pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0266663**
Facility Type	**Non-Municipal**	APS ID	**953555**
Major / Minor	**Minor**	Authorization ID	**1430671**

Applicant and Facility Information

Applicant Name	**Gettysburg Battlefield Resort**	Facility Name	**Gettysburg Battlefield Resort**
Applicant Address	1960 Emmitsburg Road	Facility Address	1960 Emmitsburg Road
	Gettysburg, PA 17325-7196		Gettysburg, PA 17325
Applicant Contact	Richard Kellermann	Facility Contact	Richard Kellermann
Applicant Phone	(717) 370-6462	Facility Phone	(717) 337-3363
Client ID	339149	Site ID	255546
Ch 94 Load Status	Not Overloaded	Municipality	Cumberland Township
Connection Status	No Limitations	County	Adams
Date Application Received	March 3, 2023	EPA Waived?	Yes
Date Application Accepted	March 15, 2023	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The PA Department of Environmental Protection (DEP or Department) has received an NPDES permit renewal application from Gettysburg Battlefield Resort (permittee) for permittee's Gettysburg Battlefield Resort WWTP, located in Cumberland Township, Adams County on March 3, 2023. The existing permit was issued on June 21, 2018 which will expire on June 30, 2023.

The facility has an average annual design flow and a hydraulic design capacity of 0.03 MGD. The authorized discharge of treated sewage is from the existing treatment plant located in Cumberland Township, Adams County into UNT to Plum Run.

The WQM Part II Permit No. 0118402 was issued on June 21, 2018, however the Wastewater treatment plant is not constructed based on the NPDES renewal application document showed on page 1.

Sludge use and disposal description and location(s): N/A

Changes from the previous permit: The E. Coli. monitoring and report requirements will add to the permit. Winter Ammonia-Nitrogen limit of 6.5 mg/L AML & 13.0 mg/L IMAX corrected to 6.0 mg/L & 12.0 mg/L.

Based on the review outline in this fact sheet, it is recommended that the 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	April 28, 2023
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	May 26, 2023

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.03
Latitude	39º 46' 40.72"	Longitude	77º 15' 12.56"
Quad Name	Fairfield	Quad Code	2027
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Plum Run (WWF, MF)	Stream Code	N/A, 59058 Plum Run
NHD Com ID	53320826	RMI	0.5500
Drainage Area	0.2 mi.^{2}	Yield (cfs/mi^2)	Please see comment below
Q_{7-10} Flow (cfs)	Please see comment below	Q_{7-10} Basis	Please see comment below
Elevation (ft)		Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	WWF, MF
Existing Use	**none**	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	City of Fredrick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 37.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Conewago Creek at RMI 0.55 miles. A drainage area upstream of the discharge is estimated to be 0.2 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow
According to StreamStats, the discharge point on UNT to Plum Run has a Q_{7-10} of 0.00368 cfs and a drainage area of 0.2 mi.^{2} (resulting in a low flow yield of 0.018 cfs/mi.^{2}). However, the drainage area at the discharge point is well below the suggested minimum value of 4.93 mi.^{2} for the regression equations used. Therefore, the entire Pennsylvania portion of the Rock Creek watershed was chosen as an appropriate representative drainage area. The Q_{7-10} for Rock Creek at the PA-MD border 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):

Low Flow Yield = 2.71 cfs / 63.5 mi.^{2} ≈ 0.04 cfs/mi.^{2}
Q_{7-10} = 0.04 cfs/mi.^{2} * 0.2 mi.^{2} ≈ 0.008 cfs
Q_{30-10} = 1.36 * 0.008 cfs ≈ 0.01 cfs
Q_{1-10} = 0.64 * 0.008 cfs ≈ 0.005 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 0.008 cfs / [0.030 MGD * (1.547 cfs/MGD)] = 0.17:1.

Public Water Supply
The nearest downstream public water supply intake is the City of Frederick, MD on the Monocacy River, approximately 37.0 miles downstream of this discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

303d Listed Streams
The receiving stream, UNT to Plum Run, is not impaired and not on the 303d list. However, however, Rock Creek is impaired for nutrients due to agriculture and municipal point source. No TMDL is proposed to date.

Point of First Use Survey

The receiving stream has a COMID of 53320826 but doesn't have a stream code. The secondary receiving stream, Plum Run, has a stream code of 59058. Since the ratio of discharge to stream flow is very low, a Point of First Use (POFU) survey was conducted on November 7, 2017. The survey was conducted by DEP's Regional Water Pollution Biologist Supervisor and the permit writer. During the survey, three points on the receiving stream were examined. One above the proposed discharge point, one at the approximate discharge point, and one about 50' downstream of the Ridge Road crossing. The POFU was determined to be at 2nd point, at the discharge point. The stream had some trickling flow at point 1, upstream of DP, but it may be due to rainfall event in previous night and leaking pump station nearby. Two overflows from the nearby pond were identified, though the eMapPA identifies only one. eMapPA shows the stream began as a result of overflow from the pond, but the stream was existing well above the DP. A modified map is attached with this report showing the actual stream location and sampling points.

In summary, the POFU is at point 2 and stream is perennial at DP. However, DEP's Standard Operating Procedure (SOP) titled "Establishing Effluent Limitations for Individual Sewage Permits (SOP No. BPNPSM-PMT-033, revised August 24, 2021)" indicated "if there is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow), for new or expanding discharges, apply the more stringent treatment requirements in DEP's *Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers* (391-2000-014)." Since the Q7-10: design flow is 0.17:1, which is less than 3:1, the above referenced guidance will be applicable. The dry stream limits will be discussed in "Development of Effluent Limitations" section of this report at page 4.

Discharge Point (DP) RMI

Since the receiving stream doesn't have a stream code, it doesn't have a defined RMI. Without a stream code, WQM model can't be utilized. The secondary receiving stream, Plum Run, has a stream code. To run the model, the length of the receiving stream from DP to confluence with Plum Run is added to the Plum Run RMI at confluence with UNT to locate a virtual DP. The length of stream from DP to confluence with Plum Run is about 0.55 mile, per eMapPA's distance measurement tool. The RMI of Plum Run at confluence with this UNT is 1.81 mile, per eMapPA. So, the virtual DP on Plum Run will have an RMI of 1.81 mile + 0.55 mile or 2.36 miles.

Treatment Facility Summary

Treatment Facility Name: Gettysburg Battlefield Resort STP

WQM Permit No.	Issuance Date
0118402	6/21/2018

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration With Solids Removal	Ultraviolet	0.03

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.03	62.55	Not Overloaded	Aerobic Digestion	

Changes Since Last Permit Issuance:

The project description section of the NPDES permit package indicated the following treatment process:

Influent screening → Flow Equalization → Secondary Treatment → Clarification → UV disinfection → discharge through outfall 001

Dry stream guidance indicates to conduct a Channel Conveyance Analysis to demonstrate that expected velocities in the stream, channel, swale or sewer will neither exceed the conveyance capacity of the channel, nor result in progressive scour of the channel bottom or sides. A discharge flow equalization may also be needed to limit velocities in the channel to an acceptable range. As an additional requirement for discharges of treated sewage, sand filters or equivalent are required in all cases.

Compliance History	
Summary of DMRs:	None, the sewage treatment facility has not begun construction, yet.
Summary of Inspections:	10/30/2019: Mr. Benham, DEP WQS, conducted a compliance evaluation inspection. There were no violations identified during inspection. Mr. Kellerman did not have a estimated date for the beginning of construction. During the peak season, two areas with the septic tanks systems are pumped-out approximately four times a week to prevent sanitary sewage overflows by Smith's Sanitary Septic Services.

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.03
Latitude 39º 46' 40.72" **Longitude** -77º 15' 12.56"
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: Total Residual Chlorine is not applied to this facility.

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"

These values will be compared to TBELS, WQBELs, and BPJ, and most stringent limitations will be applied in the permit.

Water Quality-Based Limitations

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

*	Discharge pH	7.0	(Default per 391-2000-007)
*	Discharge Temperature	20°C	(Default per 391-2000-007)
*	Stream pH	7.0	(Default per 391-2000-006)
*	Stream Temperature	25°C	(Default for WWF per 391-2000-003)
*	Background NH_3-N	0 mg/L	(Assumed since no upstream WWTPs)

The detailed model results are attached. The above method indicates that at a discharge of 0.030 MGD, limits of 2.19 (2.0) mg/L NH_3-N as a monthly average (AML) and 4.38 (4.0) mg/L NH_3-N instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects. However, these limits are same as existing average monthly limit (AML) of 2.0 mg/L, and IMAX of 4.0 mg/L will remain in the proposed permit. Winter NH_3-N limits are derived by a seasonal multiplier of 3, per 391-2000-01.

Dissolved Oxygen (D.O.):
A minimum of 5.0 mg/L for D.O. is recommended by DEP's SOP. Dry stream guidance requires a minimum of 6.0 mg/l. More stringent 6.0 mg/l will be placed in the permit.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model indicates that an average monthly limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Dry stream limits are more stringent and will be applied. A multiplication factor of 2 will be used to calculate Instantaneous Maximum (IMAX) value. Minimum monitoring frequency will be 2/month.

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 25 Pa. Code § 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 1.9 revised March 22, 2021, a routine monitoring for E. Coli will be included in the permit under 25 Pa. Code §92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD – 0.05 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.

UV:
The UV system monitor and report the UV light dosage (mjoules/cm^2) will remain in the proposed permit.

Toxics:
Minor sewage facilities with a design flow less than 0.1 MGD are not required to submit toxic data in application form. Due to the lack of data, toxics monitoring or limit requirement could not be evaluated.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The limits of 30.0 mg/L average monthly and 60.0 mg/L instantaneous maximum will be placed in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). Dry stream limits of 10.0 mg/L AML & 20.0 mg/L IMAX are more stringent and will be applied. Minimum monitoring frequency will be 2/month.

Total Phosphorus:
Dry stream limit for Total Phosphorus is 0.5 mg/l as monthly average. IMAX limit is 1.0 mg/l. Minimum monitoring frequency is 2/month.

Total Nitrogen:
Dry stream limit for Total Nitrogen is 5.0 mg/l as monthly average. Minimum monitoring frequency is 1/month.

Chesapeake Bay Strategy:
In the Phase 3 WIP Wastewater Supplement revised on July 29, 2022, Attachment C, page 29, of this document shows that Reading Township Municipal Authority-Lauchmans Bottom STP has been allocated 0.0 lbs/year of TN and 0.0 lbs/year of TP. This approach, consistent with the Chesapeake Bay TMDL, was based on the actual performance data previously evaluated by the Department. Since the permittee is easily capable of achieving compliance with these loads, the Department determines that no "compliance schedule" for the requirements associated with the Chesapeake Bay Strategy is necessary. Accordingly, the Chesapeake Bay nutrient existing limitations and monitoring requirements will remain in the proposed permit.

Anti-Backsliding
Anti-backsliding is not applicable since the permittee doesn't have an existing limit to compare with.

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.

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

Phase 3 WIP Wastewater Supplement
Revised, July 29, 2022

NPDES Permit No.	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TP Cap Load (lbs/yr)	TN Delivery Ratio	TP Delivery Ratio
PA0232971	FRANKLIN TWP LAIRDSVILLE WWTP	7/30/2018	7/31/2023	10/1/2018	60	9.7	0.656	0.517
PA0233692	SOUTH CREEK TOWNSHIP WWTP	6/11/2020	6/30/2025	2/1/2015	0	0	0.732	0.399
PA0234028	WETLAND EXT PROJ	5/22/2019	5/31/2024	10/1/2013	0	0	0.641	0.323
PA0247715	AMBLEBROOK GETTYSBURG	11/19/2020	5/31/2022	01/01/2009	5479	274	0.514	0.720
PA0248029	HUSTONTOWN STP	7/16/2020	7/31/2025	2/1/2013	682	85	0.683	0.298
PA0248061	JEFFERSON CODORUS STP	9/21/2020	9/30/2025	10/1/2013	6,624	828	0.709	0.411
PA0260738	NITTERHOUSE CONCRETE PRECAST PLT	11/22/2017	11/30/2022	10/1/2017	0	0	0.932	0.851
PA0261131	TAMARACK MHP	3/1/2019	2/29/2024	10/1/2008	1,260	0	0.558	0.553
PA0261343	JOSHUA HILL STP	7/21/2015	7/31/2020	8/1/2015	0	0	0.175	0.322
PA0261378	SHEETZ CLARKS FERRY	11/22/2016	11/30/2021	10/1/2013	38	3.8	0.739	0.400
PA0261416	READING TWP LAUCHMANS BOTTOM STP	1/12/2018	1/31/2023	12/1/2011	0	0	0.684	0.189
PA0261572	MT HOPE NAZARENE RETIREMENT COMM	1/23/2020	1/31/2025	10/1/2011	605	0	0.596	0.477
PA0261645	HERITAGE HOUSE WHITE SULPHUR SPRINGS	11/17/2017	11/30/2022	10/1/2011	380	0	0.472	0.216
PA0261661	COMFORT INN WASTEWATER	3/26/2020	3/31/2025	10/1/2012	181	0	0.780	0.477
PA0261718	WINTER GREENES HOMEOWNERS ASSOCIATION	10/26/2018	10/31/2023	7/1/2012	0	0	0.668	0.063
PA0262072	KNOUSE FOODS PEACH GLEN FRUIT PROC FAC	4/20/2016	4/30/2021	5/1/2016	0	0	0.495	0.218
PA0262137	LOG CABIN MHP STP	9/15/2015	9/30/2020	10/1/2015	0	0	0.602	0.563
PA0263711	BENEZETTE WWTP	4/17/2018	4/30/2023	10/1/2012	0	0	0.644	0.241
PA0266086	SPRING GROVE STP	9/23/2015	9/30/2020	10/1/2015	7,306	974	0.796	0.439
PA0266663	GETTYSBURG BATTLEFIELD RESORT STP	6/21/2018	6/30/2023	10/1/2018	0	0	0.631	0.720
PA0276073	LAKE CAREY WWTP	7/19/2018	7/31/2023	10/1/2018	0	0	0.806	0.517
PA0247910	BETHEL TOWNSHIP FRYSTOWN STP	5/24/2021	7/31/2024	6/1/2021	8,045	188	0.735	0.455

WQM 7.0:

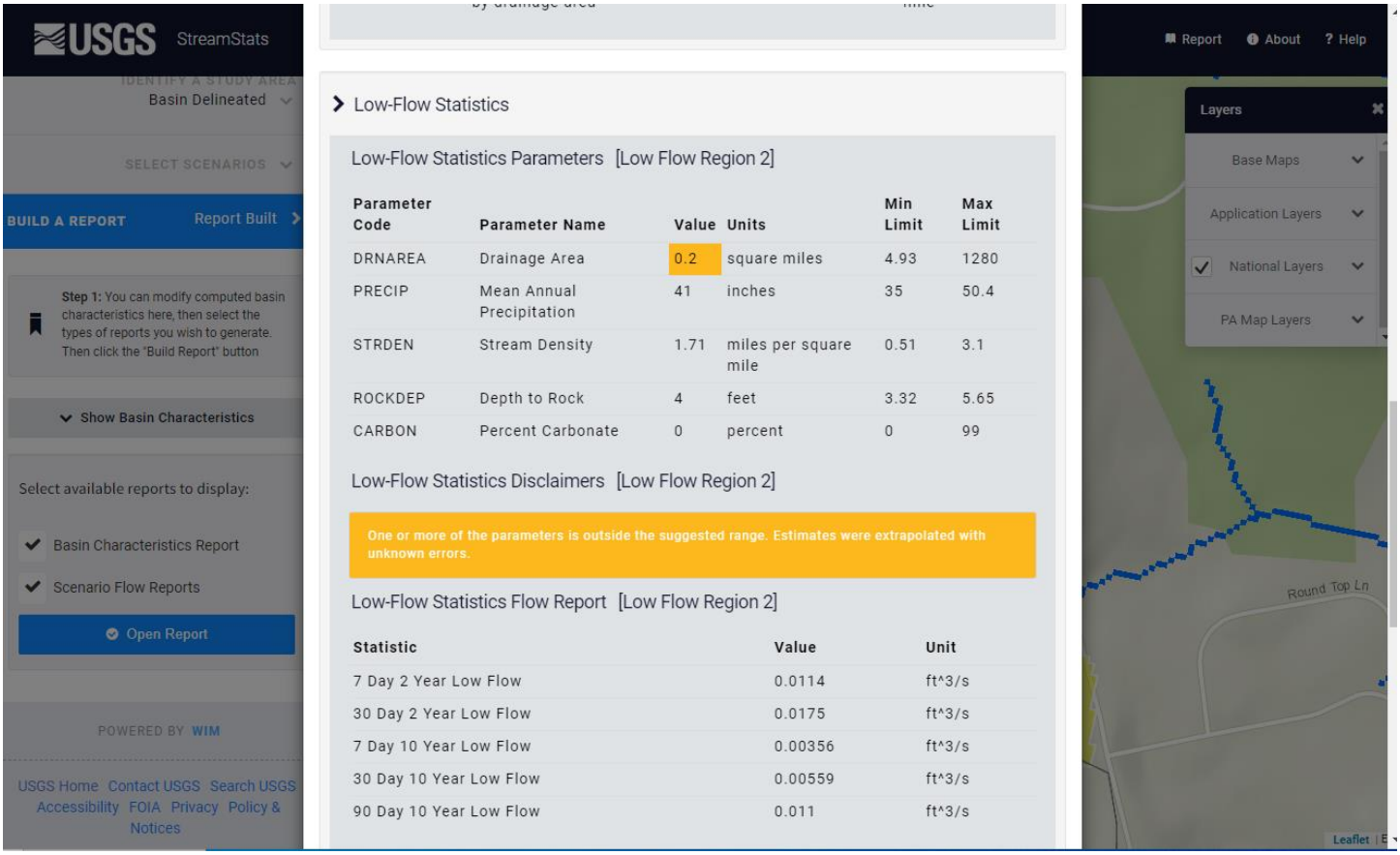
The following data were used in the attached computer model (WQM 7.0) of the stream:

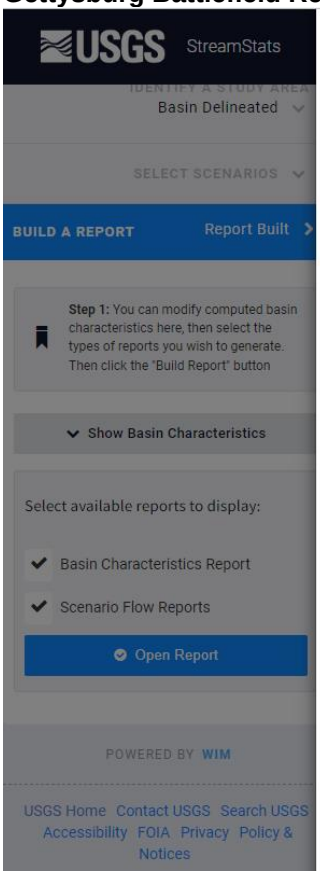
- Discharge pH 7.0 (Default per 391-2000-007)
- Discharge Temperature 20°C (Default per 391-2000-013)
- Stream pH 7.0 (Default per 391-2000-006)
- Stream Temperature 25°C (Default per 391-2000-003)

The following two nodes were used in modeling:

Node 1: Outfall 001 at UNT to Plum Run (59058)
Elevation: 504.66 ft (USGS)
Drainage Area: 0.2 mi.^{2} (USGS StreamStats)
River Mile Index: 2.36 (On Plum Run)
Low Flow Yield: 0.04 cfs/mi.^{2}
Discharge Flow: 0.03 MGD

Node 2: At the confluence with Plum Run
Elevation: 443.05 ft (USGS)
Drainage Area: 0.38 mi.^{2} (USGS StreamStats)
River Mile Index: 1.83 (On Plum Run)
Low Flow Yield: 0.04 cfs/mi.^{2}
Discharge Flow: 0.00 MGD





STRDEN	Stream Density -- total length of streams divided by drainage area	2.44	miles per square mile	

Low-Flow Statistics

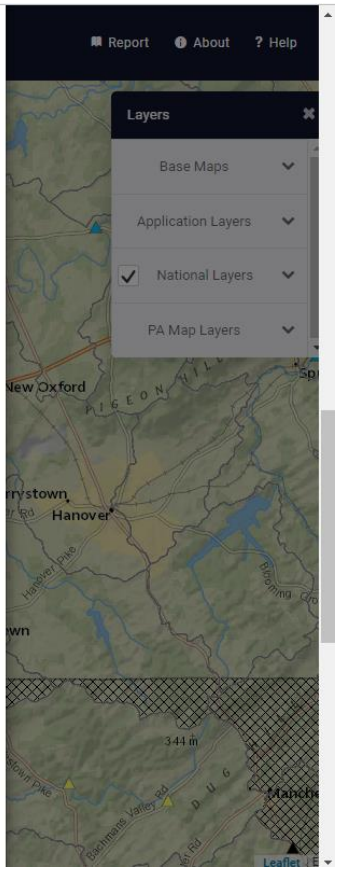
Low-Flow Statistics Parameters [100.0 Percent (63.5 square miles) Low Flow Region 2]

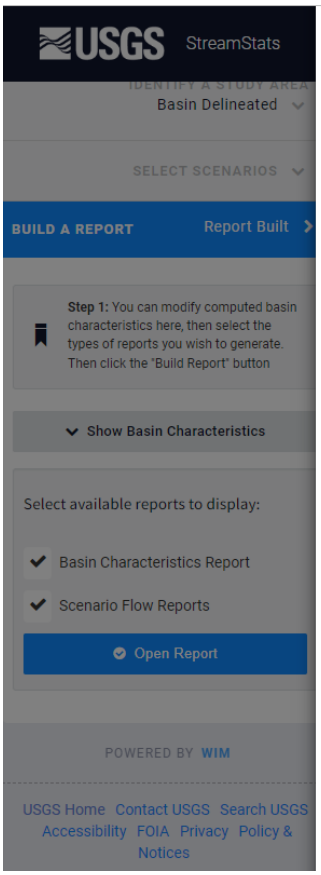
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	63.5	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.44	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.4	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (63.5 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (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





	by drainage area			mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

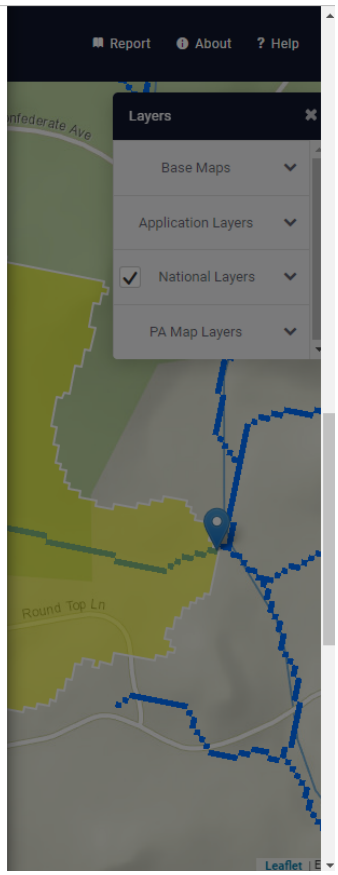
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.38	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.23	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

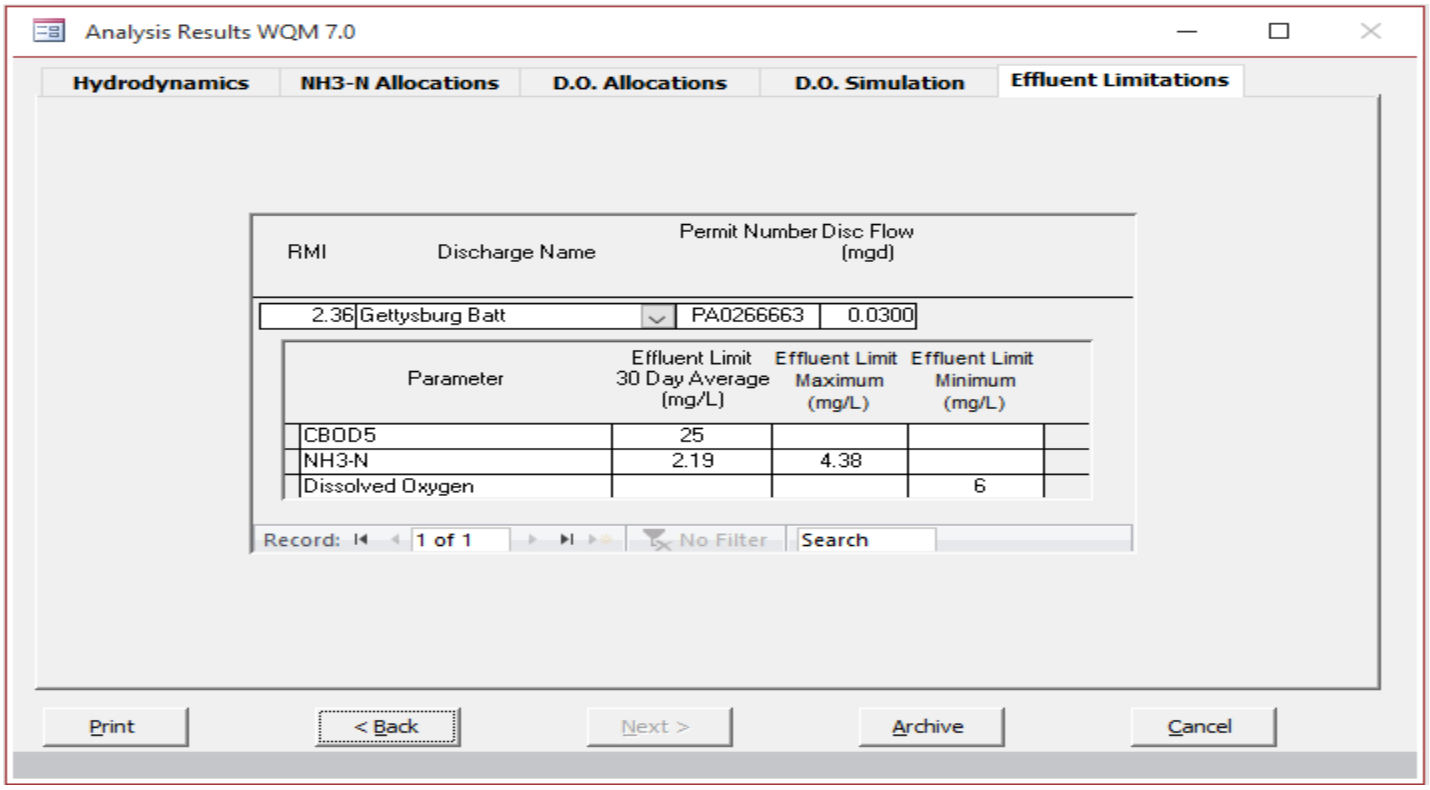
Low-Flow Statistics Disclaimers [Low Flow Region 2]

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	0.0181	ft^3/s
30 Day 2 Year Low Flow	0.028	ft^3/s
7 Day 10 Year Low Flow	0.00574	ft^3/s
30 Day 10 Year Low Flow	0.00902	ft^3/s
90 Day 10 Year Low Flow	0.0174	ft^3/s




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)
2.36
Gettysburg Batt
PA0266663
0.0300
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
2.19
4.38
Dissolved Oxygen
6
Record: 1 of 1
No Filter
Search
Print
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Next >
Archive
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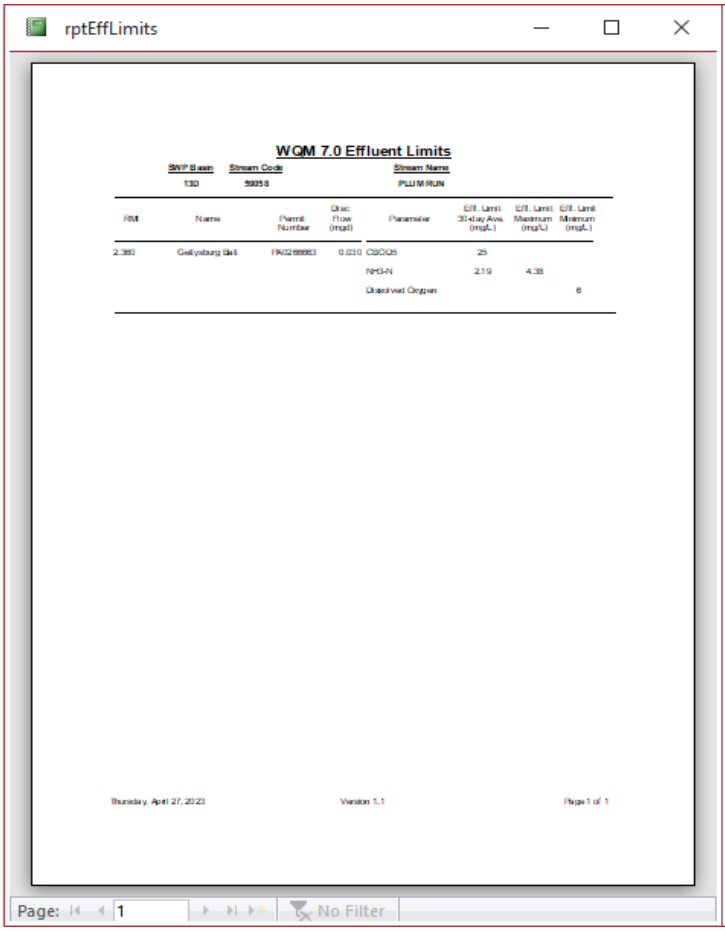
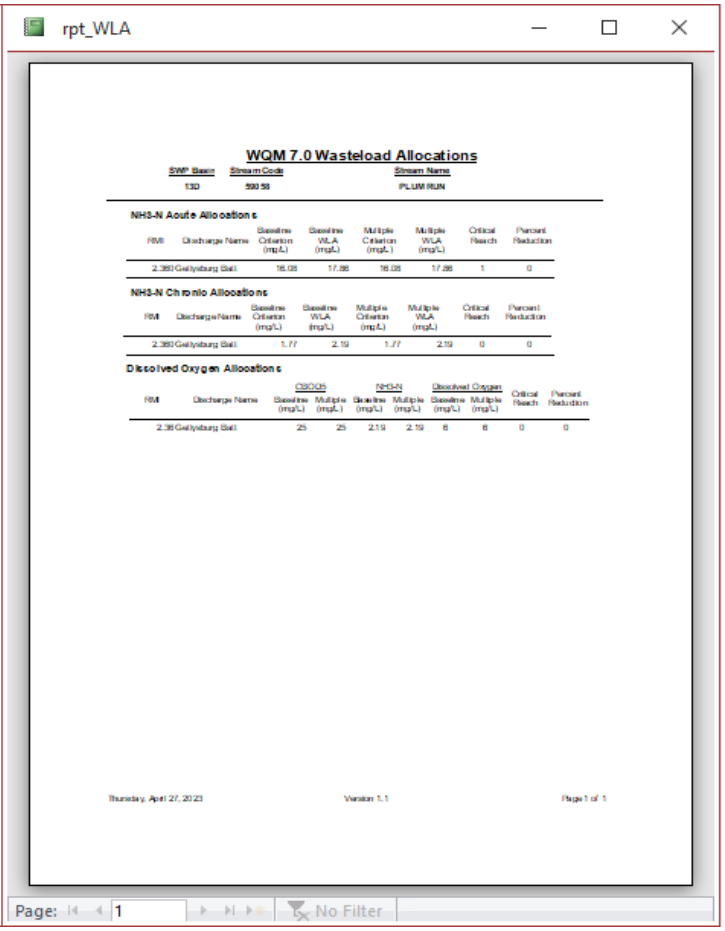

rptEffLimits
WQM 7.0 Effluent Limits
SWP Basin
Stream Code
Stream Name
13D
59058
PLUM RUN
RMI
Name
Permit Number
Disc Flow (mgd)
Parameter
Eff. Limit 30-day Ave. (mg/L)
Eff. Limit Maximum (mg/L)
Eff. Limit Minimum (mg/L)
2.360
Gettysburg Batt
PA0266663
0.030
CBOD5
25
NH3-N
2.19
4.38
Dissolved Oxygen
6
Thursday, April 27, 2023
Version 1.1
Page 1 of 1
Page: 1
No Filter


rpt_WLA
WQM 7.0 Wasteload Allocations
SWP Basin
Stream Code
Stream Name
13D
59058
PLUM 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
2.360
Gettysburg Batt
16.08
17.86
16.08
17.86
1
0
NH3-N Chronic Allocations
2.360
Gettysburg Batt
1.77
2.19
1.77
2.19
0
0
Dissolved Oxygen Allocations
CBOD5
NH3-N
Dissolved Oxygen
2.36
Gettysburg Batt
25
25
2.19
2.19
6
6
0
0
Thursday, April 27, 2023
Version 1.1
Page 1 of 1
Page: 1
No Filter

rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
13D	59058	PLUM RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.360	0.030	20.735	7.000

Reach Width (ft)	Reach Depth (ft)	Reach WQ Beta	Reach Velocity (fps)
2.460	0.329	7.598	0.088

Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
2.182	1.470	1.267	0.741

Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
6.330	27.357	Owens	6

Reach Travel Time (days)
0.488

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.049	20.07	1.80	6.92
0.098	18.83	1.74	7.17
0.147	17.30	1.68	7.32
0.195	16.06	1.62	7.45
0.244	14.91	1.56	7.55
0.293	13.85	1.50	7.65
0.342	12.86	1.45	7.75
0.391	11.94	1.40	7.83
0.440	11.08	1.35	7.91
0.488	10.29	1.30	7.99

Thursday, April 27, 2023 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted WD 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		

Thursday, April 27, 2023 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
13D	59058	PLUM RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.360	0.01	0.00	0.01	.0484	0.02202	.329	2.49	7.56	0.07	0.488	20.74	7.00
Q1-10 Flow												
2.360	0.01	0.00	0.01	.0484	0.02202	NA	NA	NA	0.08	0.504	20.50	7.00
Q30-10 Flow												
2.360	0.01	0.00	0.01	.0484	0.02202	NA	NA	NA	0.07	0.475	20.95	7.00

Thursday, April 27, 2023 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sqmi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13D	59058	PLUM RUN	2.360	504.66	0.20	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	0.040	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

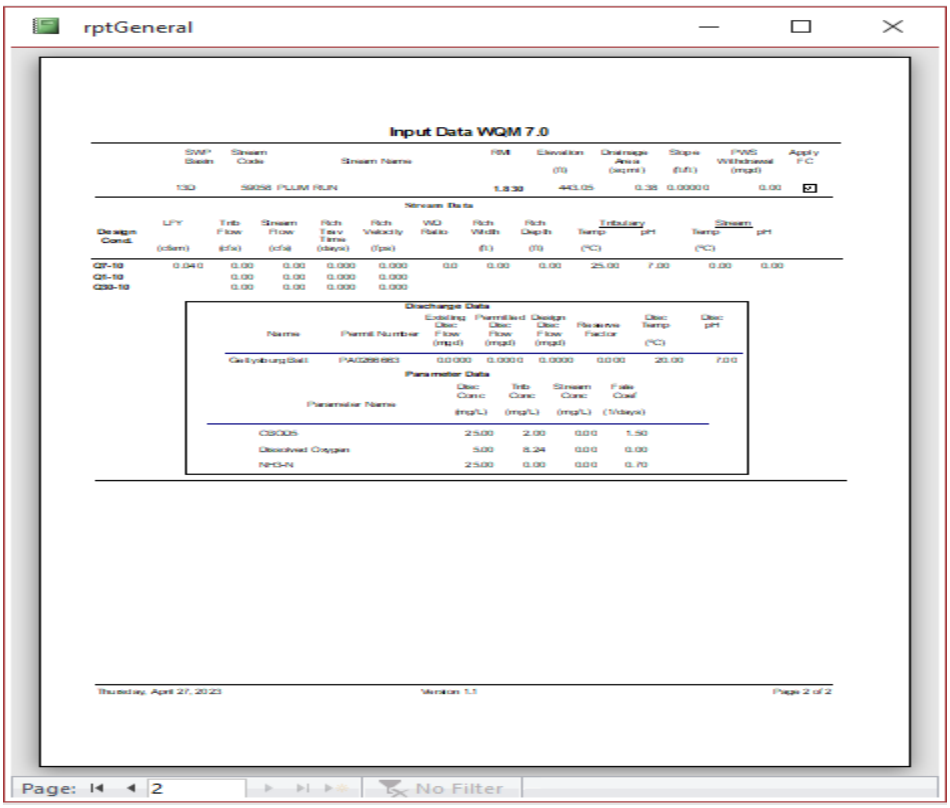
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
GettysburgBatt	PA0266663	0.0300	0.0300	0.0300	0.000	20.00	7.00

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

Thursday, April 27, 2023 Version 1.1 Page 1 of 2

Page: 1 No Filter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Input Data WQM 7.0
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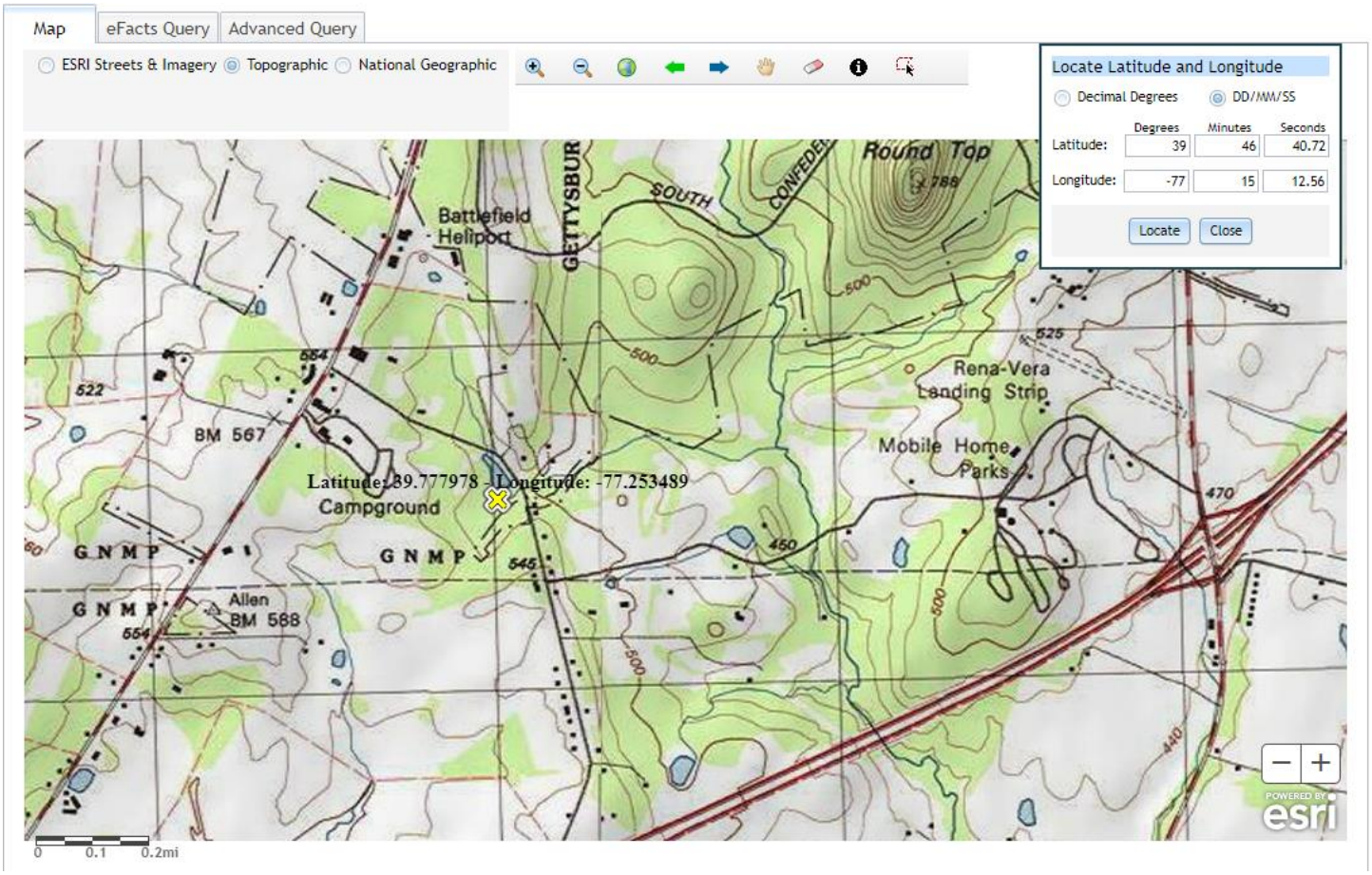
Map
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Campground
GNMP
Allen
BM 588
0
0.1
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Existing Effluent Limitations and Monitoring Requirements

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	6.0	XXX	XXX	XXX	1/day	Grab
UV Dosage (mjoules/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
CBOD5	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	6.5	XXX	13.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	0.5	XXX	1.0	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	5.0	XXX	XXX	1/month	Calculation

Existing Effluent Limitations and Monitoring Requirements

Chesapeake Bay Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Net Total Nitrogen	Report	0.0	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	0.0	XXX	XXX	XXX	XXX	1/month	Calculation

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" (362-0400-001), 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	6.0	XXX	XXX	XXX	1/day	Grab
UV Dosage (mjoules/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
CBOD5	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	0.5	XXX	1.0	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	5.0	XXX	XXX	1/month	Calculation

Compliance Sampling Location:

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), 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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Net Total Nitrogen	Report	0.0	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	0.0	XXX	XXX	XXX	XXX	1/month	Calculation

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, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☒	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: SOP No. BPNPSM-PMT-033
☐	Other: