pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0037966**
Facility Type	**Municipal**	APS ID	**1042701**
Major / Minor	**Major**	Authorization ID	**1360838**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Moshannon Valley Joint Sewer Authority**	Facility Name	**MVJSA WPCF**
Applicant Address	829 N 9th Street	Facility Address	829 N 9th Street
	Philipsburg, PA 16866-2327		Philipsburg, PA 16866-2327
Applicant Contact	James Harris	Facility Contact	James Harris
Applicant Phone	(814) 342-6203	Facility Phone	(814) 342-6203
Client ID	66826	Site ID	458708
Ch 94 Load Status	Not Overloaded	Municipality	Rush Township
Connection Status	No Limitations	County	Centre
Date Application Received	July 6, 2021	EPA Waived?	No
Date Application Accepted	July 9, 2021	If No, Reason	Major Facility, Significant CB Discharge, Discharge to TMDL waters

Purpose of Application: Renewal of an existing NPDES permit for the discharge of treated sewage.

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
X		*Derek S. Garner* Derek S. Garner / Project Manager	December 8, 2021
X		*Nicholas W. Hartranft* Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	December 9, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	2.037
Latitude	40º 54' 32.12"	Longitude	-78º 13' 28.12"
Quad Name	Philipsburg	Quad Code	1120
Wastewater Description:	Sewage Effluent		

Receiving Waters	Moshannon Creek	Stream Code	25695
NHD Com ID	61831703	RMI	33.7
Drainage Area (mi^2)	104	Yield (cfs/mi^2)	0.151
Q_{7-10} Flow (cfs)	15.7	Q_{7-10} Basis	Streamgage No. 01542000
Elevation (ft)	1418	Slope (ft/ft)	n/a
Watershed No.	8-D	Chapter 93 Class.	TSF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Metals		
Source(s) of Impairment	Abandoned Mine Drainage		
TMDL Status	Final	Name	Moshannon Creek Watershed

Nearest Downstream Public Water Supply Intake	Pennsylvania-American Water Company		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	679.73
PWS RMI	10.66	Distance from Outfall (mi)	158.02

Treatment Facility Summary

The Moshannon Valley Joint Sewer Authority (“MVJSA”) Water Pollution Control Facility (“WPCF”) services Chester Hill Borough, Decatur Township, Morris Township, Philipsburg Borough, and Rush Township. The facility is rated for an annual average design flow and hydraulic design capacity of 2.037 MGD and an organic design capacity of 4,398 lbs/day. Construction and operation of the MVJSA WPCF is covered under WQM Permit No. 1472402 A-3. The WQM permit was originally issued on September 6, 1972 and most recently amended on October 7, 2021 to approve decommissioning of the existing chlorine disinfection system and installation/operation of a proposed UV disinfection system. Start-up of the proposed UV disinfection system is anticipated to begin June 1, 2023.

Treatment at the facility is comprised of one mechanical bar screen, one manual bypass bar screen,, two aeration tanks, two clarifiers, and two chlorine contact tanks. Wasted sludge is aerobically digested and land applied on local farmland or dewatered using a centrifuge and hauled to the Greentree Landfill in Fox Township, Elk County, Pennsylvania.

Treated effluent is discharged via Outfall 001 to Moshannon Creek.

Compliance History

The following effluent violations occurred during the existing permit's term:

Noncompliance Date	Parameter	Sample Value	Violation Condition	Permit Value	Unit	SBC
7/18/2017	Fecal Coliform	2420	>	1000	CFU/100 ml	IMAX
8/21/2018	Fecal Coliform	2420	>	1000	No./100 ml	IMAX
10/15/2018	Fecal Coliform	24196	>	1000	No./100 ml	IMAX
6/18/2019 (1)	Iron, Total	58.06	>	37.53	lbs/day	Daily Maximum
6/18/2019 (1)	Total Suspended Solids	913	>	760	lbs/day	Weekly Average
11/11/2020	Total Suspended Solids	52	>	45	mg/L	Weekly Average
10/19/2021	Fecal Coliform	1011	>	1000	No./100 ml	IMAX

(1) Effluent exceedances on June 18, 2019 were attributed to a heavy storm event.

There are no open violations associated with the permittee.

The facility was most recently inspected by DEP on July 13, 2021. The inspection report notes that all required treatment units appeared to be online and operational. The outfall was not observed.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 2.037
Latitude 40º 54' 32.15" **Longitude** -78º 13' 28.15"
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)

Water Quality-Based Limitations

Treatment requirements for discharges to waters affected by abandoned mine drainage ("AMD") are established at 25 Pa. Code § 95.5. Specifically, § 95.5(a)(1) states that only secondary treatment is required when the receiving water is so polluted by AMD that aquatic communities are essentially excluded. Section 95.5(b) further states that a greater degree of treatment is only required when, 1) the water quality of the receiving water has or is expected to improve significantly, or 2) secondary treatment would cause pollution in downstream waters, so that designated stream uses would not be achievable.

On September 19, 2016 DEP conducted a § 95.5 determination study which concluded that at Outfall 001, and for at least several miles downstream, Moshannon Creek is impaired to the point that aquatic communities are excluded. Based on this determination, the MVJSA WPCF is only required to treat to secondary standards (40 CFR § 133.102 and 25 Pa. Code § 92a.47). It does not appear that the two exclusions identified above to require a greater degree of treatment will be met either as, 1) due to the nature of the AMD impact in the Moshannon Creek Watershed there will not be a significant improvement in water quality within the next permit term, and 2) Outfall 001 will not negatively impact the next downstream water which is 33.7 miles away and also impacted by AMD (West Branch Susquehanna River).

WQBELs for total residual chlorine were not evaluated based on the above determination. BAT limits will govern.

Total Maximum Daily Load (TMDL)

Even though DEP has determined that Moshannon Creek is absent of an aquatic community, 40 CFR § 122.44(d)(1)(vii)(B) still requires DEP to establish effluent limits consistent with any available wasteload allocation ("WLA"). The Moshannon Creek Watershed TMDL, May 27, 2009, was created to address impairments caused by the three primary metals associated with AMD (iron, manganese, aluminum) and pH. The TMDL assigns the MVJSA WPCF a WLA for these metals based on 25 Pa. Code Chapter 93 criteria and the facility's design flow at the time of TMDL development (1.5 MGD). The WLA is as follows:

Parameter	Allowable Avg. Mo. Conc. (mg/l)	Calc. Avg. Flow (MGD)	WLA (lbs/day)
Total Aluminum	0.75	1.50	9.40
Total Iron	1.50	1.50	18.80
Total Manganese	1.00	1.50	12.50

Since the WLA's are based off concentrations set at criteria they are already equivalent to effluent limits and do not need to undergo further conversion. The TMDL parameters are proposed to be established in the permit as follows:

Parameter	Mass Units (lbs/day)		Concentrations (mg/L)		
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant. Maximum
Total Aluminum	9.40	9.40	0.75	0.75	0.75
Total Iron	18.80	37.53	1.50	3.00	3.75
Total Manganese	12.51	25.02	1.00	2.00	2.50

Unlike iron and manganese, aluminum's criterion is based on acute toxicity concerns. Since acute toxicity is the governing criterion, and in aluminum's case the only criterion, it is appropriate to establish the concentration of 0.75 mg/l as the daily maximum and instantaneous maximum limits.

pH will be addressed through secondary treatment standards (6.0-9.0 S.U.) identified in the TBELs section above.

Best Professional Judgment (BPJ) Limitations

To help characterize the wastewater and assist in Chapter 94 reporting requirements, raw sewage influent monitoring for BOD5 and TSS are proposed to remain in the permit.

A monthly reporting requirement for E. Coli is proposed per the 2017 Triennial Review of Water Quality Standards, published in the PA Bulletin on July 11, 2020.

Chesapeake Bay

MVJSA WPCF is identified as a Phase 2 facility in the Supplement to Pennsylvania's Phase III Watershed Implementation Plan. Accordingly, it has been assigned cap loads for Total Nitrogen (37,205 lbs/yr) and Total Phosphorus (4,960 lbs/yr).

The MVJSA WPCF is authorized to use 10,688 lbs/yr as Total Nitrogen Offsets towards compliance with the abovementioned cap load. The Offsets are based on 427.5 on-lot sewage disposal systems being connected to the public sewer system after January 1, 2003 in which 25 lbs/year of TN offsets are granted per connection.

Anti-Backsliding

No limits are proposed to be made less stringent than existing limits.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☒ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☐ Other:

The dilution series used for the tests was: 100%, 60%, 19%, 10%, and 5%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 19%.

Summary of Four Most Recent Test Results

TST Data Analysis

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
September 2017	Pass	Pass	Pass	Pass
November 2018	Pass	Pass	Pass	Pass
November 2019	Pass	Pass	Pass	Pass
October 2020	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests?

☐ **YES** ☒ **NO**

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.495** Chronic Partial Mix Factor (PMFc): **1**

1. **Determine IWC – Acute (IWCa)**:

   $(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

   [(2.037 MGD x 1.547) / ((15.7 cfs x 0.495) + (2.037 MGD x 1.547))] x 100 = **29%**

   Is IWCa < 1%? ☐ **YES** ☒ **NO**

   Type of Test for Permit Renewal: **Chronic**

2. **Determine Target IWCc**

   $(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

   [(2.037 MGD x 1.547) / ((15.7 cfs x 1) + (2.037 MGD x 1.547))] x 100 = **17%**

3. **Determine Dilution Series**

   Dilution Series = **100%, 59%, 17%, 9%, and 4%**

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

Existing Effluent Limitations and Monitoring Requirements

The existing effluent limitations and monitoring requirements are as follows:

Outfall 001, Effective Period: Permit Effective Date through May 31, 2018

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	1.0	XXX	2.3	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	420	675	XXX	25.0	40.0 Wkly Avg	50.0	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	505	760	XXX	30.0	45.0 Wkly Avg	60.0	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Aluminum, Total	9.40	9.40	XXX	0.75	0.75	0.75	2/week	24-Hr Composite
Iron, Total	18.80	37.53	XXX	1.50	3.00	3.75	2/week	24-Hr Composite
Manganese, Total	12.50	25.02	XXX	1.00	2.00	2.50	2/week	24-Hr Composite

Outfall 001, Effective Period: June 1, 2018 through Permit Expiration Date

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	420	675	XXX	25.0	40.0 Wkly Avg	50.0	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	505	760	XXX	30.0	45.0 Wkly Avg	60.0	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Aluminum, Total	9.40	9.40	XXX	0.75	0.75	0.75	2/week	24-Hr Composite
Iron, Total	18.80	37.53	XXX	1.50	3.00	3.75	2/week	24-Hr Composite
Manganese, Total	12.50	25.02	XXX	1.00	2.00	2.50	2/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	XXX	37205 (1)	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	XXX	4960	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

(1) The permittee is authorized to use 10,688 lbs/year as Total Nitrogen (TN) Offsets toward compliance with the Annual Net TN mass load limitation (Cap Load) in accordance with Part C of this permit. These Offsets may be applied throughout the Compliance Year or during the Truing Period. The application of Offsets must be reported to DEP as described in Part C. The Offsets are authorized for the following pollutant load activities.

- Connection of 427.5 on-lot sewage disposal systems to the public sewer system after January 1, 2003 in which 25 lbs/year of TN offsets are granted per connection.

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 May 31, 2023.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	Report Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	420	675	XXX	25.0	40.0	50	2/week	24-Hr Composite
TSS	505	760	XXX	30.0	45.0	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Aluminum	9.40	9.40 Daily Max	XXX	0.75	0.75 Daily Max	0.75	2/week	24-Hr Composite
Total Iron	18.80	37.53 Daily Max	XXX	1.50	3.00 Daily Max	3.75	2/week	24-Hr Composite
Total Manganese	12.50	25.02 Daily Max	XXX	1.00	2.00 Daily Max	2.5	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite

Outfall 001, Effective Period: June 1, 2023 through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	Report Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	420	675	XXX	25.0	40.0	50	2/week	24-Hr Composite
TSS	505	760	XXX	30.0	45.0	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Ammonia	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Aluminum	9.40	9.40 Daily Max	XXX	0.75	0.75 Daily Max	0.75	2/week	24-Hr Composite
Total Iron	18.80	37.53 Daily Max	XXX	1.50	3.00 Daily Max	3.75	2/week	24-Hr Composite
Total Manganese	12.50	25.02 Daily Max	XXX	1.00	2.00 Daily Max	2.5	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen (1)	XXX	37205	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	XXX	4960	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

(1) The permittee is authorized to use 10,688 lbs/year as Total Nitrogen (TN) Offsets toward compliance with the Annual Net TN mass load limitation (Cap Load) in accordance with Part C of this permit. These Offsets may be applied throughout the Compliance Year or during the Truing Period. The application of Offsets must be reported to DEP as described in Part C. The Offsets are authorized for the following pollutant load activities.

- Connection of 427.5 on-lot sewage disposal systems to the public sewer system after January 1, 2003 in which 25 lbs/year of TN offsets are granted per connection.

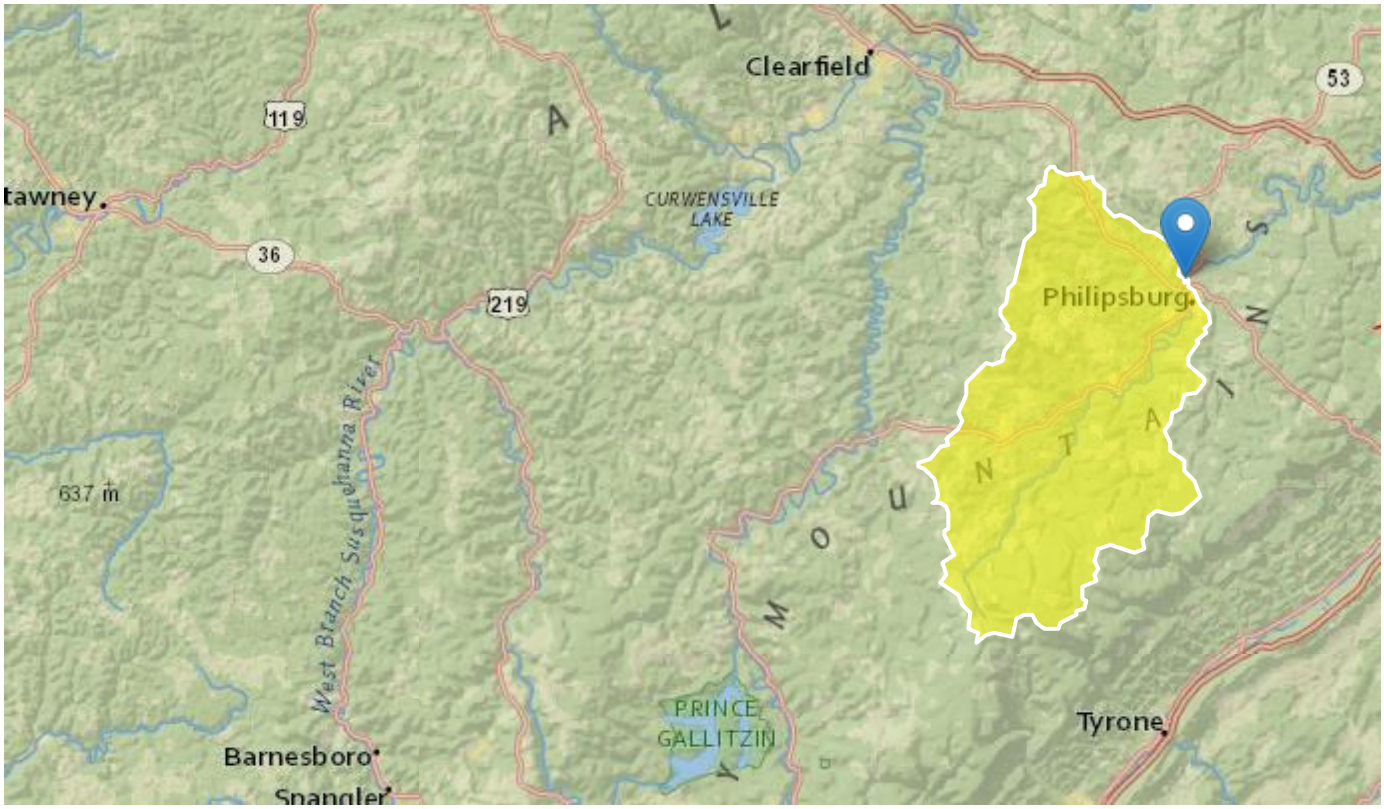
DFLOW Results

All available data from Apr 1, 1991 through Mar 31, 2021 are included in analysis.

Gage	Period	Days in Record	Zero/Missing	1B3	Percentile	Excur per 3 yr	1Q10	Percentile	Excur per 3 yr	1Qy Type	xQy	Percentile	Harmonic	Percentile
01542000 - Moshannon Creek at Osceola Mills, PA	1972/04/01 - 1993/04/01	7,670	0/0	8	0.13%	1	8.64	0.34%	1	1Q11	7.93	0.13%	51.8	34.50%
Gage	**Period**	**Days in Record**	**Zero/Missing**	**1B3**	**Percentile**	**Excur per 3 yr**	**7Q10**	**Percentile**	**Excur per 3 yr**	**7Qy Type**	**xQy**	**Percentile**	**Harmonic**	**Percentile**
01542000 - Moshannon Creek at Osceola Mills, PA	1972/04/01 - 1993/04/01	7,670	0/0	8	0.13%	1	10.4	0.63%	2.14	> 21 years	N/A	N/A	51.8	34.50%
Gage	**Period**	**Days in Record**	**Zero/Missing**	**1B3**	**Percentile**	**Excur per 3 yr**	**30Q10**	**Percentile**	**Excur per 3 yr**	**30Qy Type**	**xQy**	**Percentile**	**Harmonic**	**Percentile**
01542000 - Moshannon Creek at Osceola Mills, PA	1972/04/01 - 1993/04/01	7,670	0/0	8	0.13%	1	14	1.77%	3.43	> 21 years	N/A	N/A	51.8	34.50%

Moshannon Valley Joint Sewer Authority Water Pollution Control Facility

Region ID: PA
Workspace ID: PA20211202193745954000
Clicked Point (Latitude, Longitude): 40.90881, -78.22460
Time: 2021-12-02 14:38:06 -0500



Drainage area at Outfall 001

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	5.8777	degrees
BSLOPDRAW	Unadjusted basin slope, in degrees	6.0876	degrees
BSLPDRPA20	Unadjusted basin slope, in degrees, from PA v1	6.4456	degrees

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
CENTROXA83	X coordinate of the centroid, in NAD_1983_Albers, meters	-25544.4472	meters
CENTROYA83	Basin centroid horizontal (y) location in NAD 1983 Albers	204200.1191	meters
DRN	Drainage quality index from STATSGO	3.5	dimensionless
DRNAREA	Area that drains to a point on a stream	104	square miles
ELEV	Mean Basin Elevation	1770	feet
ELEVMAX	Maximum basin elevation	2629	feet
FOREST	Percentage of area covered by forest	77.0658	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	0	percent
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	1.5676	percent
LC01DEV	Percentage of land-use from NLCD 2001 classes 21-24	10.8357	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	10.9697	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	1.7216	percent
LONG_OUT	Longitude of Basin Outlet	-78.224589	degrees
MAXTEMP	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid	56.9	degrees F
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	-18918.969	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	211958.9484	meters
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.5	feet
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0.22	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	1.33	miles per square mile

Parameter Code	Parameter Description	Value	Unit
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	138.22	miles
URBAN	Percentage of basin with urban development	3.595	percent

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Low-Flow (Q_{7-10}) Calculation

Facility: **MVJSA WPCF**

NPDES Permit No. **PA0037966**

Gage Information

Drainage Area: **68.8** mi^2

Q_{7-10}: **10.4** cfs

LFY: **0.151** cfsm

Outfall Information

Drainage Area: **104** mi^2

Q_{7-10}: **15.7** cfs

Downstream Locations

RMI: **33.48**
Drainage Area: **126** mi^2
Q_{7-10}: **19.05** cfs

RMI: **32.4**
Drainage Area: **131** mi^2
Q_{7-10}: **19.8** cfs

RMI: **32**
Drainage Area: **133** mi^2
Q_{7-10}: **20.1** cfs

RMI: **31.6**
Drainage Area: **135** mi^2
Q_{7-10}: **20.4** cfs

RMI: **31.3**
Drainage Area: **137** mi^2
Q_{7-10}: **20.71** cfs

RMI: **30.3**
Drainage Area: **139** mi^2
Q_{7-10}: **21** cfs

RMI: **29.1**
Drainage Area: **142** mi^2
Q_{7-10}: **21** cfs

RMI: **26.2**
Drainage Area: **147** mi^2
Q_{7-10}: **22.2** cfs

pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

SUBJECT: PA Code Chapter 95.5 Determination Study Report
Moshannon Creek (DEP Stream File #25695) at Phillipsburg, PA
Moshannon Valley Joint Sewer Authority, Rush Township, Centre County
NPDES Permit #PA0037966

TO: Derek S. Garner to/4/1&
Project Manager
Clean Water Program (CW) - Permitting Section
Northcentral Regional Office (NCRO)

FROM: David I. Rebuck :Dl A. 0'\ I S[I *fo*
Water Pollution Biologist 2
Clean Water Program - Operations Section
Northcentral Regional Office

THROUGH: Jared N. Dressler :r-,-.JD c-1/2-°'-)1 <.,;,
Environmental Group Manager
Clean Water Program - Operations Section
Notihcentral Regional Office

DATE: September 28, 2016

On September 19, 2016, Dave Rebuck conducted a PA Code Chapter 95.5 (PA Code 1985) Determination Study for the presence or absence of an existing aquatic macroinvetiebrate community in Moshannon Creek (DEP #25695) at the Centre County/Clearfield County border in Phillipsburg, PA. The study was conducted for the Moshannon Valley Joint Sewer Authority (JSA) in Rush Township, Centre County. Derek Garner, Clean Water Program Project Manager, requested the investigation for NPDES Permit #PA0037966. Macroinve1iebrate survey methods included D-frame net jab samples for the low-gradient multi-habitat (PA-DEP 2007), with field examination in a white plastic tray and taxonomic identification to family level. Water chemistry parameters were recorded with field meters and test kits. The most recent PA-DEP Chapter 95.5 Study at this location in May 2009 determined that Moshannon Creek was impaired from abandoned mine drainage (AMD) and metals, to the point that aquatic communities were excluded.

Moshannon Creek was surveyed in a 100-meter sample reach, beginning approximately 75 meters upstream (N40.90810, W78.22463) of the Moshannon Valley JSA outfall, above the 9th Street Bridge in Phillipsburg. This low-gradient section of Moshannon Creek is bordered by very large, extensive wetlands. The sample reach is exclusively deep water, glide-pool habitat, with no visible shallow riffle and mn areas present. The bottom of the stream channel is filled with a thick layer of soft orange-green flocculent deposits from AMD, which covers all benthic substrates. Dense beds of rooted·grass macrophytes completely fill the stream channel from bank to bank. Moshannon Creek is not wadeable in this reach, due to the deep water and extremely soft bottom. Therefore, all macroinvertebrate samples were collected by reaching out from the bank and taking D-frame net jabs into the stream channel.

Field chemistry measurements recorded during this study were as follows: water temperature 19.2 °C, dissolved oxygen 8.32 mg/I, pH 5.17, specific conductance 631 umhos, and alkalinity 6 mg/I.

Macroinvertebrate samples collected and analyzed during this investigation revealed the absence of a true benthic community, probably due to thick, flocculent AMD deposits smothering the stream bottom. A few limited macroinve1iebrate taxa were found in the rooted, aquatic grasses in the water column above the AMD impacted benthic layer. Macroinvertebrates found in the vegetation included Coenagrionidae damselflies, Leptoceridae and Polycentropodidae caddisflies, Crambidae *(Paraponyx)* aquatic moths, Dytiscidae beetles, Chironomidae midges and Crangonyctidae scuds. None of the macroinvertebrates were abundant or pollution sensitive, with their Pollution Tolerant Values (PTV's) ranging from 4 to 8. In addition, no mayflies or stoneflies were found in any of the jab samples. It is unlikely that any of the macroinvertebrates found in the rooted aquatic grasses would be able to survive on the bottom of Moshannon Creek, due to long-te1m negative impacts to the benthic substrates from AMD and metals.

Due to AMD impahment ofMoshannon Creek from Houtzdale to the mouth near Karthaus, a TMDL plan and several remediation projects have been implemented in the watershed. Although, the results of this study suggest some minor improvements in water quality since the last PA-DEP Chapter 95.5 Study in May 2009, the water quality of the stream still does not support a benthic macroinvertebrate community. Only a few pollution tolerant macroinvertebrates were found in rooted aquatic grasses in the water column above the benthic substrates. Chapter 95.5 studies should be continued in future years on Moshannon Creek, near the Moshannon Valley JSA, to continue monitoring the recovery of the stream.

Literature Cited

Pennsylvania Department of Environmental Protection (PA-DEP). 2007. *Pennsylvania DEP Multihabitat Stream Assessment Protocol.* March 2007.

The Pennsylvania Code. 1985. Chapter 95. *Wastewater Treatment Requirements.* Chapter 95.5. *Treatment Requirements for Discharges to Waters Affected by Abandoned Mine Drainage.* Commonwealth of Pennsylvania.