Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0039489**
Facility Type	**Municipal**	APS ID	**1102479**
Major / Minor	**Minor**	Authorization ID	**1464724**

Applicant and Facility Information

Applicant Name	**Garrett Borough**	Facility Name	**Garrett Borough STP**
Applicant Address	PO Box 218 307 Municipal Road	Facility Address	Berlin Street Sr 2037
	Garrett, PA 15542-0218		Garrett, PA 15542
Applicant Contact	Sally Bero	Facility Contact	Matt Hayman
Applicant Phone	(814) 634-8147	Facility Phone	814-634-8147
Client ID	61972	Site ID	245619
Ch 94 Load Status	Existing Hydraulic Overload	Municipality	Garrett Borough
Connection Status	Dept. Imposed Connection Prohibitions	County	Somerset
Date Application Received	December 11, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES permit hydraulic capacity rerate and renewal.

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES renewal application from The EADS Group, Inc. (consultant) on behalf of Garrett Borough (permittee) on December 11, 2023 for permittee's Garrett Borough STP (facility). The facility is in Garrett Borough, Somerset County and the treated effluent is discharged into Casselman River in state watershed 19-F. The current permit expired on June 30, 2024. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001. This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: E. Coli monitoring added.

Sludge use and disposal description and location(s): Sludge is hauled off by licensed hauler.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager	January 6, 2025
√		Mahbuba Iasmin Mahbuba Iasmin, Ph. D, P.E. / Environmental Engineer Manager	January 7, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.067
Latitude	39º 51' 51"	Longitude	-79º 3' 44"
Quad Name	Meyersdale	Quad Code	2013
Wastewater Description:	Sewage Effluent		
Receiving Waters	Casselman River (WWF)	Stream Code	38579
NHD Com ID	69920163	RMI	29.46
Drainage Area	254 mi^2	Yield (cfs/mi^2)	0.044
Q_{7-10} Flow (cfs)	11.3	Q_{7-10} Basis	StreamStats
Elevation (ft)	1901.20	Slope (ft/ft)	
Watershed No.	19-F	Chapter 93 Class.	WWF
Existing Use	**WWF**	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, METALS, METALS, PH, PH		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final, Final	Name	Casselman River ,Casselman River

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°C)	25	Default
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority on Saltlick		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI	62.7	Distance from Outfall (mi)	40.05

Changes Since Last Permit Issuance: The permittee requested for a hydraulic rerate of the treatment plant from existing flow of 0.067 MGD to 0.099 MGD. This request will require a Part II WQM permit amendment application. Once received, the WQM amendment application will be reviewed, and if approved, the hydraulic design capacity will be adjusted in the NPDES permit.

Streamflow:
There's no nearby StreamGage from this discharge point. The USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on December 18, 2024) was utilized to determine the drainage area at discharge point and at confluence with Piney Run (node 2). The drainage area at Outfall 001 was found to be 254 mi^2 and 257 mi^2 at node 2. The Q7-10 at discharge point was found to be 11.3 cfs. The resulting yield is 11.3 cfs/254 mi2 or 0.044 cfs/mi2. The default Q1-10:Q7-10 of 0.64 and default Q30-10:Q7-10 of 1.36 will be used for modeling, as appropriate.

PWS Intake:
The nearest downstream public water supply is Indian Creek Valley Water Authority in Saltlick Township, Fayette County, on Youghiogheny River at RMI 62.7. Its approximately 40.05 miles downstream of Outfall 001. Discharge from this facility is expected not to impact the PWS intake.

Wastewater Characteristics:
Default discharge pH of 7.0 S.U., temperature of 25°C and hardness of 100 mg/l will be used for modeling, as appropriate.

Background data:
There's no nearby WQN station to collect the stream data from. In absence of site specific data, a default pH of 7.0, temperature of 25°C, and hardness of 100 mg/l will be used for modeling, as appropriate.

Casselman River TMDL:
There's a TMDL for metals in the impaired segment of Casselman River. This TMDL, as any AMD TMDL, identified three primary metals associated with the AMD- Iron, Manganese, and Aluminum. Treated sewage discharge from a minor STP, like this facility, is expected to be less than water quality criteria and not contributing to the stream impairment. There's no WLA for this facility, therefore, monitoring for these pollutants wasn't required in previous permits.

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. The receiving streams are designated as Warm Water Fishes (WWF). No High-Quality stream or Exceptional Value water is impacted by this discharge; therefore, no Antidegradation Analysis is performed for the discharge.

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

Treatment Facility Summary

Treatment Facility Name: Garrett Borough STP

WQM Permit No.	Issuance Date
466S91	2/17/1967

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with NH3-N Reduction	Extended Air	Chlorine	0.067

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.067	115	Existing Hydraulic Overload	Aerated holding tank	Other WWTP

Changes Since Last Permit Issuance: None

Facility Information

Garrett Borough owns and operates a wastewater treatment plant named Garrett Borough STP (facility) located in Garrett Borough, Somerset County. It is a minor sewage treatment facility with a design flow of 0.067 MGD, hydraulic design capacity of 0.067 MGD, and organic design capacity of 115 lbs. BOD5/day.

Due to Ch. 94 Hydraulic Overload determination, the facility was under a Corrective Action Plan (CAP), approved on March 10, 2021. The permittee began implementing the CAP. The CAP included system mapping, I&I investigation, defect repair, smoke & dye testing, and STP re-rating. The permittee stated that they investigated and repaired sources of I&I to the maximum extent practicable and requested a hydraulic rerate of the facility from 0.067 MGD to 0.09 MGD. A review of the supplied monthly flow data for the years 2019-2023 indicated that the facility was hydraulically overloaded for the months Jan-May 2019, Dec-May 2020, and Nov-Jan 2021, at current approved flow of 0.069 MGD. To compare with proposed 0.09 MGD flow, the facility would still be overloaded status for the months Nov 2018-Feb 2019 and Dec 2019-Feb 2020. The Consultant later requested to hydraulically rerate the facility to 0.099 MGD. This hydraulic rerate will require a Part II WQM permit amendment. Based on the findings of the WQM amendment application review, if the request is justified, the facility can be rerated to higher flow of 0.099 MGD. The draft NPDES permit will have the existing flow since hydraulic rerate request should be approved via a WQM amendment.

Based on the December 5, 2019 inspection report, the facility consists of two grinder pumps, one EQ tank, one comminutor, one bar screen, two aeration tanks, two foam spray, two sludge holding tanks, two clarifiers, one chlorinator, and three blowers (with one as back-up).

Inspection Reports:

12/09/2024: RTPT conducted. Collected sample showed high TSS. The inspector suspected that the facility has cloudy discharge during every heavy rainfall which is as a result of high TSS. Regular samples might not were being collected during those days.

12/5/2019: CEI conducted. Facility was determined to be hydraulically overloaded per 2018 Ch. 94 report.

Existing Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/weekday	Grab
Dissolved Oxygen	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/weekday	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/weekday	Grab
CBOD5	14.0	XXX	XXX	25.0	XXX	50.0	2/month	Grab
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
TSS	16.75	XXX	XXX	30.0	XXX	60.0	2/month	Grab
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Compliance History

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

Parameter	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23
Flow (MGD) Average Monthly	0.0301	0.0269	0.0289	0.0246	0.0291	0.0413	0.0821	0.0711	0.0674	0.0921	0.0669	0.0582
Flow (MGD) Daily Maximum	0.0812	0.0419	0.1191	0.0307	0.0325	0.0675	0.1774	0.1529	0.1126	0.1715	0.1046	0.176
pH (S.U.) IMIN	7.2	7.3	7.2	7.2	7.2	7.3	7.2	7.2	7.2	7.1	7.2	7.2
pH (S.U.) IMAX	7.4	7.4	7.4	7.3	7.4	7.4	7.4	7.3	7.3	7.6	7.4	7.3
DO (mg/L) Instantaneous Minimum	7.6	7.6	6.8	6.7	7.0	7.3	7.0	7.9	7.7	8.3	8.2	8.0
TRC (mg/L) Average Monthly	0.4	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3
TRC (mg/L) IMAX	0.4	0.5	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4
CBOD5 (lbs/day) Average Monthly	0.33	0.29	0.28	0.21	0.04	0.61	1.2	1.66	4.5	4.16	1.24	1.0
CBOD5 (mg/L) Average Monthly	< 2.0	< 1.5	< 1.5	< 1.5	< 1.6	< 1.5	< 2.3	< 2.3	8.5	3.8	2.0	2.3
CBOD5 (mg/L) IMAX	< 2.0	< 1.5	< 1.5	< 1.5	< 1.7	< 1.5	3.0	3.0	14.0	6.0	2.0	3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	32.35	54.40	62.57	10.15	2.72	10.87	226.3	33.90	37.34	110.8	27.14	43.34
BOD5 (mg/L) Raw Sewage Influent Average Monthly	151	94.50	169.5	65.2	115	26.0	506.5	57.25	71.0	101	45.0	94.0
TSS (lbs/day) Average Monthly	0.43	0.61	0.65	1.00	0.19	2.77	4.93	5.37	10.49	4.95	31.54	2.37
TSS (lbs/day) Raw Sewage Influent Average Monthly	15.38	20.73	18.03	16.57	2.24	22.91	23.63	40.40	27.05	102.7	66.10	32.58
TSS (mg/L) Average Monthly	< 0.10	< 3.0	< 4.0	7.0	8.0	7.0	3.0	6.5	9.0	4.5	44.5	5.5
TSS (mg/L) Raw Sewage Influent Average Monthly	72.00	98.0	97.50	124.5	94	58	43.50	59.0	50.5	93.5	104	68.0
TSS (mg/L) IMAX	< 0.10	4.0	5.0	8.0	8.0	8.0	3.5	11.0	11.0	6.56	78.0	9.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1.0	< 1.0	< 2.5	10.6	< 4.1	< 1.0	5.0	3.6	5.9	< 1.0	< 3.1
Fecal Coliform (No./100 ml) IMAX	< 1.0	< 1.0	< 1.0	6.3	21.8	16.7	< 1.0	24.6	4.1	34.9	1.0	9.8

Total Nitrogen (mg/L) Daily Maximum											< 22.5	
Ammonia (lbs/day) Average Monthly	0.02	0.04	0.06	1.73	0.002	1.86	2.19	0.37	0.08	0.51	0.45	0.06
Ammonia (mg/L) Average Monthly	< 0.10	< 0.22	0.3	9.8	< 0.10	3.96	4.93	< 0.84	0.14	0.47	0.63	< 0.11
Ammonia (mg/L) IMAX	< 0.10	0.33	0.38	19.5	< 0.10	7.82	4.03	1.58	0.16	0.60	1.15	0.11
Total Phosphorus (mg/L) Daily Maximum											3.12	

Compliance History

Effluent Violations for Outfall 001, from: December 1, 2023 To: October 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	12/31/23	Avg Mo	31.54	lbs/day	16.75	lbs/day
TSS	12/31/23	Avg Mo	44.5	mg/L	30.0	mg/L
TSS	12/31/23	IMAX	78.0	mg/L	60.0	mg/L

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .067
Latitude 39º 51' 51.00" **Longitude** -79º 3' 44.00"
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)

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

Model input data

The following data will be used for modeling, as needed:

- Discharge pH 7.0 (Default)
- Discharge Temperature 25°C (Default)
- Discharge Hardness 100 mg/l (Default)
- Stream pH 7.0 (Default)
- Stream Temperature 25.0°C (Default)
- Stream Hardness 100 mg/l (Default)

The following two nodes were used in modeling:

Node 1: At the outfall 001 on Casselman River (38579)
Elevation: 1901.20 ft (National Map-Advanced Viewer, 12/18/2024)
Drainage Area: 254 mi^2 (StreamStat Version 3.0, 12/18/2024)
River Mile Index: 29.46 (PA DEP eMapPA)
Low Flow Yield: 0.044 cfs/mi^2
Q_{7-10}: 11.3 cfs
Discharge Flow: 0.067 MGD

Node 2: At confluence with Piney Run (39064)
Elevation: 1883.99 ft (National Map-Advanced Viewer, 12/18/2024)
Drainage Area: 257 mi^2 (StreamStat Version 3.0, 12/18/2024)
River Mile Index: 28.72 (PA DEP eMapPA)
Low Flow Yield: 0.044 cfs/mi^2

Discharge Flow: 0.0 MGD

WQM 7.0 Model

WQM 7.0 version 1.11 is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and DO. The model simulates two basic processes. In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model was utilized for this permit renewal by using Q_{7-10} and current background water quality levels of the stream.

NH_3-N
WQM 7.0 suggested NH_3-N limit of 25 mg/l as monthly average and 50 mg/l as IMAX limit during summer to protect water quality standards. The current permit has monitoring requirements which will be carried over, per SOP, when WMS recommends AML of 25 mg/l for a renewal application.

CBOD5
WQM 7.0 suggests CBOD5 limit of 25.0 mg/l as AML during summer season which is the same as existing limit. Existing AML and IMAX will be carried over, along with the AML mass limits.

DO
WQM 7.0 suggests minimum DO of 4.0 mg/l which is the model input and same as existing limit. Existing limit will be carried over.

Toxics Management Spreadsheet (TMS)

Minor facilities with design flow less than 0.1 MGD aren't required to sample for Total Copper, Total Lead, Total Zinc, and any other parameters unless they are accepting flows from industrial or commercial users. No toxics modeling is conducted.

Other Requirements/BPJ based limits

Total Phosphorus:
PADEP's SOP BCW-PMT-033 recommends monitoring for Total Phosphorus for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Current monitoring requirement will be continued.

Total Nitrogen:
PADEP's SOP BCW-PMT-033 recommends monitoring for Total Nitrogen for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Current monitoring requirement will be continued.

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. These are existing requirements and will be carried over in this renewal.

E. Coli:
Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends quarterly E. Coli monitoring for minor sewage dischargers with a design flow between ≥0.05 MGD and 1.0 MGD. This requirement will be applied from this permit term.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly and 60 mg/L instantaneous maximum will remain 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). The mass based average monthly limit is calculated to be 16.75 lbs./day which is the same as were in existing permit and will be carried over.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that the existing limits are still protective and will be carried over.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Flow and Influent BOD_5 and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Anti-Backsliding
Anti-backsliding prohibition is justified in sections where an exception is justified for the affected pollutant(s). For remaining pollutants, this prohibition isn't applicable since the proposed limits are at least as stringent as were in current permit.

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	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/weekday	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/weekday	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/weekday	Grab
CBOD5	14.0	XXX	XXX	25.0	XXX	50.0	2/month	Grab
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
TSS	16.75	XXX	XXX	30.0	XXX	60.0	2/month	Grab
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

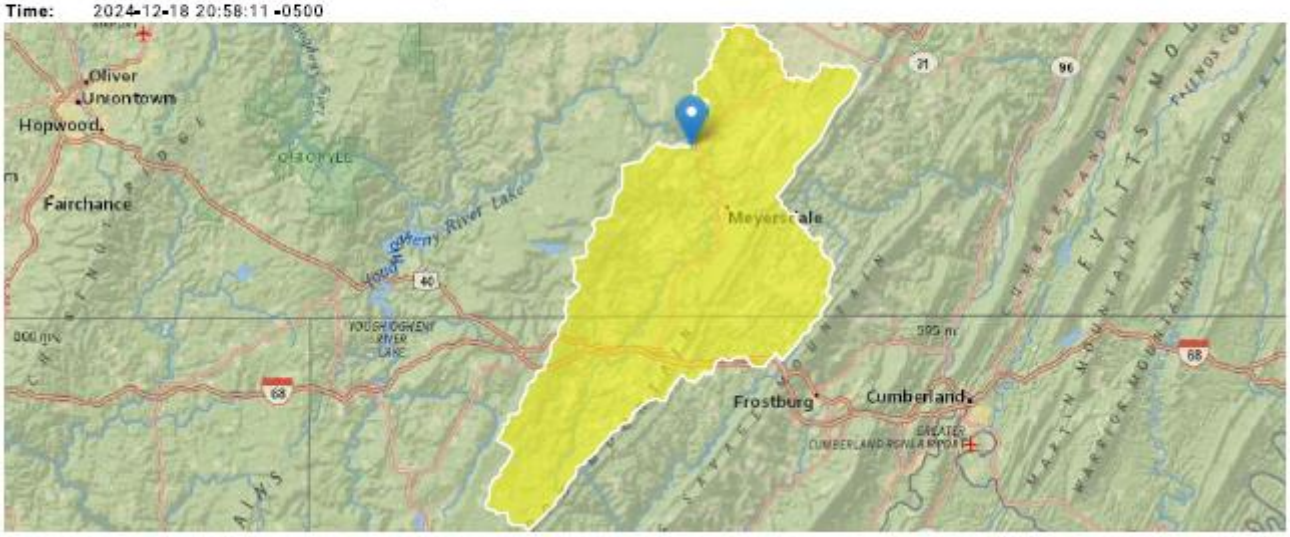
Compliance Sampling Location: At Outfall 001

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:

StreamStats at Outfall 001

PA0039489 at Outfall 001

Region ID: PA
Workspace ID: PA20241219015750593000
Clicked Point (Latitude, Longitude): 39.86352, -79.06448
Time: 2024-12-18 20:58:11 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	254	square miles
ELEV	Mean Basin Elevation	2447	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	254	square miles	2.26	1400
ELEV	Mean Basin Elevation	2447	feet	1050	2580

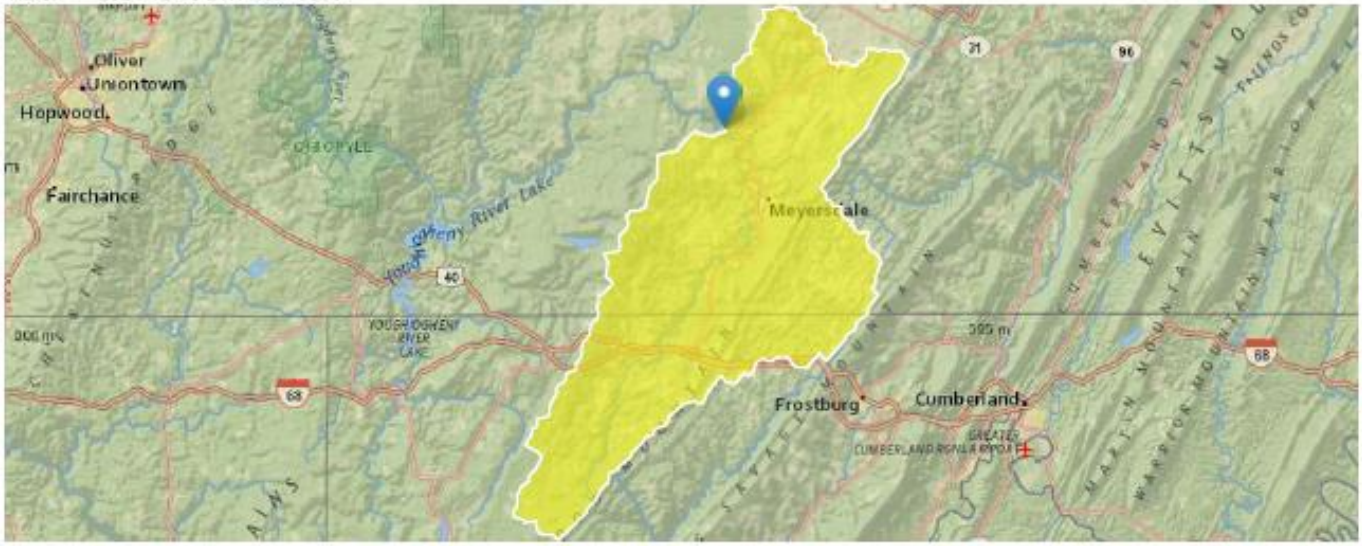
Low-Flow Statistics Flow Report [Low Flow Region 4]

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	27.9	ft^3/s	43	43
30 Day 2 Year Low Flow	43.4	ft^3/s	38	38
7 Day 10 Year Low Flow	11.3	ft^3/s	66	66
30 Day 10 Year Low Flow	17.1	ft^3/s	54	54
90 Day 10 Year Low Flow	31.4	ft^3/s	41	41

PA0039489 at node 2

Region ID: PA
Workspace ID: PA20241219021046905000
Clicked Point (Latitude, Longitude): 39.87001, -79.07077
Time: 2024-12-18 21:11:07 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	257	square miles
ELEV	Mean Basin Elevation	2446	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	257	square miles	2.26	1400
ELEV	Mean Basin Elevation	2446	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

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	28.3	ft^3/s	43	43
30 Day 2 Year Low Flow	44	ft^3/s	38	38
7 Day 10 Year Low Flow	11.5	ft^3/s	66	66
30 Day 10 Year Low Flow	17.3	ft^3/s	54	54
90 Day 10 Year Low Flow	31.8	ft^3/s	41	41

WQM 7.0

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
19F	38579	CASSELMAN RIVER	**29.460**	1901.20	254.00	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	0.044	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
Garrett Boro	PA0039489	0.0670	0.0670	0.0670	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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19F	38579	CASSELMAN RIVER	**28.720**	1883.99	257.00	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	0.044	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
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19F	38579	CASSELMAN RIVER

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												
29.460	11.18	0.00	11.18	.1036	0.00440	.832	56.78	68.27	0.24	0.189	25.00	7.00
Q1-10 Flow												
29.460	7.15	0.00	7.15	.1036	0.00440	NA	NA	NA	0.19	0.242	25.00	7.00
Q30-10 Flow												
29.460	15.20	0.00	15.20	.1036	0.00440	NA	NA	NA	0.28	0.160	25.00	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	4		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19F	38579	CASSELMAN RIVER

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
29.460	Garrett Boro	11.07	50	11.07	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
29.460	Garrett Boro	1.37	25	1.37	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
29.46	Garrett Boro	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	38579	CASSELMAN RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
29.460	0.067	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
56.784	0.832	68.268	0.239
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.21	0.133	0.23	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.204	8.082	Tsivoglou	4
Reach Travel Time (days)			
0.189			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.019	2.20	0.23	7.54
0.038	2.20	0.22	7.54
0.057	2.19	0.22	7.54
0.076	2.18	0.21	7.54
0.095	2.18	0.21	7.54
0.114	2.17	0.20	7.54
0.133	2.16	0.20	7.54
0.151	2.16	0.20	7.54
0.170	2.15	0.19	7.54
0.189	2.14	0.19	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	38579	CASSELMAN RIVER

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)
29.460	Garrett Boro	PA0039489	0.067	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

TRC

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

11.3	= Q stream (cfs)	0.5	= CV Daily
0.067	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	34.797	1.3.2.iii	WLA cfc =	33.917
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	12.966	5.1d	LTA_cfc =	19.718

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

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)