Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0264024**
Facility Type	**Municipal**	APS ID	**1140912**
Major / Minor	**Minor**	Authorization ID	**1533111**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Hickory Township Forest County**	Facility Name	**Hickory Township STP**
Applicant Address	PO Box 44	Facility Address	PO Box 44 Rte 666
	Endeavor, PA 16322		Tionesta, PA 16353-0044
Applicant Contact	James Verne	Facility Contact	James Verne
Applicant Phone	(814) 463-7321	Facility Phone	(814) 463-7321
Client ID	72720	Site ID	762894
Ch 94 Load Status	Not Overloaded	Municipality	Hickory Township
Connection Status	No Limitations	County	Forest
Date Application Received	June 2, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	--
Purpose of Application	Renewal of an Individual Sewage NPDES Permit		

Summary of Review

The Department received a renewal application for Individual Permit No. PA0264024 on June 2, 2025, dated May 22, 2025. The current permit is set to expire on November 30, 2025. The facility discharges into East Hickory Creek (HQ-CWF).

Act 14 notifications were submitted and received.

The facility is currently using the eDMR system.

Proposed Changes:

- The addition of E. coli monitoring 1/year has been added as recommended by the SOP for flows between 0.05 MGD and 1.0 MGD.

There are no open violations in WMS for the subject Client (72720) as of July 24, 2025.

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		Carlee Wilson Carlee Wilson / Environmental Engineering Trainee	July 24, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	August 5, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.006
Latitude	41º 35' 17.89"	Longitude	-79º 23' 4.84"
Quad Name	West Hickory	Quad Code	0610
Wastewater Description:	Sewage Effluent		

Receiving Waters	East Hickory Creek (HQ-CWF)	Stream Code	55629
NHD Com ID	100473031	RMI	0.3300
Drainage Area	56.3	Yield (cfs/mi^2)	0.06
Q_{7-10} Flow (cfs)	3.28	Q_{7-10} Basis	USGS - StreamStats
Elevation (ft)	1103	Slope (ft/ft)	-
Watershed No.	16-F	Chapter 93 Class.	HQ-CWF
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	Aqua Pa Emlenton		
PWS Waters	Allegheny River	Flow at Intake (cfs)	1,376
PWS RMI	90.0	Distance from Outfall (mi)	70.57

Changes Since Last Permit Issuance: Elevation was revised using Google Earth and Q_{7-10} Flow was revised using USGS StreamStats.

Treatment Facility Summary				
Treatment Facility Name: Hickory Township STP				
WQM Permit No.	**Issuance Date**			
2712402 A-1	6/28/2021			
2712402	8/05/2013			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Sequencing Batch Reactor W/Sol Removal	Chlorine	0.006
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.006	10.5	Not Overloaded	Aerobic Digestion	Offsite

Changes Since Last Permit Issuance: None

Other Comments: The Hickory Township Sewage Treatment Plant serves the village of Endeavor. The facility is a Cromaflow CA-60 Sequencing Batch Reactor wastewater facility with a chlorine disinfection system. Chlorine disinfection is accomplished via a 1,000-gallon concrete baffle tank which is then dechlorinated by dichlorination tablets located in the first outfall sewer manhole. The plant is sized to accommodate an average hydraulic loading of 6,000 GPD and an average organic loading of 10.5 lbs/day. A 2-inch Netafim filter provides final effluent filtration. Sludge is hauled offsite. In 2023 38.37 wet tons were hauled offsite.

An amendment for WQM Permit No. 2712402 was issued on June 28, 2021 (2712402 A-1), which authorized replacing the existing UV disinfection with 4 119-gallon chlorine contact tanks in series, repurposing the chemical feed system for the injection of liquid sodium hypochlorite, and a new Norweco LF 200 dichlorination sodium sulfite tablet system.

There are no proposed upgrades to the treatment facilities over the next 5 years.

Compliance Summary	
Summary of DMRs:	There have been no effluent violations in the past year.
Summary of Inspections:	The last compliance evaluation was conducted on February 13, 2023, by Clinton Stonesifer. No violations were noted.
Future Compliance:	The facility should be able to meet the effluent limits based on historic DMR data.

Compliance History

DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.002689	0.002711	0.002600	0.003039	0.003257	0.002760	0.001950	0.002057	0.002035	0.002051	0.002033	0.001948
Flow (MGD) Weekly Average	0.002978	0.002906	0.002786	0.002935	0.003490	0.002957	0.002159	0.002204	0.001900	0.002198	0.002251	0.002087
pH (S.U.) Instantaneous Minimum	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
pH (S.U.) Instantaneous Maximum	7.2	7.5	7.4	7.3	7.1	7.3	7.5	7.5	7.9	7.7	8.0	8.0
DO (mg/L) Daily Minimum	8.79	9.54	10.3	10.75	9.81	9.66	7.53	7.55	7.39	7.2	7.25	7.53
TRC (mg/L) Average Monthly	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TRC (mg/L) Instantaneous Maximum	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
CBOD5 (lbs/day) Average Monthly	0.079	0.14	0.062	0.034	0.08	0.10	0.076	0.070	0.047	0.068	0.062	0.064
CBOD5 (lbs/day) Weekly Average	0.071	0.15	0.069	0.035	0.087	0.11	0.084	0.075	0.050	0.073	0.069	0.069
CBOD5 (mg/L) Average Monthly	3.0	6.6	2.9	1.4	3.0	4.7	4.7	4.1	< 3.0	4.0	3.7	4.0
CBOD5 (mg/L) Weekly Average	< 3.0	6.6	2.9	1.4	3.0	4.7	4.7	4.1	< 3.0	4.0	3.7	4.0
BOD5 (lbs/day) Raw Sewage Influent Average Quarterly			17.86			11.43			4.5			12.69
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum			13.3			12.2			4.7			12.69
BOD5 (mg/L) Raw Sewage Influent Average Quarterly			739			602			201			416
TSS (lbs/day) Average Monthly	0.074	0.067	0.065	0.19	0.19	0.06	0.048	0.051	0.047	0.068	0.062	0.048

TSS (lbs/day) Raw Sewage Influent Average Quarterly			58.9			37.0			46.8			48.52
TSS (lbs/day) Raw Sewage Influent Daily Maximum			44.2			39.6			48.0			48.52
TSS (lbs/day) Weekly Average	0.067	0.072	0.069	0.20	0.20	0.07	0.054	0.055	0.050	0.073	0.069	0.052
TSS (mg/L) Average Monthly	< 3.0	< 3.0	3.0	8.0	7.0	3.0	3.0	< 3.0	3.0	4.0	3.0	3.0
TSS (mg/L) Raw Sewage Influent Average Quarterly			2440			1950			2050			1590
TSS (mg/L) Weekly Average	3.0	< 3.0	3.0	8.0	7.0	3.0	3.0	< 3.0	3.0	4.0	3.0	3.0
Fecal Coliform (No./100 ml) Geometric Mean	1.0	1.0	< 1.0	< 1.0	2.0	< 1.0	< 1.0	1.0	5.0	< 1.0	1.0	2.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	1.0	1.0	< 1.0	< 1.0	2.0	< 1.0	< 1.0	1.0	5.0	< 1.0	1.0	2.0
Total Nitrogen (mg/L) Semi-Annual Average						11.3						15.4
Ammonia (mg/L) Average Monthly	< 0.07	0.12	0.35	0.07	0.10	0.13	< 0.10	< 0.10	0.10	0.10	0.17	< 0.10
Ammonia (mg/L) Instantaneous Maximum		0.12	0.35	0.07	0.10	0.13	< 0.10					
Total Phosphorus (mg/L) Semi-Annual Average						1.18						0.88

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .006
Latitude 41º 35' 20.00" **Longitude** -79º 23' 4.00"
Wastewater Description: Sewage Effluent

1. Technology-Based Limitations

The following technology-based limitations apply and are subject to water quality analysis and BPJ where applicable. The proposed technology-based limitations are based on the limitations listed in the table below found in the *"Establishing Effluent Limitations for Individual Sewage Permits"* SOP.

Table 1. Technology-Based Effluent Limits

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
CBOD5	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	10	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	20	IMAX	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102©	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 Nitrogen	Report	Semi Average	-	92a.61
Total Phosphorus	Report	Semi Average	-	92a.61
E. Coli	Report	IMAX	-	92a.61
TRC	0.05	Average Monthly		92a.48(b)(2)

2. Water Quality-Based Limitations

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 below parameters were evaluated using the WQM 7.0 Model (Attachment 6). Based upon the output files of WQM 7.0, no changes will be established for this facility since the current permit limits (Table 3) are more stringent than the model results.

Table 2. WQM 7.0 Model Results

Parameter	Limit (mg/l)	SBC
CBOD5	25	Average Monthly
	50	IMAX
DO	7.0	Daily Min
NH3-N	25	Average Monthly
	50	IMAX

3. Anti-Backsliding

Table 3. Effluent Limitations in the Current Permit								
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	4/week	Grab
Dissolved Oxygen	XXX	XXX	7.0 Daily Min	XXX	XXX	XXX	4/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.02	XXX	0.02	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	1.0	1.5	XXX	20.0	30.0	40	1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	0.5	0.8	XXX	10.0	15.0	20	1/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Total Suspended Solids	0.5	0.8	XXX	10.0	15.0	20	1/month	Grab
Total Suspended Solids Raw Sewage Influent	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	2/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	1/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6	1/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	2/year	Grab

Comments: 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 with the addition of E. Coli.

Proposed Effluent Limitations and Monitoring Requirements

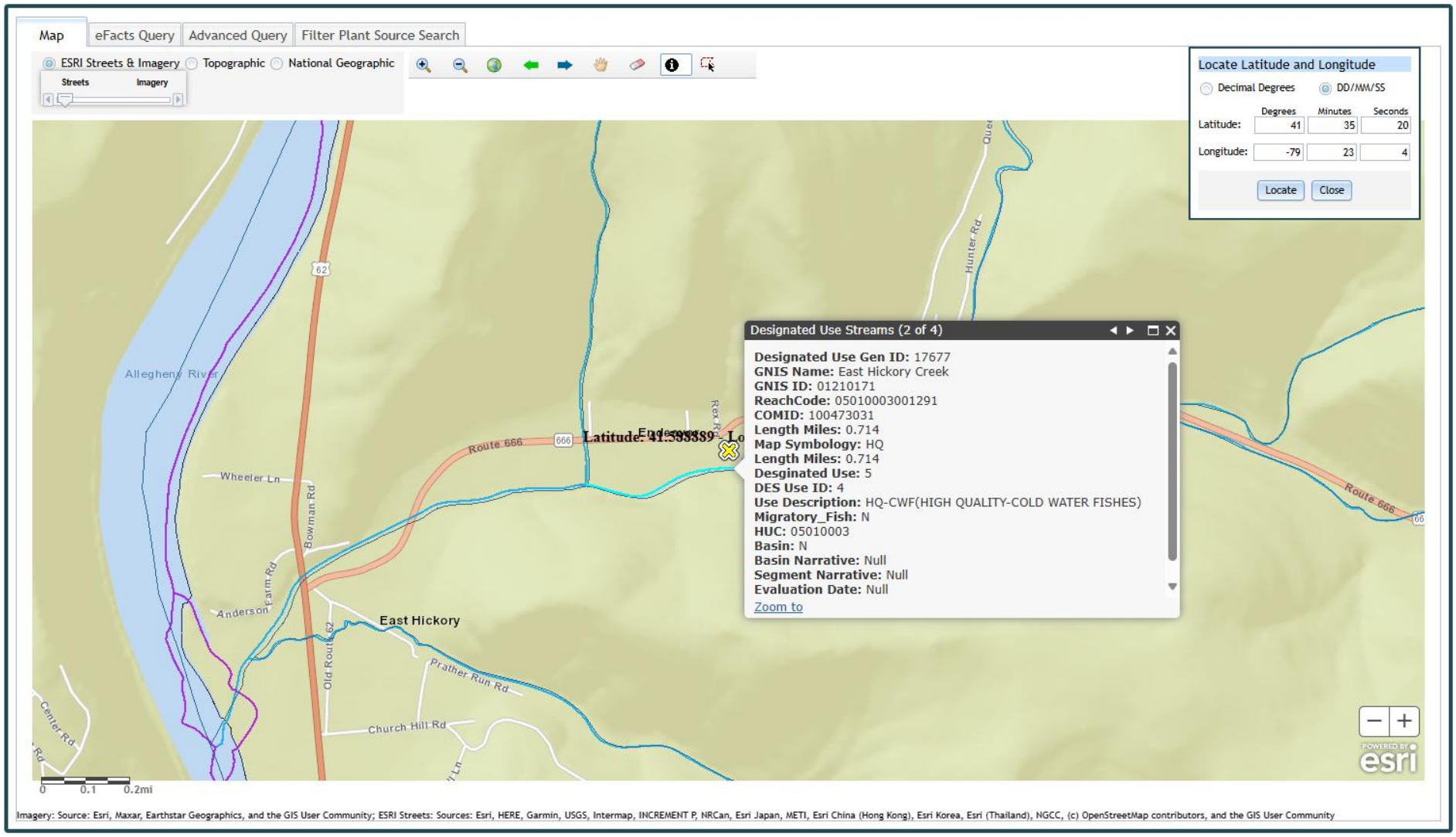
The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). 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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	4/week	Grab
DO	XXX	XXX	7.0 Daily Min	XXX	XXX	XXX	4/week	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.02	1/day	Grab
CBOD5 Nov 1 – Apr 30	1.0	1.5	XXX	20.0	30.0	40	1/month	Grab
CBOD5 May 1 – Oct 31	0.5	0.8	XXX	10.0	15.0	20	1/month	Grab
BOD5 Raw Sewage Influent	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
TSS Raw Sewage Influent	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
TSS	0.5	0.8	XXX	10.0	15.0	20	1/month	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	2/year	Grab
Ammonia Nov 1 – Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	1/month	Grab
Ammonia May 1 – Oct 31	XXX	XXX	XXX	3.0	XXX	6	1/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	2/year	Grab
E. Coli	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001

Attachment 1
eMapPA – East Hickory Creek Designated Use



Attachment 2
USGS StreamStats – Drainage Area (Outfall 001)

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	56.3	square miles	2.33	1720
ELEV	Mean Basin Elevation	1585	feet	898	2700
PRECIP	Mean Annual Precipitation	44	inches	38.7	47.9

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	6.57	ft^3/s	43	43
30 Day 2 Year Low Flow	9.15	ft^3/s	38	38
7 Day 10 Year Low Flow	3.28	ft^3/s	54	54
30 Day 10 Year Low Flow	4.38	ft^3/s	49	49
90 Day 10 Year Low Flow	6.28	ft^3/s	41	41

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
USGS StreamStats- Drainage Area (Endpoint)

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	57.3	square miles	2.33	1720
ELEV	Mean Basin Elevation	1581	feet	898	2700
PRECIP	Mean Annual Precipitation	44	inches	38.7	47.9

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	6.68	ft^3/s	43	43
30 Day 2 Year Low Flow	9.29	ft^3/s	38	38
7 Day 10 Year Low Flow	3.34	ft^3/s	54	54
30 Day 10 Year Low Flow	4.45	ft^3/s	49	49
90 Day 10 Year Low Flow	6.38	ft^3/s	41	41

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
TRC Spreadsheet

TRC EVALUATION

3.28	= Q stream (cfs)	0.5	= CV Daily
0.006	= Q discharge (MGD)	0.5	= CV Hourly
4	= 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)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	112.745	1.3.2.iii	WLA cfc =	109.910
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	42.011	5.1d	LTA_cfc =	63.896

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.170	

Attachment 6
WQM Model 7.0 Results

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
16F	55629	EAST HICKORY CREEK	**1.720**	1103.00	56.30	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	0.060	3.28	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
Hickory TWP STP	PA0264024	0.0000	0.0060	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	7.00	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
16F	55629	EAST HICKORY 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												
1.720	3.28	0.00	3.28	.0093	0.00373	.656	30.49	46.51	0.16	0.453	20.01	7.00
Q1-10 Flow												
1.720	2.10	0.00	2.10	.0093	0.00373	NA	NA	NA	0.13	0.581	20.02	7.00
Q30-10 Flow												
1.720	4.46	0.00	4.46	.0093	0.00373	NA	NA	NA	0.20	0.382	20.01	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	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16F	55629	EAST HICKORY 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
1.720	Hickory TWP ST	16.73	50	16.73	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
1.720	Hickory TWP ST	1.89	25	1.89	25	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)		
1.72	Hickory TWP STP	25	25	25	25	7	7	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16F	55629	EAST HICKORY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.720	0.006	20.014	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
30.492	0.656	46.509	0.165
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.06	0.037	0.07	0.701
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.239	5.827	Tsivoglou	6
Reach Travel Time (days)			
0.453			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.045	2.06	0.07	8.24
0.091	2.06	0.07	8.24
0.136	2.05	0.06	8.24
0.181	2.05	0.06	8.24
0.227	2.05	0.06	8.24
0.272	2.04	0.06	8.24
0.317	2.04	0.06	8.24
0.362	2.04	0.05	8.24
0.408	2.03	0.05	8.24
0.453	2.03	0.05	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16F	55629	EAST HICKORY 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)
1.720	Hickory TWP STP	PA0264024	0.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			7