Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088056**
Facility Type	**Industrial**	APS ID	**38002**
Major / Minor	**Minor**	Authorization ID	**1511060**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Gettysburg Borough Municipal Authority Adams County**	Facility Name	**Gettysburg Municipal Authority Water System**
Applicant Address	424 E Middle Street, PO Box 3307	Facility Address	Private Road Off Black Horse Tavern Road
	Gettysburg, PA 17325-1926		Cumberland Twp, PA 17325
Applicant Contact	Mark Guise	Facility Contact	Mark Guise
Applicant Phone	(717) 334-6738	Facility Phone	(717) 334-6738
Client ID	78262	Site ID	239068
SIC Code	4941	Municipality	Cumberland Township
SIC Description	Trans. & Utilities - Water Supply	County	Adams
Date Application Received	December 30, 2024	EPA Waived?	Yes
Date Application Accepted	January 2, 2025	If No, Reason	
Purpose of Application	NPDES permit Renewal.		

Summary of Review

Buchart Horn, Inc., on behalf of the Gettysburg Municipal Authority Stream Well #2 (IW) (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on May 13, 2020, and became effective on June 1, 2020. The permit expires on May 31, 2025.

This is the fourth renewal of this permit. During the initial permitting, it was decided that an NPDES permit was necessary for this discharge. A Water Supply permit was not needed because the water from the well would not be used for direct consumption. However, Water Supply Management agreed to review the hydrogeologic data associated with the development of the well and associated local impacts from the well.

This environmental protection report has been developed for the existing discharge of untreated well water to UNT Marsh Creek in Cumberland Township, Adams County. The purpose of the discharge is to pump well water into Marsh Creek during periods of drought to supplement stream flows at the Gettysburg Municipal Authority intake located approximately 3.4 miles downstream.

A prior review of the permittee's Hydrogeologic Report determined that the well could be pumped at 900 gpm (1.3 MGD) for up to 90 days per year. A condition in the permit restricts the use of the well to 117 MG per year.

Changes from the previous permit: N/A

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and publish in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	March 17, 2025
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	March 28, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	1.3
Latitude	39º 49' 28.81"	Longitude	-77º 17' 15.95"
Quad Name	Fairfield	Quad Code	
Wastewater Description:	Groundwater / Spring Discharge		
Receiving Waters	UNT to Marsh Creek (CWF)	Stream Code	58956
NHD Com ID	53320236	RMI	0.09 mile
Drainage Area	0.34 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)		Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Gettysburg Municipal Authority, Adams County		
PWS Waters	Marsh Creek	Flow at Intake (cfs)	
PWS RMI	8.14 miles	Distance from Outfall (mi)	Approximate 3.4 miles

Changes Since Last Permit Issuance:

Secondary Waters: Marsh Creek (Stream Code 58903) at RMI 11.44 miles. Drainage Area: 49.4 mi.^{2}; Q_{7-10} Flow: 2.66 cfs; Chapter 93 Class.: CWF

Other Comments: No treatment facility exists for this discharge of well water.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the next page.
Summary of Inspections:	12/21/2022: Mr. Hoy, DEP Environmental Trainee, conducted compliance evaluation inspection. There were no violations noted during inspection. There was no discharge observed from Stream Well # 2 during the inspection. The UNT appeared to be clear upstream and downstream of outfall 001. Operators control the rate of discharge to Outfall 001 using a valve on the well pump discharge line to prevent scouring at the Outfall.
Other Comments:	There are no open violations associated with this facility or permittee.

Other Comments: The past year of DMR data does not indicate any limit exceedances. A review of recent daily temperature data indicates satisfactory compliance with permit requirements for temperature changes in Marsh Creek.

Compliance History

DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly			0.488064	0.329908	0.464502	0.395996	0.591133	0.912767				
Flow (MGD) Daily Maximum			0.639336	0.675979	0.689163	0.681044	0.615656	1.02686				
pH (S.U.) Daily Minimum			7.49	7.44	7.45	7.31	7.53	7.38				
pH (S.U.) Instantaneous Maximum			7.5	7.61	7.62	7.55	7.55	7.58				
Temperature (ºF) Daily Minimum			58	59.2	57.7	61	61.1	56.4				
Temperature (ºF) Downstream Monitoring Daily Minimum			40.5	45.9	56.3	60.26	65.2	67.8				
Temperature (ºF) Upstream Monitoring Daily Minimum			40.1	44.9	52	60.73	66.2	69.2				
Temperature (ºF) Average Monthly			58.4	59.8	58	63	62.8	59.2				
Temperature (ºF) Downstream Monitoring Average Monthly			50	53	66.1	72.58	75.7	76.4				
Temperature (ºF) Upstream Monitoring Average Monthly			49.5	52.5	66.9	73.85	78.1	78.2				
Temperature (ºF) Daily Maximum			58.8	60.4	58.2	65	64.4	62				
Temperature (ºF) Downstream Monitoring Daily Maximum			63.4	60.8	76.7	83.24	87	86				
Temperature (ºF) Upstream Monitoring Daily Maximum			64.5	60.5	76.6	89.91	91.7	89				
Total Dissolved Solids (mg/L) Average Monthly			638	669	642	606	655	472				

Total Dissolved Solids (mg/L) Daily Maximum			664	838	686	3216	678	532				
Total Iron (mg/L) Average Monthly			0.3	0.43	0.28	2.15	0.3	0.24				
Total Iron (mg/L) Daily Maximum			0.33	0.55	0.28	4.05	0.35	0.28				
Total Manganese (mg/L) Average Monthly			0.08	0.066	0.074	0.089	0.071	0.067				
Total Manganese (mg/L) Daily Maximum			0.08	0.067	0.075	0.111	0.076	0.076				
Sulfate (mg/L) Average Monthly			375	270	335	275	295	165				
Sulfate (mg/L) Daily Maximum			380	330	340	320	310	230				
Total Volume (MGD) Total Annual		76.351723										

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Total Annual	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	1.3 Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
Total Volume (MG)	XXX	117	XXX	XXX	XXX	XXX	1/year	Calculation
Temperature (ºF) Upstream Monitoring	XXX	XXX	Report	Report	Report	XXX	1/hour	I-S
Temperature (ºF) Downstream Monitoring	XXX	XXX	Report	Report	Report	XXX	1/hour	I-S
Temperature (ºF)	XXX	XXX	Report	Report	Report	XXX	2/month	I-S
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/month	Grab
Total Dissolved Solids	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Total Iron	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Total Manganese	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Total Sulfate	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.3
Latitude 39º 49' 28.81" **Longitude** -77º 17' 15.95"
Wastewater Description: Groundwater / Spring Discharge

Technology-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)

Comments:

Water Quality-Based Limitations

Stream Flow:
According to the previous protection report, the receiving stream is dry, except for during rain events. Therefore, the streamflow was calculated at the point of confluence with Marsh Creek. According to USGS StreamStats, the point of first use at the confluence with Marsh Creek (Stream Code 58903) has a Q_{7-10} of 2.66 cfs and a drainage area of 49.4 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.054 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):

Q_{7-10} = 2.66 cfs
Low Flow Yield = 2.66 cfs / 49.4 mi^2 = 0.054 cfs/mi^2
Q_{30-10} = 1.36 * 2.66 cfs = 3.62 cfs
Q_{1-10} = 0.64 * 2.66 cfs = 1.70 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 2.66 cfs / [1.3 MGD * (1.55 cfs/MGD)] = 1.3:1

Public Water Supply:
The nearest downstream public water supply intake is for the Gettysburg Municipal Authority in Adams County, approximately 3.4 miles downstream of this discharge.

This distance was determined as follows:

	RMI of UNT Marsh Creek at Outfall 001	0.09 mi
+	RMI of Marsh Creek at confluence with UNT Marsh Creek	11.44 mi
-	RMI of Marsh Creek at Gettysburg Municipal Authority intake	8.14 mi
		3.39 mi

Considering distance and dilution, the discharge is not expected to impact the water supply.

Well Usage:
Total annual discharge, as stated on DMRs (Pages # 3 & 4): there were 76.35 million gallons in 2024.

Effluent Limitations Evaluation:
A thorough evaluation of potential parameters of concern was conducted during the initial permitting of this discharge. Because the discharge is clean, untreated well water, there are no toxic parameters of concern. Reporting requirements have been in place for Total Iron, Manganese, & Sulfate; and TDS. The permittee is also required to sample these parameters in the private wells as part of an ongoing private well monitoring program. All existing requirements will remain in the proposed 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).

Temperature:
There have been no changes since the last permit was issued. Utilization of the Department's thermal discharge spreadsheet indicates that no limits are needed. The results (displayed for both CWF and WWF cases) (Pages # 8-9) indicate limits that are well above any of the discharge temperatures that have been indicated on recent DMRs.

The permittee is required to sample Marsh Creek 100 yards upstream of the confluence with the unnamed tributary and 400 yards downstream of the confluence with the unnamed tributary. The existing permit included the special condition that the discharge shall not change the temperature of the receiving stream by more than 2°F during any one-hour period. Based on the above information, the existing temperature monitoring requirements will remain in the proposed permit.

Chesapeake Bay Strategy:

The Supplement to Phase II Watershed Implementation Plan states the following (Pages # 19): "*For non-significant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing. In general, facilities that discharge groundwater and cooling water with no addition of chemicals containing N or P do not require monitoring.*"

This is a non-significant industrial discharge facility that will not need a phosphorus or nitrogen loading cap. TN and TP "Monitor & Report" requirement will not be necessary since this facility discharges groundwater without any chemical additives containing nitrogen or phosphorus.

Other:

The below Part C requirements are included in the existing permit, and they will remain in the proposed permit.

- The maximum instantaneous rate of discharge from Stream Well No. 2 shall not exceed 900 gallons per minute at any time. The total volume of water pumped from Stream Well No. 2 during any calendar year shall not exceed 117 million gallons.
- The permittee shall provide to the Department within 24 hours of receipt, all information pertaining to water supply difficulties occurring at any residence or other property located in close proximity to Stream Well No. 2. The permittee shall provide at a minimum, the name of the property owner or resident, their telephone number, the address where the problem has occurred, a description of the problem encountered, and whether Stream Well No. 2 had been in use prior to the occurrence of the problem. This information shall be submitted to:
  Clean Water Program
  Department of Environmental Protection
  Southcentral Region
  909 Elmerton Avenue
  Harrisburg, PA 17110-8200
- The March 2006 plan to monitor private wells in the vicinity of Stream Well No. 2 shall be implemented when Stream Well No. 2 is in use.
- The permittee shall maintain and utilize data loggers on Stream Well No. 2 and at least one private residential well in the vicinity of Stream Well No. 2. The permittee shall provide written documentation of any problems with the private residential well. If the data loggers malfunction, the permittee shall revert to manually measuring and recording well water level data.
- The permittee shall provide an annual report to the Department on the anniversary date of permit issuance. The report shall analyze trends in data, discuss any problems encountered during use of Stream Well No. 2 and provide recommendations for future monitoring or changes to the monitoring plan.
- The Department retains the right to modify the terms and conditions of this permit if, in its determination, operation of Stream Well No. 2 has a significant detrimental impact on adjacent private water supplies and/or Marsh Creek, or causes adverse dewatering of the aquifer.

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

The 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.

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *Inputs* | CLEAR FORM | CALCULATE

Facility: Gettysburg MA (Stream Well # 2)
Permit No.: PA0088056
Stream Name: UNT to Marsh Creek
Analyst/Engineer:
Stream Q7-10 (cfs)*: 2.7
Outfall No.: 001
Analysis Type*: CWF

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31	0	1.3	0	1.3
Feb 1-29	0	1.3	0	1.3
Mar 1-31	0	1.3	0	1.3
Apr 1-15	0	1.3	0	1.3
Apr 16-30	0	1.3	0	1.3
May 1-15	0	1.3	0	1.3
May 16-31	0	1.3	0	1.3
Jun 1-15	0	1.3	0	1.3
Jun 16-30	0	1.3	0	1.3
Jul 1-31	0	1.3	0	1.3
Aug 1-15	0	1.3	0	1.3
Aug 16-31	0	1.3	0	1.3
Sep 1-15	0	1.3	0	1.3
Sep 16-30	0	1.3	0	1.3
Oct 1-15	0	1.3	0	1.3
Oct 16-31	0	1.3	0	1.3
Nov 1-15	0	1.3	0	1.3
Nov 16-30	0	1.3	0	1.3
Dec 1-31	0	1.3	0	1.3

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	8.51	10.52
3.5	1.00	9.31	11.32
7	1.00	18.62	20.63
9.3	1.00	24.74	26.75
9.3	1.00	24.74	26.75
5.1	1.00	13.57	15.58
5.1	1.00	13.57	15.58
3	1.00	7.98	9.99
3	1.00	7.98	9.99
1.7	1.00	4.52	6.53
1.4	1.00	3.72	5.74
1.4	1.00	3.72	5.74
1.1	1.00	2.93	4.94
1.1	1.00	2.93	4.94
1.2	1.00	3.19	5.20
1.2	1.00	3.19	5.20
1.6	1.00	4.26	6.27
1.6	1.00	4.26	6.27
2.4	1.00	6.38	8.40

Temperature

Ambient Stream Temperature (°F)*
0
0
0
0
0
0
0
0
0
0
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0
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0
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0
0
0

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Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *CWF Results* | RETURN TO INPUTS | PRINT TO PDF | PRINT CWF

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**CWF** Target Maximum Stream Temp. (°F)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (°F)
Jan 1-31	38	N/A -- Case 2	54.9
Feb 1-29	38	N/A -- Case 2	51.9
Mar 1-31	42	N/A -- Case 2	69.8
Apr 1-15	48	N/A -- Case 2	72.6
Apr 16-30	53	N/A -- Case 2	65.3
May 1-15	56	N/A -- Case 2	62.7
May 16-31	60	N/A -- Case 2	66.7
Jun 1-15	64	N/A -- Case 2	68.0
Jun 16-30	68	N/A -- Case 2	72.0
Jul 1-31	72	N/A -- Case 2	74.2
Aug 1-15	71	N/A -- Case 2	72.9
Aug 16-31	71	N/A -- Case 2	72.9
Sep 1-15	67	N/A -- Case 2	68.5
Sep 16-30	61	N/A -- Case 2	62.5
Oct 1-15	56	N/A -- Case 2	57.6
Oct 16-31	52	N/A -- Case 2	53.6
Nov 1-15	47	N/A -- Case 2	49.1
Nov 16-30	42	N/A -- Case 2	46.2
Dec 1-31	40	N/A -- Case 2	55.9

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Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *WWF Results* | RETURN TO INPUTS | PRINT TO PDF | PRINT WWF

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**WWF** Target Maximum Stream Temp. (°F)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (°F)
Jan 1-31	40	N/A -- Case 2	61.2
Feb 1-29	40	N/A -- Case 2	63.1
Mar 1-31	46	N/A -- Case 2	101.6
Apr 1-15	52	N/A -- Case 2	110.0
Apr 16-30	58	N/A -- Case 2	110.0
May 1-15	64	N/A -- Case 2	104.5
May 16-31	72	N/A -- Case 2	110.0
Jun 1-15	80	N/A -- Case 2	110.0
Jun 16-30	84	N/A -- Case 2	110.0
Jul 1-31	87	N/A -- Case 2	110.0
Aug 1-15	87	N/A -- Case 2	110.0
Aug 16-31	87	N/A -- Case 2	110.0
Sep 1-15	84	N/A -- Case 2	102.9
Sep 16-30	78	N/A -- Case 2	96.9
Oct 1-15	72	N/A -- Case 2	91.0
Oct 16-31	66	N/A -- Case 2	85.0
Nov 1-15	58	N/A -- Case 2	79.2
Nov 16-30	50	N/A -- Case 2	66.9
Dec 1-31	42	N/A -- Case 2	57.9

Proposed Effluent Limitations and Monitoring Requirements

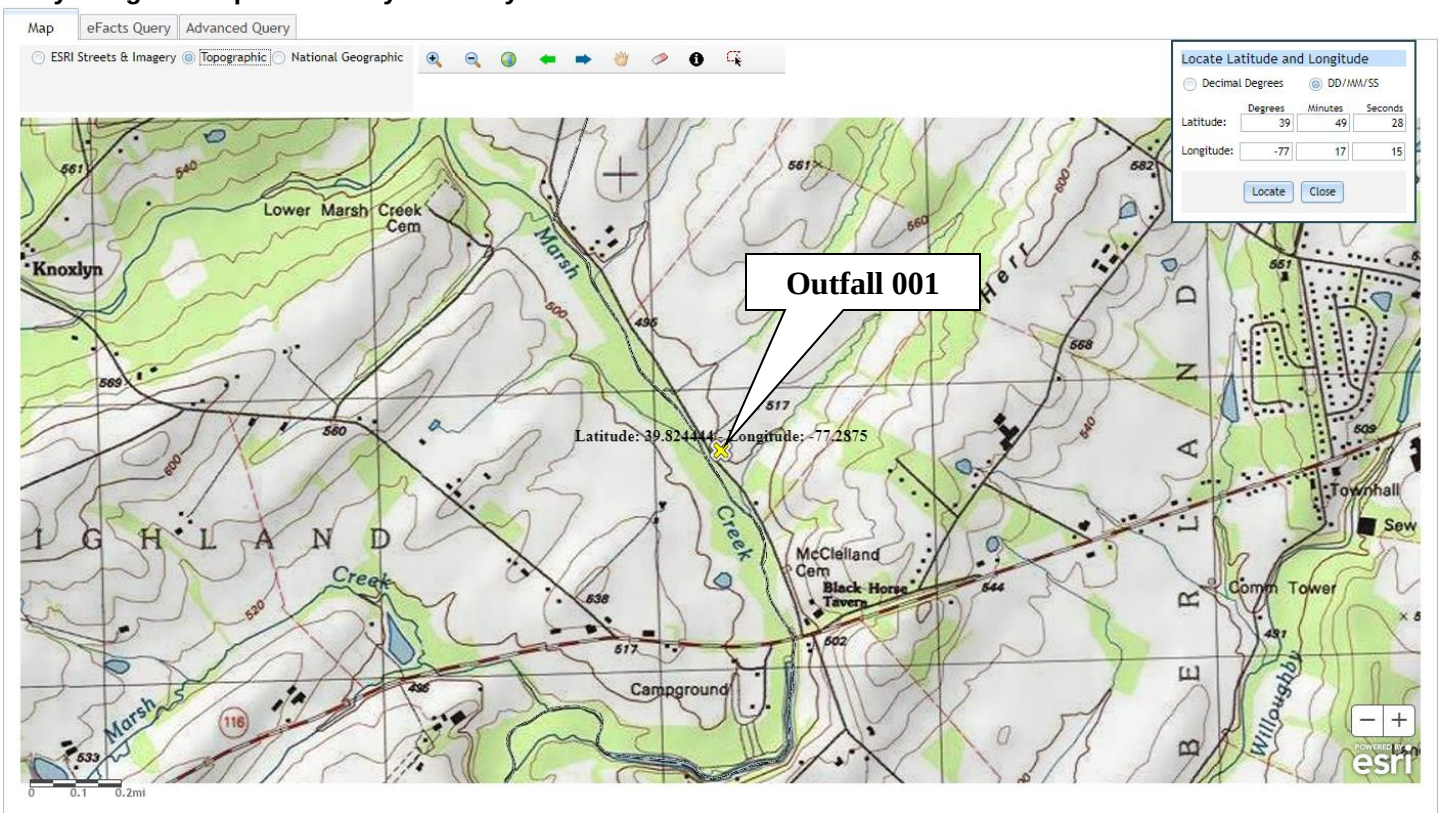
The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). 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	Total Annual	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	1.3 Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	2/month	Grab
Temperature (ºF)	XXX	XXX	Report Daily Min	Report	Report	XXX	2/month	I-S
Temperature (ºF) Downstream Monitoring	XXX	XXX	Report Daily Min	Report	Report	XXX	1/hour	I-S
Temperature (ºF) Upstream Monitoring	XXX	XXX	Report Daily Min	Report	Report	XXX	1/hour	I-S
Total Dissolved Solids	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Total Iron	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Total Manganese	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Sulfate	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Total Volume (MGD)	XXX	117	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location:

Other Comments: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Locate
Close
Outfall 001
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Knoxlyn
Marsh Creek
McClelland Cem
Black Horse Tavern
Campground
Townhall
Comm Tower
Willoughby
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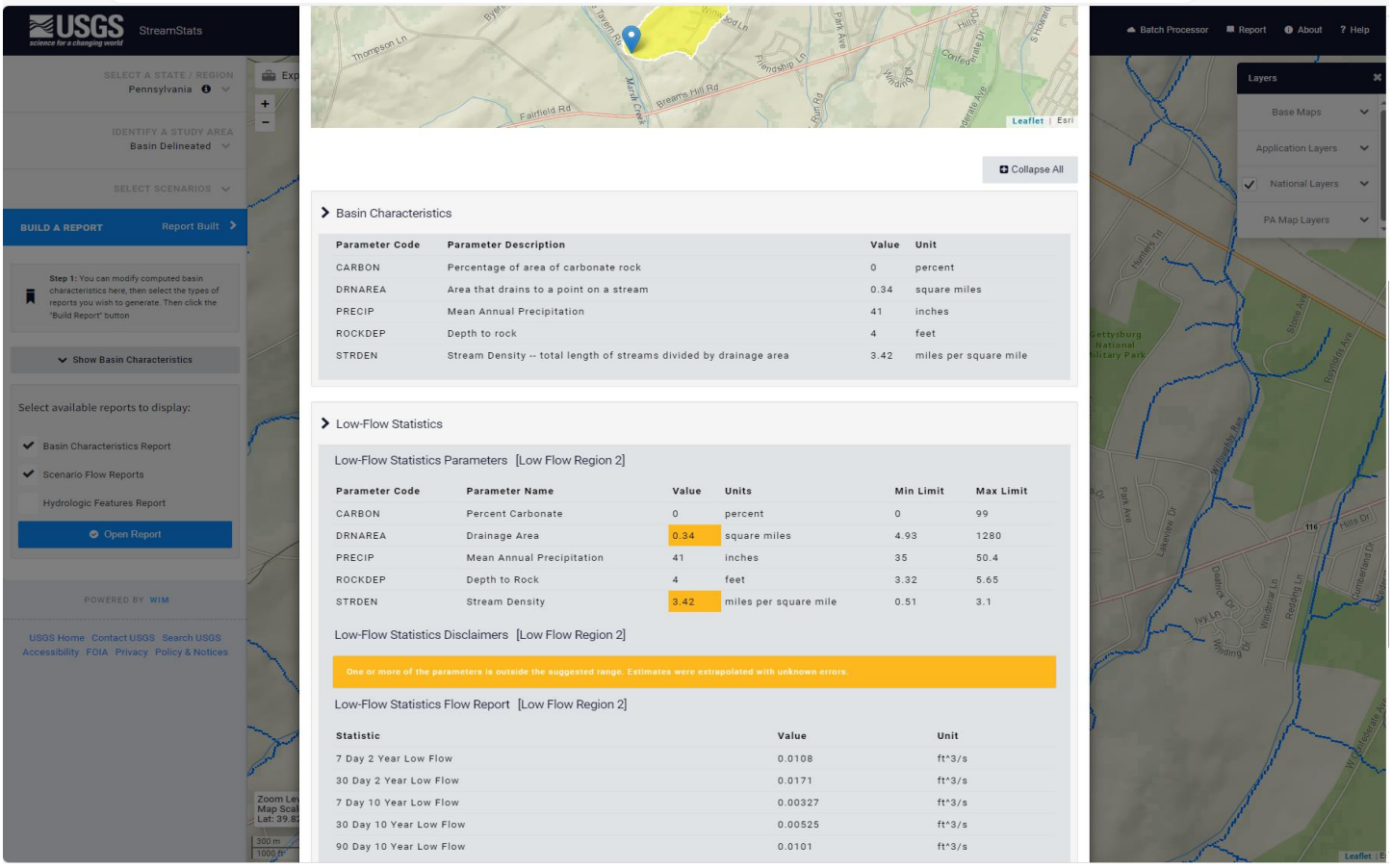
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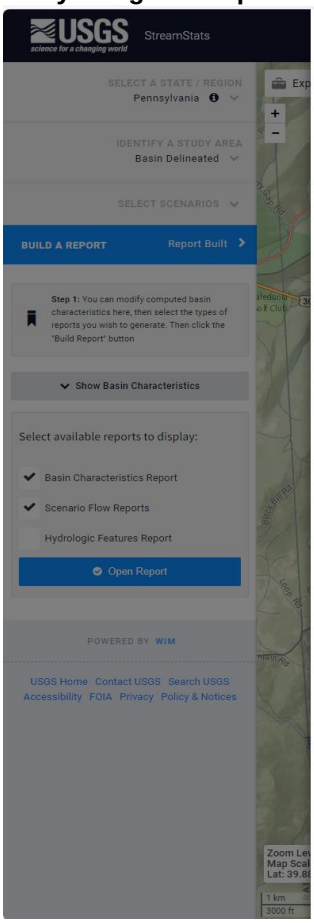
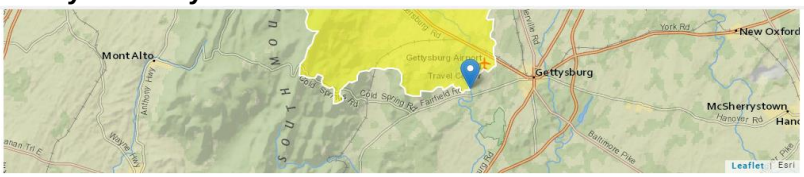
Pennsylvania
Basin Delineated
BUILD A REPORT
Report Built
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 0.34 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 3.42 | 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
CARBON | Percent Carbonate | 0 | percent | 0 | 99
DRNAREA | Drainage Area | 0.34 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4 | feet | 3.32 | 5.65
STRDEN | Stream Density | 3.42 | miles per square mile | 0.51 | 3.1
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 | 0.0108 | ft^3/s
30 Day 2 Year Low Flow | 0.0171 | ft^3/s
7 Day 10 Year Low Flow | 0.00327 | ft^3/s
30 Day 10 Year Low Flow | 0.00525 | ft^3/s
90 Day 10 Year Low Flow | 0.0101 | ft^3/s
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers





Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0.18	percent
DRNAREA	Area that drains to a point on a stream	49.4	square miles
PRECIP	Mean Annual Precipitation	42	inches
ROCKDEP	Depth to rock	4.7	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.51	miles per square mile

Low-Flow Statistics

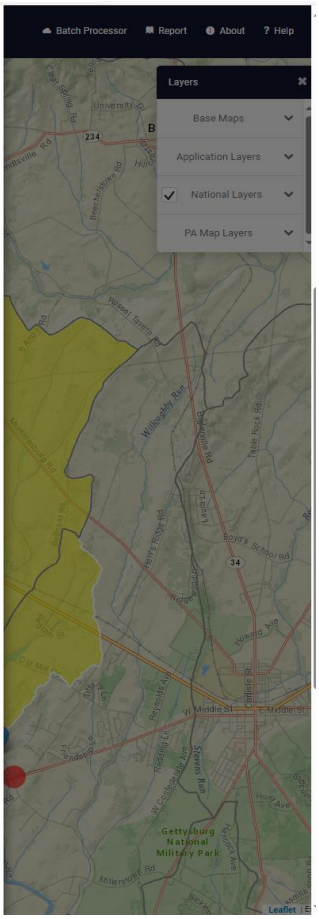
Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	0.18	percent	0	99
DRNAREA	Drainage Area	49.4	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	42	inches	35	50.4
ROCKDEP	Depth to Rock	4.7	feet	3.32	5.65
STRDEN	Stream Density	2.51	miles per square mile	0.51	3.1

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, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.15	ft^3/s	38	38
30 Day 2 Year Low Flow	6.83	ft^3/s	33	33
7 Day 10 Year Low Flow	2.66	ft^3/s	51	51
30 Day 10 Year Low Flow	3.46	ft^3/s	46	46
90 Day 10 Year Low Flow	5.08	ft^3/s	36	36



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:
☐	Other: