

Application Type Renewal  
Facility Type Municipal  
Major / Minor Minor

## NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0113107  
APS ID 1075974  
Authorization ID 1418081

### Applicant and Facility Information

Applicant Name	<u>Columbia County</u>	Facility Name	<u>Briar Creek Park</u>
Applicant Address	<u>35 W Main Street</u> <u>Bloomsburg, PA 17815-1702</u>	Facility Address	<u>163 Briar Creek Lake Park Road</u> <u>Berwick, PA 18603</u>
Applicant Contact	<u>Wade Mays</u>	Facility Contact	<u>Wade Mays</u>
Applicant Phone	<u>(570) 784-1992</u>	Facility Phone	<u>(570) 784-1992</u>
Client ID	<u>63557</u>	Site ID	<u>254701</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Briar Creek Township</u>
Connection Status	<u>N/A</u>	County	<u>Columbia</u>
Date Application Received	<u>November 17, 2022</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>November 22, 2022</u>	If No, Reason	<u></u>
Purpose of Application	<u>Renewal of a NPDES Permit</u>		

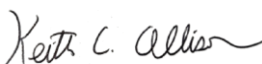

### Summary of Review

The subject facility is a publicly owned treatment plant (POTW) serving the Briar Creek Recreational Area Park in Briar Creek Township, Columbia County.

Sludge use and disposal description and location(s): The facility's wasted sludge is transferred to other WWTPs for further processing.

#### 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
✓		 Keith C. Allison / Project Manager	December 24, 2024
✓		 Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	December 24, 2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>0.02</u>
Latitude	<u>41° 3' 56.44"</u>	Longitude	<u>-76° 16' 45.98"</u>
Quad Name	<u>Mifflinville, PA</u>	Quad Code	<u></u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>East Branch Briar Creek (CWF)</u>	Stream Code	<u>28085</u>
NHD Com ID	<u>65639069</u>	RMI	<u>3.79</u>
Drainage Area	<u>5.2 mi<sup>2</sup></u>	Yield (cfs/mi <sup>2</sup> )	<u>0.06</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.32</u>	Q <sub>7-10</sub> Basis	<u>USGS Gage 01539000, Fishing Creek @ Bloomsburg, PA</u>
Elevation (ft)	<u>605</u>	Slope (ft/ft)	<u>n/a</u>
Watershed No.	<u>5-D</u>	Chapter 93 Class.	<u>CWF</u>
Existing Use	<u>CWF</u>	Existing Use Qualifier	<u>N/A</u>
Exceptions to Use	<u>N/A</u>	Exceptions to Criteria	<u>N/A</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>ORGANIC ENRICHMENT, THERMAL MODIFICATIONS</u>		
Source(s) of Impairment	<u>DAM OR IMPOUNDMENT</u>		
TMDL Status	<u>None</u>	Name	<u></u>
Nearest Downstream Public Water Supply Intake	<u>Danville Municipal Water Authority</u>		
PWS Waters	<u>Susquehanna River</u>	Distance from Outfall (mi)	<u>Approx. 20</u>

Changes Since Last Permit Issuance: None. The previously determined stream and drainage characteristics remain applicable.

Other Comments: No downstream water supply is expected to be affected by this discharge with the limitations and monitoring proposed.

Treatment Facility Summary				
Treatment Facility Name: Briar Creek Park STP				
WQM Permit No.	Issuance Date			
1972403	4/17/1972			
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	No Disinfection	0.02
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.02		Not Overloaded	Dewatering	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: The treatment as permitted under WQM Permit No. 1972403 consists of influent comminutor, bar screen, 20,000-gallon aeration tank, 5,100-gallon clarifier, 5,000-gallon sludge holding tank, erosion chlorinator, and chlorine contact tank.

Compliance History

DMR Data for Outfall 001 (from November 1, 2023 to October 31, 2024)

Parameter	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23
Flow (MGD) Average Monthly	0.0001	0.00001	0.0001	0.00001	0.0001	0.0001	ND	ND	ND	ND	ND	ND
pH (S.U.) Instantaneous Minimum	7.1	7.45	7.14	7.85	6.78	7.24						
pH (S.U.) Instantaneous Maximum	8.04	8.55	8.30	8.65	8.44	8.67						
TRC (mg/L) Average Monthly	0.48	0.34	0.39	0.284	0.26	0.41						
TRC (mg/L) Instantaneous Maximum	0.97	1.01	1.07	1.2	0.96	1.32						
CBOD5 (mg/L) Average Monthly	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0						
CBOD5 (mg/L) Instantaneous Maximum	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0						
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.2	< 5.0	< 5.0						
TSS (mg/L) Instantaneous Maximum	< 5.0	< 5.0	< 5.0	5.4	< 5.0	< 5.0						
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1.0	< 8.0	< 17	1.0	< 1.0						
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1.0	1.0	62.4	272.3	1.0	< 1.0						

**Compliance History, continued**

<b>Summary of Inspections:</b>	The facility has been inspected approximately annually by the Department over the past permit term. The most recent inspection on May 15, 2024 identified no violations at the time of inspection.
<b>Other Comments:</b>	There is one open violation for Columbia County in eFACTS for failure to meet design and construction standards at the Sawmill Road Office Building under the Safe Drinking Water Program.

Existing Effluent Limitations and Monitoring Requirements

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	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	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 Annl Avg	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

**Development of Effluent Limitations**

Outfall No. 001 Design Flow (MGD) 0.02  
Latitude 41° 3' 56.40" Longitude -76° 16' 46.00"  
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 <sub>5</sub>	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
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)

Comments: The above limitations are included in the existing permit.

**Water Quality-Based Limitations**

**CBOD<sub>5</sub>, DO, and NH<sub>3</sub>-N**

The WQM7.0 model allows the Department to evaluate point source discharges of dissolved oxygen (DO), carbonaceous BOD (CBOD<sub>5</sub>), and ammonia nitrogen (NH<sub>3</sub>-N) into free-flowing streams and rivers. To accomplish this the model simulates two basic processes: the mixing and degradation of NH<sub>3</sub>-N in the stream and the mixing and consumption of DO in the stream due to the degradation of CBOD<sub>5</sub> and NH<sub>3</sub>-N. WQM7.0 modeling was performed for the discharge to East Branch Briar Creek and showed that the secondary treatment limits listed above are adequate to protect the receiving waters. See Attachment B.

**TRC**

The Department uses a modeling spreadsheet to determine necessary WQBELs for TRC toxicity based on instream dilution. The attached modeling results (See attachment C) show that the BAT limit of 0.5 mg/l is adequate to protect the receiving stream.

**Toxics Management**

No further "Reasonable Potential Analysis" was performed to determine additional toxic parameters as candidates for limitations for this 0.02 MGD sewage treatment facility receiving no industrial influent.

**Chesapeake Bay Requirements**

A portion of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the Water Pollution Control Act, 33 U.S.C. §1313(d). Total Nitrogen and Total Phosphorus cap loads have been established for significant dischargers in Pennsylvania to reduce the total nutrient load to the Bay and meet State of Maryland Water Quality Standards. The Briar Creek Park treatment plant is considered an existing Phase 5, insignificant Chesapeake Bay discharger per the Phase III Watershed Implementation Plan (WIP) and thus has not received Cap Loads. Monitoring under the current permit found the Total Nitrogen and Total Phosphorus to average 8.68 and 1.07 mg/L, respectively. Because the current nutrient load from the discharge has adequately been characterized no further nutrient monitoring will be required at this time.

**e. Coli**

Annual e. coli monitoring will be required at this time due to recent changes to Chapter 93 of the Departments regulations and Department policy.

**Best Professional Judgment (BPJ) Limitations**

No additional BPJ limits are needed beyond the water quality and technology-based limits noted above.

**Anti-Backsliding**

No water quality based or BPJ limits were made less stringent consistent with the anti-backsliding requirements of 40 CFR 122.44(l).



**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) <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	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	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	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

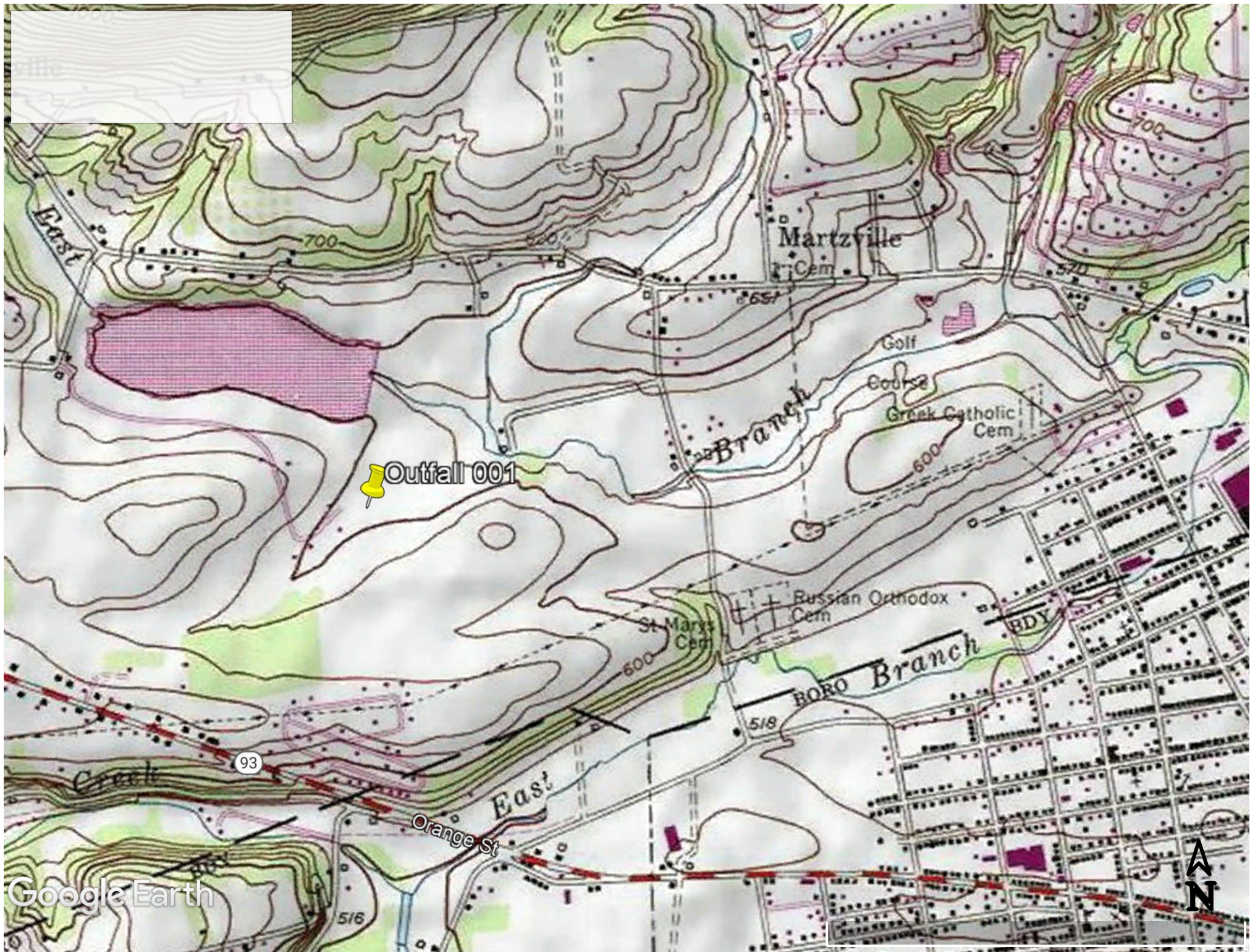
Other Comments: Total Nitrogen and Total Phosphorus monitoring have been removed as mentioned above. E. Coli monitoring is new as also mentioned above.

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment <b>B</b> )
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment <b>  </b> )
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment <b>C</b> )
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment <b>  </b> )
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" 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 checked="" 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 checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input checked="" type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP: <b>  </b>
<input type="checkbox"/>	Other: <b>  </b>

Attachments:

- A. Discharge Location Map
- B. WQM7.0 Model
- C. TRC Model







## 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
05D	28085	EAST BRANCH BRIAR CREEK	<b>3.790</b>	605.00	5.20	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)	<u>Tributary</u> Temp (°C)	<u>Stream</u> Temp (°C)	pH
	(cfsm)	(cfs)	(cfs)								
<b>Q7-10</b>	0.060	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00
<b>Q1-10</b>		0.00	0.00	0.000	0.000						
<b>Q30-10</b>		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
Briar Creek Par	PA0113107	0.0200	0.0000	0.0000	0.000	25.00	7.00

### Parameter Data

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

## 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
05D	28085	EAST BRANCH BRIAR CREEK	<b>3.590</b>	592.00	7.74	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)	<u>Tributary</u> Temp	<u>Stream</u> pH	Temp	pH
	(cfsm)	(cfs)	(cfs)						(°C)		(°C)	
<b>Q7-10</b>	0.060	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
<b>Q1-10</b>		0.00	0.00	0.000	0.000							
<b>Q30-10</b>		0.00	0.00	0.000	0.000							

### Discharge Data

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

### Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin		Stream Code				Stream Name						
05D		28085				EAST BRANCH BRIAR CREEK						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
3.790	0.31	0.00	0.31	.0309	0.01231	.432	9.18	21.25	0.09	0.141	20.45	7.00
Q1-10 Flow												
3.790	0.20	0.00	0.20	.0309	0.01231	NA	NA	NA	0.07	0.176	20.67	7.00
Q30-10 Flow												
3.790	0.42	0.00	0.42	.0309	0.01231	NA	NA	NA	0.10	0.121	20.34	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	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

## WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
05D	28085	EAST BRANCH BRIAR CREEK		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
3.790	0.020	20.451	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
9.177	0.432	21.246	0.087	
<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>	
4.08	0.790	2.26	0.725	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
7.770	20.111	Owens	6	
<u>Reach Travel Time (days)</u>	<b>Subreach Results</b>			
0.141	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.014	4.03	2.23	7.94
	0.028	3.98	2.21	8.07
	0.042	3.94	2.19	8.17
	0.057	3.89	2.16	8.17
	0.071	3.85	2.14	8.17
	0.085	3.81	2.12	8.17
	0.099	3.76	2.10	8.17
	0.113	3.72	2.08	8.17
	0.127	3.68	2.06	8.17
	0.141	3.64	2.04	8.17



## WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
05D	28085	EAST BRANCH BRIAR 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
3.790	Briar Creek Par	15.85	50	15.85	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
3.790	Briar Creek Par	1.85	25	1.85	25	0	0

### **Dissolved Oxygen Allocations**

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
3.79	Briar Creek Par	25	25	25	25	3	3	0	0

## WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
05D		28085	EAST BRANCH BRIAR 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)
3.790	Briar Creek Par	PA0113107	0.020	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

**TRC EVALUATION**

Input appropriate values in A3:A9 and D3:D9

0.32	= Q stream (cfs)	0.5	= CV Daily
0.02	= 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 = 3.318	1.3.2.iii	WLA cfc = 3.228
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.236	5.1d	LTA_cfc = 1.876

Source	Effluent Limit Calculations
PENTOXSD TRG	5.1f AML MULT = 1.231
PENTOXSD TRG	5.1g AVG MON LIMIT (mg/l) = 0.500 BAT/BPJ
	INST MAX LIMIT (mg/l) = 1.635

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	$1.5*((av\_mon\_limit/AML\_MULT)/LTAMULT\_afc)$