Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0294497**
Facility Type	**Non-Municipal**	APS ID	**1120588**
Major / Minor	**Minor**	Authorization ID	**1497147**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**1845 Baltimore Pike LLC**	Facility Name	**1845 Baltimore Pike**
Applicant Address	440 Stone Jug Road	Facility Address	1845 Baltimore Pike
	Biglerville, PA 17307-9097		Gettysburg, PA 17325-7313
Applicant Contact	Brian Long	Facility Contact	Brian Long
Applicant Phone	(704) 634-6006	Facility Phone	(704) 634-6006
Client ID	387890	Site ID	874768
Ch 94 Load Status	Not Overloaded	Municipality	Mount Joy Township
Connection Status	No Limitations	County	Adams
Date Application Received	August 28, 2024	EPA Waived?	Yes
Date Application Accepted	August 29, 2024	If No, Reason	

Purpose of Application: NPDES new permit.

Summary of Review

This fact sheet supports the issuance of new NPDES permit for discharge of treated sewage from the minor sewer Facility less than 0.05 MGD for 12-unit apartment building, 3-unit apartment building, and laundry + commercial building located in Mountain Joy Township, Adams County.

The annual average design flow is 6,187 gallons per day (0.006187 MGD). The hydraulic design flow is 0.00761 MGD. The discharge will be to Unnamed Tributary to Rock Creek which is classified as Warm Water Fishes (WWF).

The WQM permit for the construction of the treatment system with permit No. WQM 0124401 is concurrently under review.

DEP has prepared this report for the applications for both NPDES and WQM permits.

DEP Planning for the project was approved under Code No. A3-01924-271-3 on March 25, 2024.

Based on the review outlined in this report, it is recommended that the NPDES permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	February 21, 2025
X		/s/ Daniel W. Martin, P.E. / Environmental Engineer Manager	February 28, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.006187
Latitude	39º 48' 59.00"	Longitude	-77º 12' 17.00"
Quad Name	Gettysburg	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	UNT 59139 to Rock Creek	Stream Code	59139
NHD Com ID	53320378	RMI	0.1500
Drainage Area	0.52 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	447.89	Slope (ft/ft)	Warm water fishes
Watershed No.	13-D	Chapter 93 Class.	
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	
Nearest Downstream Public Water Supply Intake	City of Frederick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 9.0 miles

Changes Since Last Permit Issuance: new

Drainage Area

The discharge is to UNT 59139 to Rock Creek at RMI 0.15 miles. A drainage area upstream of the discharge is estimated to be 0.52 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow

There are no nearby stream gages with low flow data that have extensive or recent periods of record. Since USGS PA StreamStats estimated the drainage area that is below the minimum value allowed by USGS's regression equations, the USGS gage station No. 59041 on Rock Creek watershed (at the PA/MD border) will be used to calculate the Q_{7-10} at the point of discharge using a low flow yield method. The Q_{7-10} here is 2.71 cfs and the drainage area is 63.5 mi^2 which results in a Q_{7-10} low flow yield of 0.04 cfs/mi^2. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

$$\text{Low Flow Yield} = Q_{7-10gage} / \text{Drainage Area}_{gage} = 2.71 \text{ cfs} / 63.5 \text{ mi}^2 = 0.04 \text{ cfs/mi}^2$$
$$Q_{7-10discharge} = 0.04 \text{ cfs/mi}^2 * \text{Drainage Area}_{discharge} = 0.04 \text{ cfs/mi}^2 * 0.52 \text{ mi}^2 = 0.02 \text{ cfs}$$
$$Q_{30-10} = 1.36 * Q_{7-10discharge} = 1.36 * 0.02 \text{ cfs} = 0.027 \text{ cfs}$$
$$Q_{1-10} = 0.64 * Q_{7-10discharge} = 0.64 * 0.02 \text{ cfs} = 0.013 \text{ cfs}$$

The resulting dilution ratio (under Q_{7-10} conditions) is $Q_{stream}/Q_{discharge}$ = 0.02 cfs/[0.062 MGD*(1.55 cfs/MGD)] = 0.21:1

Public Water Supply

The nearest downstream public water supply is the PA-MD State Border located on the Rock Creek, approximately 9.0 miles downstream of the discharge point. Based on the nature of discharge, the discharge is not expected to impact the public water supply standards.

Rock Creek

25 Pa Code § 93.9z classifies UNT 59139 to Rock Creek as warm water fishes and migratory fishes surface water. Based on the 2024 Integrated Water Quality Report, Rock Creek is impaired due to nutrients caused by agriculture and municipal point source (see Table 1). A TMDL does not currently exist for this stream segment.

2024 PA Integrated Water Quality Monitoring and Assessment Report Category 5 – Pollutants Requiring a TMDL			
Rock Creek (02070009)			
Aquatic Life (15114) – 20.94 miles			
Source	Cause	Date Listed	TMDL Date
Agriculture	Nutrients	2002	2015
Municipal Point Source	Nutrients	2002	2015

Table 1 Impaired for one or more designated use by any pollutant and requiring a TMDL

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: 1845 Baltimore Pike LLC

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	No Treatment		Ultraviolet	0.006187

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.00761	14.02	Not Overloaded		Other WWTP

Changes Since Last Permit Issuance: new

Other Comments:

Compliance History	
Summary of DMRs:	N/A
Summary of Inspections:	N/A

Other Comments: A file review revealed that there is no Clean Water open violation associated with this client.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.006187
Latitude 39º 47' 59.00" **Longitude** -77º 12' 17.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments:
- The Total Residual Chlorine is not applied to this facility because UV is disinfection.
- DEP's guidance document titled "Implementation Guidance for Evaluating Wastewater Discharges to Drainage Ditches and Swales" or Dry Stream guidance, document ID 391-2000-014 will be used along with TBEL, WQBEL, and BPJ to develop effluent limits.

Dry Stream Guidance Limitations:

Dry stream guidance (*391-2000-014, Final April 12, 2008, page 6*) indicates advanced treatment is required "For discharges to intermittent and ephemeral streams, drainage channels and swales, and storm sewers, a high degree of treatment is required to compensate for the lack of available assimilative capacity and to minimize the potential for nuisance conditions. Effluent limits will be determined by the regional permit engineer on a case-by-case basis, but for discharges of treated sewage and similar oxygen-consuming wastes, effluent limits should include and be at least as stringent as these, or equivalent:

$CBOD_5$ – 10 mg/L as monthly average;
TSS – 10 mg/L as monthly average;
Total N – 5 mg/L as a monthly average;
Dissolved oxygen – minimum 6 mg/L at all times;
Phosphorus – 0.5 mg/L as a monthly average"

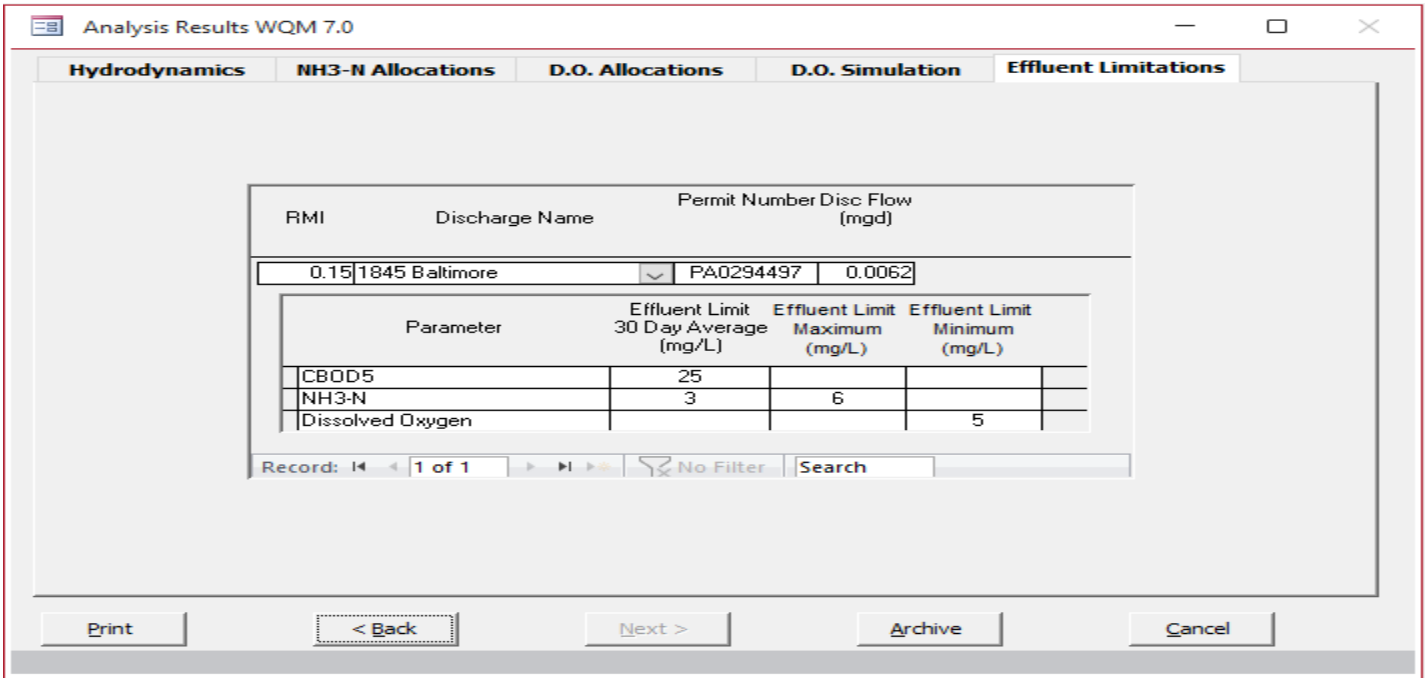
However, the guidance postdates the issuance of the original NPDES permit for this facility. The existing permit doesn't contain limits for TN and Phosphorous. Section I of the 2008 guidance states that the policy is for new or expanded discharges. Since this is not new or expanding the existing limits developed according to Section IV of the 1997 guidance. These limits are as follows:

$CBOD_5$ and TSS - 10 mg/L as a monthly average;
20 mg/L as IMAX
NH_3-N - 3 mg/L as a monthly average;
Dissolved oxygen – 3 mg/L or greater, monthly average
Bacteria – 200/100 ml summertime; 2000/100 ml wintertime

Water Quality-Based Limitations

Ammonia (NH_3-N):
NH_3N calculations are based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached WQM 7.0 computer model of the stream:

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	25°C	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)



Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a summer limit of 3.0 mg/L as a monthly average and 6.0 mg/L instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects at the point of discharge. Winter limits are calculated by multiplying summer limits with a factor of 3. The minimum monitoring frequency will be 2/month. However, these limits are same as dry stream 3.0 mg/L AML & 6.0 mg/L IMAX for summer will be in the permit.

$CBOD_5$ and Total Suspended Solids:
The discharge is to a dry ditch that is a tributary of Unnamed Tributary of Rock Creek. DEP has been consistently implementing advanced treatment requirements specified in DEP's technical guidance no. 391-2000-014 as effluent limits for $CBOD_5$ and Total Suspended Solids (TSS) in the permit. These limits are 10.0 mg/L (average monthly) and 20.0 mg/L (IMAX) and are more stringent than the secondary treatment TBELs. As the water quality analysis indicated that these limits are still adequate, DEP will include these limits in the permit.

Total Phosphorus:
Nutrient impairment was previously identified by DEP for the Rock Creek basin. DEP previously determined that local Phosphorus concentration-based effluent limits are necessary for this facility to ensure that the facility does not additionally contribute to impairment. The 2.0 mg/L average monthly & 4.0 mg/L IMAX limits requirements will be in the permit. The minimum monitoring frequency will be 2/month.

Dissolved Oxygen (D.O.):
A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). It is recommended to include this limit in the draft permit to ensure that the facility will achieve compliance with DEP water quality standards.

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml.

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/year will be included in the permit to be consistent with the recommendation from this SOP.

Best Professional Judgment (BPJ) Limitations

Ultraviolet (UV) Monitoring:
The UV system daily monitor and report the UV light intensity ($\mu W/cm^2$) will be included in the permit.

Chesapeake Bay Strategy:
The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001).

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed, in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011 and Phase 2 in March 2012. In accordance with the Phase 2 WIP and its supplement, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal.

The Phase 2 WIP categorizes this facility as a phase 5 non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annual. As mentioned above, twice monthly monitoring of these pollutants will be written in the permit as recommended by DEP's SOP.

Given that planning approval for the project was not awarded prior to 2005 and given that this is a new proposed discharge into the Chesapeake Bay Watershed, mass limits for TP and TN of 0 mg/L have been proposed in this permit. The applicant has been previously informed that they will need to purchase nutrient credits.

This plant is classified as a phase 5, will be required to monitor and report TN once a year, and the 2.0 mg/LTP average monthly & 4.0 mg/L IMAX requirements will be in the permit.

Additional Consideration

Flow Monitoring
The requirement to monitor the volume of effluent will propose permit per 40 CFR § 122.44(i)(1)(ii).

Monitoring Frequency and Sample Type
The proposed monitoring frequencies for all pollutants are proposed as twice-per-month grab samples as recommended by PA Doc No. 362-0400-001, Table 6-3.

Antidegradation (93.4)
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams
This discharge is not located on a 303d listed stream segment.

Class A Wild Trout Fisheries
No Class A Wild Trout Fisheries are impacted by this discharge.

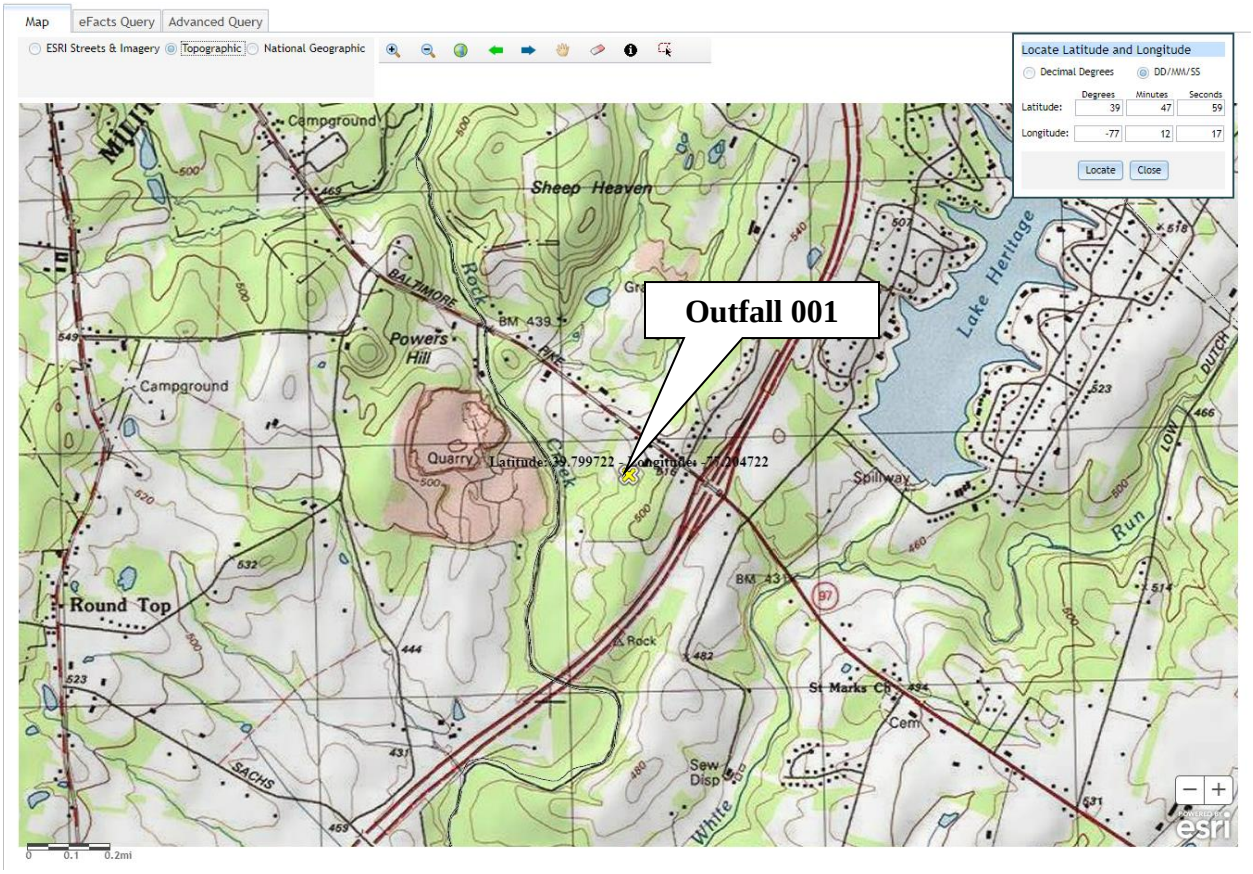
Anti-Backsliding

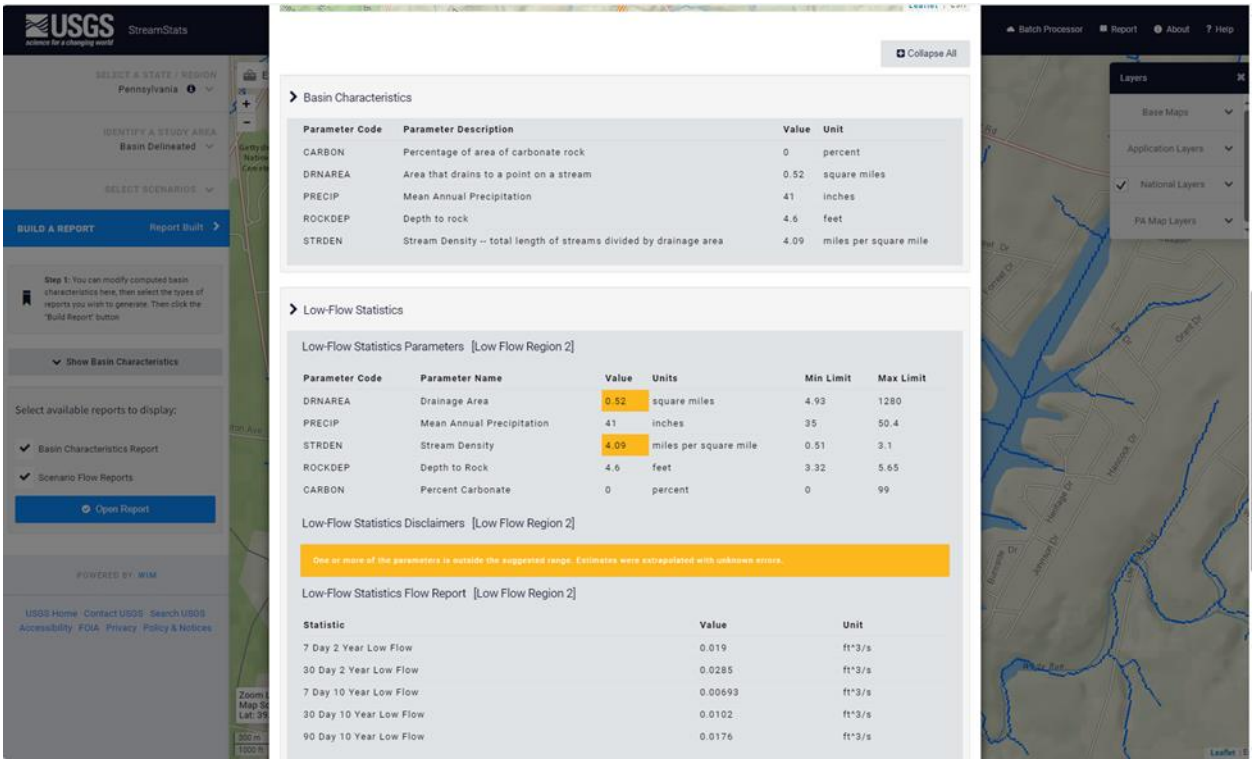
Unless stated otherwise in this fact sheet, all permit requirements proposed in this fact sheet are at least as stringent as existing permit requirements in accordance with 40 CFR §122.44(l)(1).

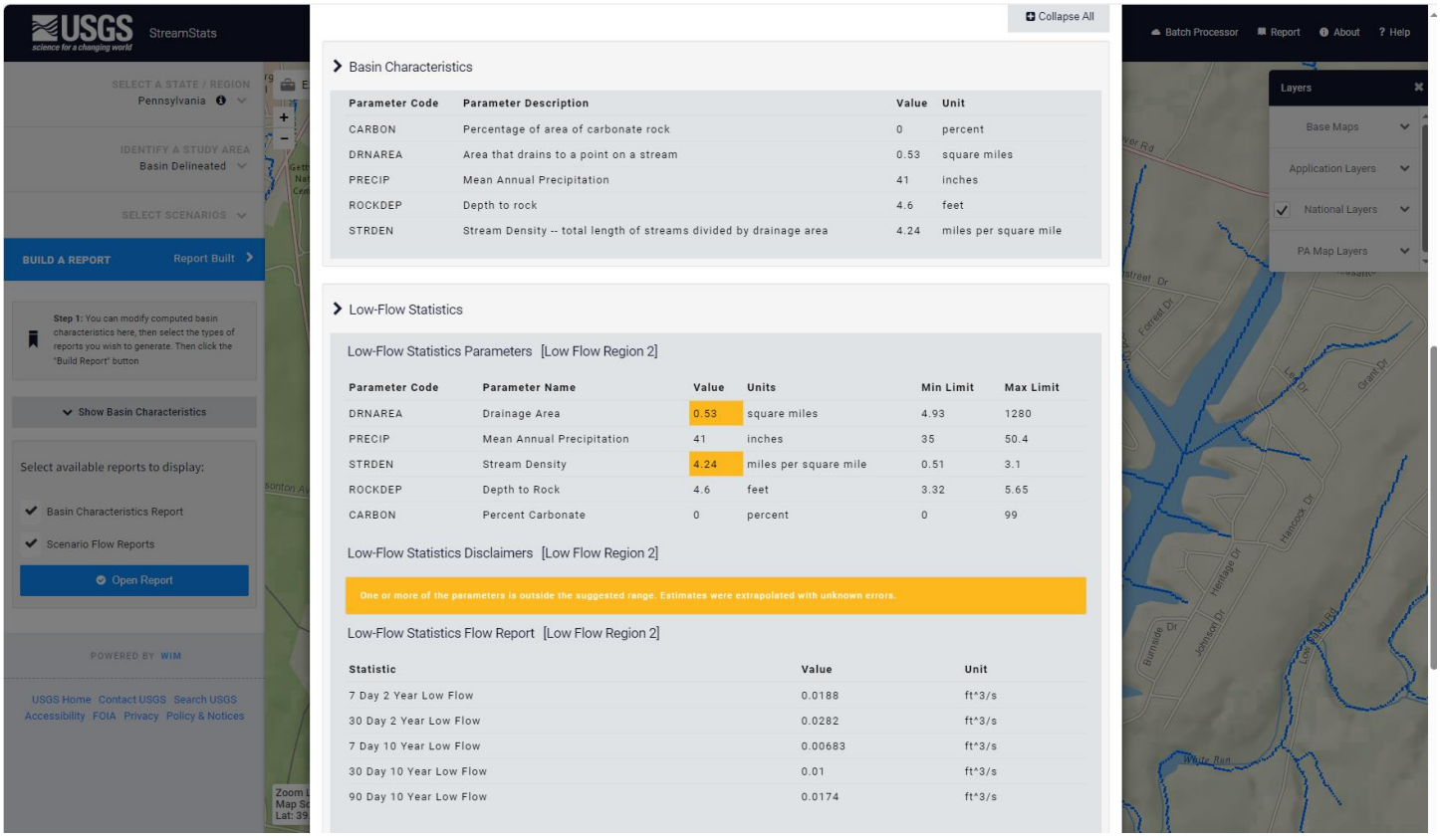
WQM 7.0 MODEL INPUT:

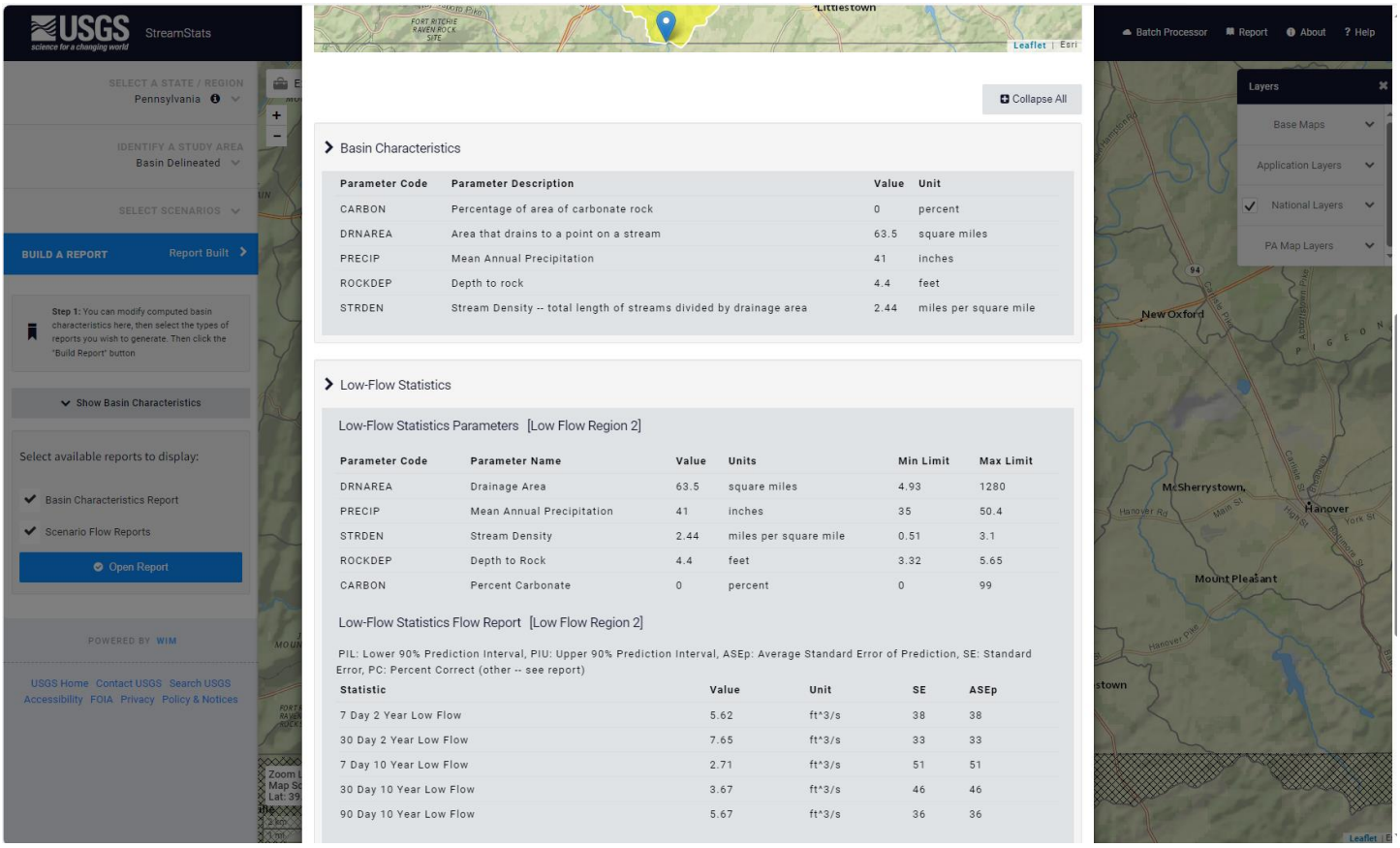
- Discharge pH = 7.0 (Default)
- Discharge Temperature = 25°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 25°C (Default for WWF)
- Background NH_3-N = 0 (Default)

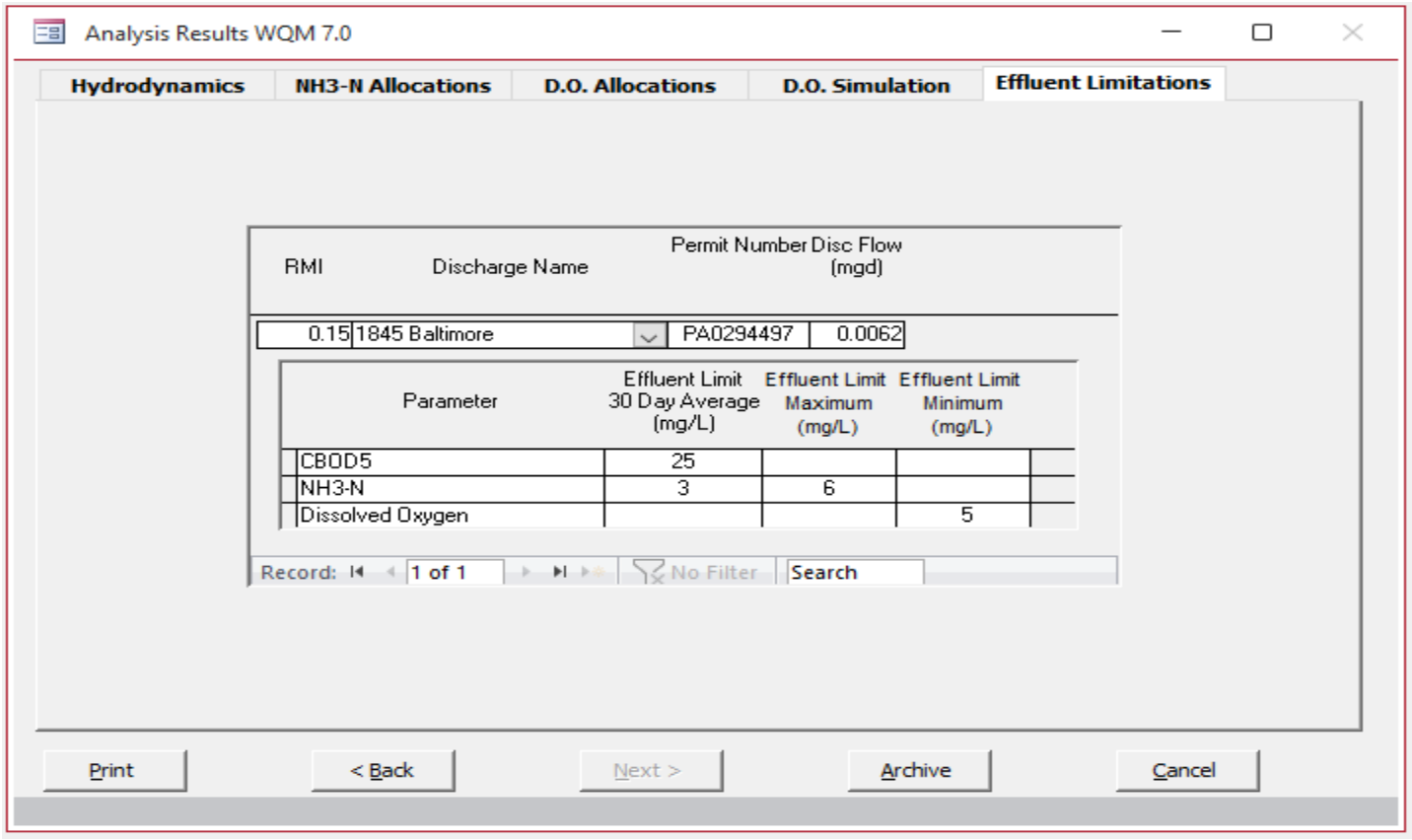
1. Outfall 001 to UNT 59139 Rock Creek
   a. Elevation: 447.69 ft
   b. RMI: 0.150 miles
   c. Drainage Area: 0.52 $mi.^2$
   d. Low Flow Yield: 0.04 $cfs/mi.^2$
   e. Discharge Flow: 0.00620 MGD
2. Just before Rock Creek
   a. Elevation: 425.15 ft
   b. RMI: 0.001 miles to Rock Creek
   c. Drainage Area: 0.53 $mi.^2$
   d. Low Flow Yield: 0.04 $cfs/mi.^2$
   e. Discharge Flow: 0.000 MGD




USGS StreamStats
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 0.52 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4.6 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 4.09 | miles per square mile
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 0.52 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
STRDEN | Stream Density | 4.09 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.6 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.019 | ft^3/s
30 Day 2 Year Low Flow | 0.0285 | ft^3/s
7 Day 10 Year Low Flow | 0.00693 | ft^3/s
30 Day 10 Year Low Flow | 0.0102 | ft^3/s
90 Day 10 Year Low Flow | 0.0176 | ft^3/s
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers


USGS StreamStats
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 0.53 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4.6 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 4.24 | miles per square mile
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 0.53 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
STRDEN | Stream Density | 4.24 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.6 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.0188 | ft^3/s
30 Day 2 Year Low Flow | 0.0282 | ft^3/s
7 Day 10 Year Low Flow | 0.00683 | ft^3/s
30 Day 10 Year Low Flow | 0.01 | ft^3/s
90 Day 10 Year Low Flow | 0.0174 | ft^3/s
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers


USGS StreamStats
SELECT A STATE / REGION
Pennsylvania
IDENTIFY A STUDY AREA
Basin Delineated
SELECT SCENARIOS
BUILD A REPORT
Report Built
Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Littlestown
Leaflet | Esri
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 63.5 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4.4 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.44 | miles per square mile
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 63.5 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
STRDEN | Stream Density | 2.44 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.4 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Flow Report [Low Flow Region 2]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 5.62 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 7.65 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 2.71 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 3.67 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 5.67 | ft^3/s | 36 | 36
Batch Processor Report About Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
New Oxford
McSherrystown
Hanover
Mount Pleasant
Leaflet


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
0.15
1845 Baltimore
PA0294497
0.0062
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
3
6
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
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Archive
Cancel

rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin: 13D | Stream Code: 59139 | Stream Name: Trib 59139 to Rock Creek

RMI	Name	Permit Number	Disc. Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.150	1845 Baltimore	PA0294497	0.006	CBOD5	25		
				NH3-N	3	6	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin: 13D | Stream Code: 59139 | Stream Name: Trib 59139 to Rock Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.150	1845 Baltimore	11.07	6	11.07	6	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
0.150	1845 Baltimore	1.37	3	1.37	3	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5 Baseline (mg/L)	CBOD5 Multiple (mg/L)	NH3-N Baseline (mg/L)	NH3-N Multiple (mg/L)	Dissolved Oxygen Baseline (mg/L)	Dissolved Oxygen Multiple (mg/L)	Critical Reach	Percent Reduction
0.15	1845 Baltimore	25	25	3	3	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin: 13D | Stream Code: 59139 | Stream Name: Trib 59139 to Rock Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.150	0.006	25.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
2.636	0.291	9.064	0.610
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
9.26	1.233	0.95	1.029
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.220	27.607	Owens	5
Reach Travel Time (days)			
0.230			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.023	8.93	0.92	7.33
0.046	8.62	0.90	7.40
0.069	8.32	0.88	7.45
0.092	8.03	0.86	7.49
0.115	7.75	0.84	7.53
0.138	7.48	0.82	7.54
0.161	7.21	0.80	7.54
0.184	6.96	0.78	7.54
0.207	6.72	0.77	7.54
0.230	6.48	0.75	7.54

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
W.L.A. Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin: 13D | Stream Code: 59139 | Stream Name: Trib 59139 to Rock Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.150	0.02	0.00	0.02	.0096	0.02665	.291	2.64	9.06	0.01	0.250	25.00	7.00
Q1-10 Flow												
0.150	0.01	0.00	0.01	.0096	0.02665	NA	NA	NA	0.03	0.369	25.00	7.00
Q30-10 Flow												
0.150	0.03	0.00	0.03	.0096	0.02665	NA	NA	NA	0.01	0.203	25.00	7.00

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rptGeneral

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
13D	59139	Trib 59139 to Rock Creek	**0.150**	447.69	0.52	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	W/D Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.010	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
1845 Baltimore	PA0294497	0.0062	0.0062	0.0062	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	5.00	8.24	0.00	0.00
NH3-N	3.00	0.00	0.00	0.70

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rptGeneral

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
13D	59139	Trib 59139 to Rock Creek	**0.001**	425.15	0.53	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	W/D Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.010	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
1845 Baltimore	PA0294497	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Intensity (µw/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Total Nitrogen	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other: