000258 cfs, whereas the previous model assumed a low-flow of 0 cfs. In the previous permit, no WQBELs were determined due to the discharge to an intermittent stream, and any WQBELs were evaluated at the next down stream point where there was perennial flow. This was done incorrectly because even though the stream at the point of discharge was intermittent there was still a use in the stream that must be protected. This is considered a water of the United States and is subject to designated uses under Water Quality Standards and the Clean Water Act. According to 40 CFR § 131.10(a), states must assign and protect designated uses for all waters. Also, according to 40 CFR § 131.10(g) the use at the point of discharge remains in effect despite the stream flow value, unless it is formally removed through a Use Attainability Analysis. Due to this, the permit will receive significantly more stringent limitations than what was previously permitted.

Treatment Facility Summary				
Treatment Facility Name: Brocklehurst MHP STP				
WQM Permit No.	Issuance Date			
4371413T-2	12/11/2014			
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Stabilization pond	Gas Chlorine	0.0032
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0032		Not Overloaded		

Changes Since Last Permit Issuance: None

Other Comments: There has been no discharge reported since April 2010 till date.

Compliance History	
Summary of DMRs:	No discharge reported since April 210 till date.
Summary of Inspections:	There are no open violations on WMS (client ID: 313878) as of 07/29/2025.

Other Comments: None

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	.0032
Latitude	41° 17' 46.53"	Longitude	-80° 8' 21.53"
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)
	50	IMAX	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	60	IMAX	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)
	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)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Total Nitrogen	Report	Average Monthly		92a.61
Total Phosphorus	Report	Average Monthly		92a.61
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.

Comments: 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.

Water Quality-Based Limitations

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
	50	IMAX	
NH ₃ -N May 1 – Oct 31	1.5	Average Monthly	WQM 7.0
	3.0	IMAX	
NH ₃ -N Nov 1 – Apr 30	4.5	Average Monthly	WQM 7.0
	9.0	IMAX	
Dissolved Oxygen	4.0	Daily minimum	WQM 7.0
TRC	0.017	Average Monthly	TRC Spreadsheet Model
	0.056	IMAX	

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 confirmed that the current CBOD₅ limitations remain appropriate, and existing Dissolved Oxygen limits are also adequate for the facility. There are no current limits for Ammonia-Nitrogen, and therefore the calculated limits are more stringent limits. The model recommended summertime average monthly limitations of 1.65 and an IMAX of 3.3. Respectively these will round down to 1.5 mg/l Average Monthly Average and 3.0 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 current limits for TRC are 0.5 which is less stringent than the calculated limit of 0.017 mg/L. However, because it is less than 0.02mg/L, the condition for TRC effluent limitations below the quantitation limits is being included in the permittee's renewed permit.

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

Best Professional Judgment (BPJ) Limitations

Comments: No BPJ Limitations are being considered at this time.

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.

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	XXX	XXX	XXX	XXX	XXX	1/day	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	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
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab

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) ⁽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/day	Estimate
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
TRC	XXX	XXX	XXX	0.5	XXX	1.6	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
Ammonia Nov 1 – Apr 30	XXX	XXX	XXX	Report	XXX	Report	2/month	Grab
Ammonia May 1 – Oct 31	XXX	XXX	XXX	Report	XXX	Report	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
E. Coli	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001 after disinfection

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.

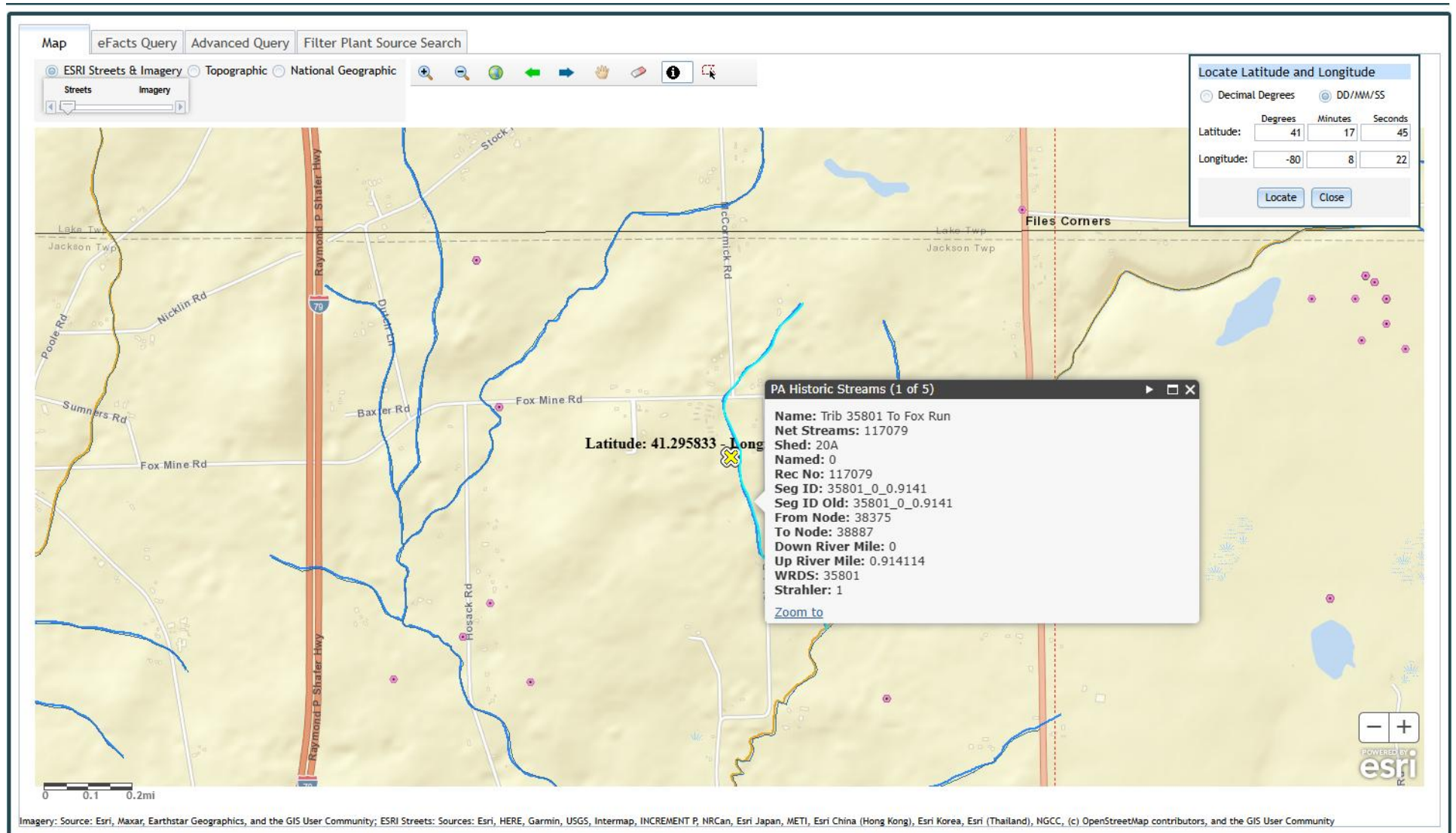
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Estimate
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
TRC	XXX	XXX	XXX	0.017	XXX	0.056	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
Ammonia Nov 1 – Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	Grab
Ammonia May 1 – Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
E. Coli	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001 after disinfection

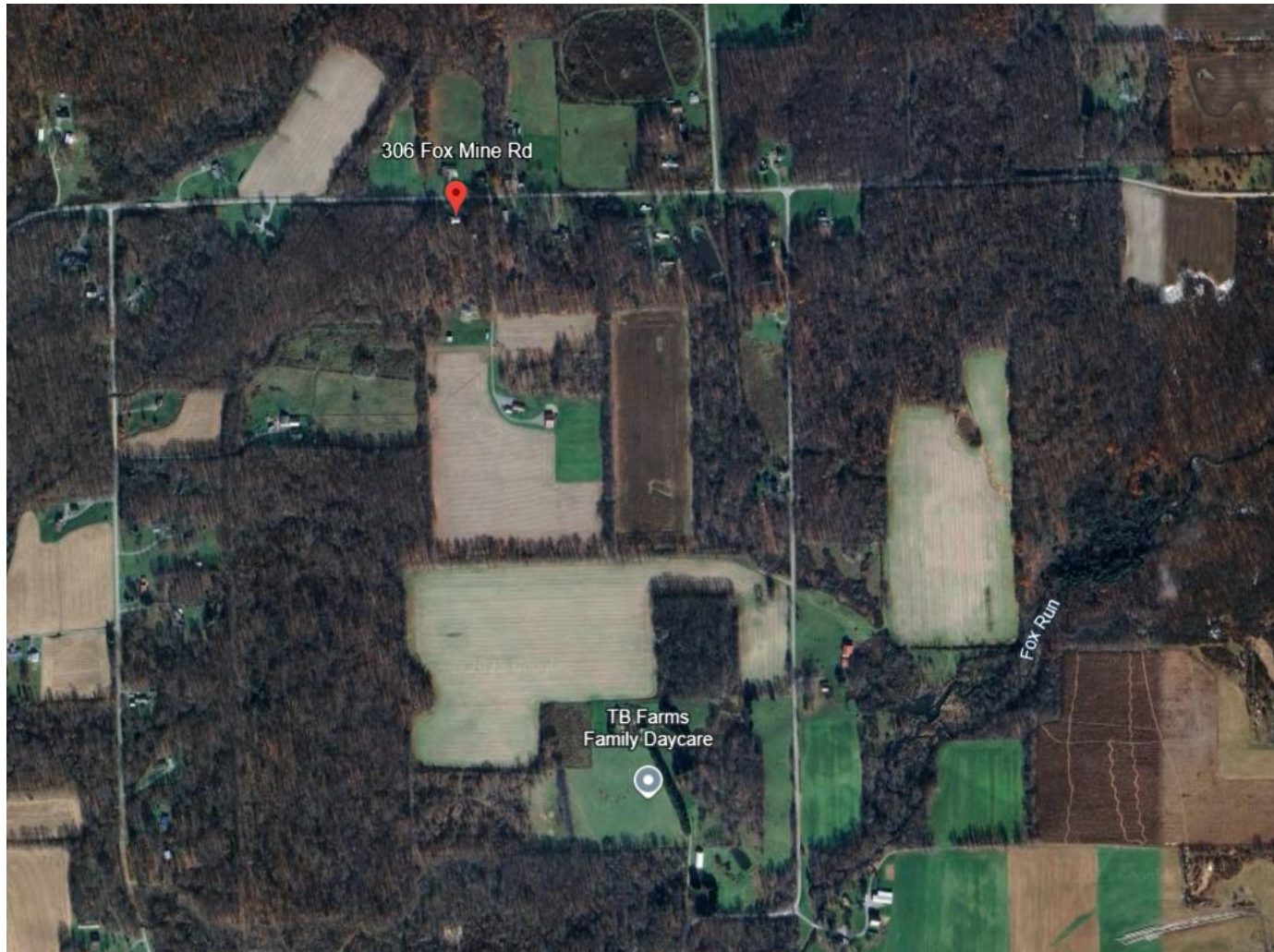
Other Comments:

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment)
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment)
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<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 checked="" 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:
<input type="checkbox"/>	Other:

Attachment 1
eMAP – Receiving stream location and Designation



Attachment 2
Google Earth Aerial Site View



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	35801	Trib 35801 to Fox Run	0.490	1340.00	0.06	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	pH	Stream Temp (°C)	pH
	(cfsm)	(cfs)	(cfs)									
Q7-10	0.001	0.00	0.00	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
Brocklehurst MP	PA0221236	0.0032	0.0032	0.0032	0.000	20.00	7.30

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	0.00	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
20A	35801	Trib 35801 to Fox Run	0.010	1320.00	0.25	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
Q7-10	0.001	0.00	0.00	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
		0.0000	0.0000	0.0000	0.000	0.00	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	8.25	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		35801			Trib 35801 to Fox Run							
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												
0.490	0.00	0.00	0.00	.005	0.00789	.232	1.05	4.53	0.02	1.428	20.06	7.29
Q1-10 Flow												
0.490	0.00	0.00	0.00	.005	0.00789	NA	NA	NA	0.02	1.431	20.04	7.30
Q30-10 Flow												
0.490	0.00	0.00	0.00	.005	0.00789	NA	NA	NA	0.02	1.424	20.09	7.29

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	2		

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>							
20A	35801	Trib 35801 to Fox 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		
0.490	Brockenhurst MP	12.19	12.29	12.19	12.29	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		
0.490	Brockenhurst MP	1.62	1.65	1.62	1.65	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)		
0.49	Brockenhurst MP	25	25	1.65	1.65	4	4	0	0

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>	
20A	35801	Trib 35801 to Fox Run	
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>
0.490	0.003	20.064	7.294
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>
1.051	0.232	4.528	0.021
<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>
24.68	1.500	1.63	0.703
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>
4.055	23.985	Owens	2
<u>Reach Travel Time (days)</u>	Subreach Results		
1.428	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>
			<u>D.O. (mg/L)</u>
	0.143	19.91	1.47
	0.286	16.06	1.33
	0.428	12.96	1.20
	0.571	10.45	1.09
	0.714	8.43	0.98
	0.857	6.80	0.89
	0.999	5.49	0.81
	1.142	4.43	0.73
	1.285	3.57	0.66
	1.428	2.88	0.60

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
20A		35801		Trib 35801 to Fox 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)
0.490	Brocklehurst MP	PA0221236	0.003	CBOD5	25		
				NH3-N	1.65	3.3	
				Dissolved Oxygen			4

Attachment 4
TRC_CALC Modeling Output files

TRC_CALC

TRC EVALUATION				
Input appropriate values in A3:A9 and D3:D9				
0.000285	= Q stream (cfs)	0.5	= CV Daily	
0.0032	= 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 = 0.037		1.3.2.iii WLA cfc = 0.029
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.014		5.1d LTA_cfc = 0.017
Source	Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML MULT = 1.231		
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.017		AFC
		INST MAX LIMIT (mg/l) = 0.056		
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)			