

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0088668
APS ID 19420
Authorization ID 1421707

Applicant and Facility Information

Applicant Name	<u>Metal Township Municipal Authority</u>	Facility Name	<u>Metal Township STP</u>
Applicant Address	<u>17001 Fannettsburg Road E PO Box 232</u> <u>Fannettsburg, PA 17221</u>	Facility Address	<u>17001 Fannettsburg Road East</u> <u>Fannettesburg, PA 17221</u>
Applicant Contact	<u>Mark Crider</u>	Facility Contact	<u>Janice Gipe</u>
Applicant Phone	<u>(717) 349-7452</u>	Facility Phone	<u>(717) 349-7452</u>
Client ID	<u>91970</u>	Site ID	<u>459406</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Metal Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Franklin</u>
Date Application Received	<u>December 14, 2022</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>December 29, 2022</u>	If No, Reason	<u></u>
Purpose of Application	<u>NPDES Renewal.</u>		

Summary of Review

Metal Township Municipal Authority (MTMA) has applied to the Pennsylvania Department of Environmental Protection (DEP or Department) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was last reissued on June 29, 2018 and became effective on July 1, 2018. The permit was expired on June 30, 2023.

Sludge use and disposal description and location(s): Any solids generated from this facility will be stored in the sludge holding tank prior to being hauled off site and landfilled under PAG083580.

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		<i>Jinsu Kim</i> Jinsu Kim / Environmental Engineering Specialist	March 6, 2024
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	March 22, 2024
X		Maria D. Bebenek Maria D. Bebenek, P.E. / Program Manager	March 22, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.04</u>
Latitude	<u>40° 3' 39.45"</u>	Longitude	<u>-77° 48' 59.42"</u>
Quad Name	<u>Fannettsburg</u>	Quad Code	<u>1823</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>West Branch Conococheague Creek</u>	Stream Code	<u>59398</u>
NHD Com ID	<u>49470024</u>	RMI	<u>37.13</u>
Drainage Area	<u>57.8 mi²</u>	Yield (cfs/mi ²)	<u>0.052</u>
Q ₇₋₁₀ Flow (cfs)	<u>2.98</u>	Q ₇₋₁₀ Basis	<u>USGS StreamStats</u>
Elevation (ft)	<u>730.61</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>13-C</u>	Chapter 93 Class.	<u>CWF, MF</u>
Existing Use	<u>None</u>	Existing Use Qualifier	<u>None</u>
Exceptions to Use	<u>None</u>	Exceptions to Criteria	<u>None</u>
Assessment Status	<u>Attaining Use</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>
Nearest Downstream Public Water Supply Intake	<u>Hagerstown, MD</u>		
PWS Waters	<u>Potomac River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u>65.33</u>

Drainage Area

A drainage area upstream of the discharge point is estimated to be 57.5 sq.mi. according to USGS StreamStats available at <https://streamstats.usgs.gov/ss/>

Streamflow

USGS StreamStats produced a Q₇₋₁₀ of 2.95 cfs at the point of discharge.

West Branch Conococheague

West Branch Conococheague is classified as CWF-MF no special protection therefore is impacted by this discharge. No Class A Wild Trout Fishery is impacted by this discharge. West Branch Conococheague near the point of discharge is not currently impaired.

Public Water Supply Intake

The fact sheet developed for the last permit renewal indicates that the nearest downstream public water supply is at Hagerstown, MD on Potomac River. It is approximately 65 miles downstream of the discharge. Due to the distance, dilution, and effluent limits the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Metal Township Municipal Authority - Fannettsburg STP				
WQM Permit No.		Issuance Date		
2898401 06-1		October 25, 2006		
2898401 01-1		April 27, 2001		
2898401		September 3, 1998		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Biolac Extended Aeration	Ultraviolet	0.04
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.044	81	Not overloaded	Dewatering	Landfill

MTMA operates a sanitary wastewater treatment facility located in Metal Township, Franklin County. The facility is designed for 0.04 MGD with the hydraulic design capacity of 0.044 MGD and organic loading of 85 lbs BOD₅/day. The facility utilizes an extended aeration activated sludge treatment process including a bar screen, aeration lagoon, a clarifier, UV disinfection, effluent holding tank, and outfall structure. It is noteworthy that MTMA also utilizes a spray irrigation system permitted under WQM permit no. 2898401. The primary disposal method of treated effluent is spray irrigation, especially during summer season as field conditions are typically favorable for spray. Stream discharge is permitted if spray is not allowed due to prohibitive weather and field conditions. MTMA utilizes one UV disinfection system and two (2) sand filters for spray field. The plant has two separate UV systems. One UV system, Trojan UV3000PTP, is installed prior to effluent holding tank, from where it is either discharged to stream or treated again through another set of UV lights if it is spray irrigated.

The facility has a spray irrigation site consisting 36 spray heads within 20.617 acres. The spray irrigation is regulated under the WQM permit 2898401 06-1, amended on October 25, 2006. Spray irrigation is the primary method of disposal of treated effluent. When the site conditions are not favorable for spray irrigation, stream discharge is permitted at a maximum rate of 0.04 MGD, to be discharged in 24-hours.

Any solids generated from this facility will be stored in the sludge holding tank prior to being hauled off site and landfilled under PAG083580.

Compliance History	
Summary of DMRs:	A summary of 12-month DMR data is presented on the next page.
Summary of Inspections:	August 11, 2022: Cody Hoy, DEP Water Quality Specialist, conducted a routine inspection and noted that the facility failed to use an NIST thermometer. No significant issues were found at the time of inspection.
Other Comments:	Since the last permit reissuance there are a number of permit violations identified that were associated with sample type not in accordance with the permit. There were also a number of effluent violations, mostly associated with fecal coliform and Total Suspended Solids. DEP's database reveals that there is no open violation associated with this facility or permittee.

NPDES Permit Fact Sheet
Metal Township STP

NPDES Permit No. PA0088668

Effluent Data

DMR Data for Outfall 001 (from December 1, 2022 to November 30, 2023)

Parameter	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22
Flow (MGD) Average Monthly	0.0427	0.0372	0.03614 1	0.0353	0.035	0.0357	0.0352					
Flow (MGD) Daily Maximum	0.0484	0.0376	0.03641 3	0.0361	0.035	0.0362	0.0362					
pH (S.U.) Daily Minimum	6.9	6.8	6.9	7.0	6.9	6.8	6.8					
pH (S.U.) Daily Maximum	7.0	6.9	7.1	7.3	7.2	6.9	6.9					
CBOD5 (mg/L) Average Monthly	3.0	3.0	3.0	3.0	3.0	3.0	3.0					
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	38.5	31.8	24.0	33.7	38.6	42.0	46.5	35.3	49.5	40.6	48.9	45.0
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	39.1	34.9	26.5	38.4	45.8	52.6	54.6	39.5	54.1	52.5	57.5	59.3
BOD5 (mg/L) Raw Sewage Influent Average Monthly	221.0	217.0	134.5	190.5	189.5	237.5	257.5	211.0	250.0	237.5	235.0	245.0
TSS (lbs/day) Raw Sewage Influent Average Monthly	14.7	17.8	14.8	12.2	30.0	16.5	21.8	20.4	17.4	17.0	27.7	25.5
TSS (lbs/day) Raw Sewage Influent Daily Maximum	17.1	21.8	18.1	16.2	30.0	29.9	27.9	24.0	19.2	17.6	32.4	31.3
TSS (mg/L) Average Monthly	1.6	3.0	2.14	3.6	1.8	2.8	1.6					
TSS (mg/L) Raw Sewage Influent Average Monthly	85.5	119.5	84.0	71.5	146.5	86.4	121.0	122.0	88.0	97.0	133.0	139.0
Fecal Coliform (No./100 ml) Geometric Mean	1.0	< 1.0	4.0	2.0	< 4.0	2.0	1.0					
Nitrate-Nitrite (mg/L) Average Monthly	42.65	41.12	35.15	18.97	17.94	39.89	35.43					
Ammonia (mg/L) Average Monthly	0.1	0.11	0.37	1.9	3.05	0.27	0.28					
TKN (mg/L) Average Monthly	0.5	0.5	0.5	1.1	2.64	0.5	0.5					
TP (mg/L) Average Monthly	6.66	6.76	7.02	7.03	6.75	8.69	6.0					

Existing Effluent Limitations and Monitoring Requirements

Tables below summarize effluent limits and monitoring requirements specified in the existing permit.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	8.0	13.0	XXX	25.0	40.0	50	2/month	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Suspended Solids	10.0	15.0	XXX	30.0	45.0	60	2/month	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
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
Ultraviolet light intensity (mW/cm ²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen	XXX	XXX	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/quarter	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite

Development of Effluent Limitations and Monitoring Requirements

Outfall No. 001	Design Flow (MGD) 0.04
Latitude 40° 3' 52.38"	Longitude -77° 49' 9.61"
Wastewater Description: Treated sewage	

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

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

Comments: These standards apply, subject to Water Quality Analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD₅, NH₃-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD₅, NH₃-N and DO. DEP's technical guidance no. 391-2000-007 describes the technical methods contained in the model for conducting wasteload allocation analyses and for determining recommended limits for point source discharges. DEP's SOP no. BCW-PMT-033 indicates that the results of previous modeling efforts can be reviewed for the renewal of minor sewage permit applications if there has been no significant modification to the facility, discharge and receiving waters. There were no changes to the facility, discharge and receiving waters for this minor sewage facility. DEP has therefore determined to use the previous WQM modeling efforts. No changes to existing limits are therefore recommended.

Toxics

There is no toxicity concern from this facility. Minor facilities are not required to report toxics if there is no industrial or commercial contribution per DEP's application form 3800-PM-BCW0342b.

Best Professional Judgment (BPJ) Limitations

Dissolved Oxygen

A minimum of 5.0 mg/L for DO is an existing effluent limit derived directly from state water quality criteria found in 25 Pa Code §93.7(a). This effluent limit will remain unchanged in the permit to ensure that the facility continues to achieve compliance with water quality standards. This approach is recommended by DEP's SOP no. BPNPSM-PMT-033 and therefore has been applied to other sewage facilities throughout the state.

Additional Considerations

Flow Monitoring

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Influent BOD & TSS Monitoring

As a result of negotiation with EPA, the existing influent monitoring reporting requirement for TSS and BOD5 will be maintained in the draft permit. This requirement has been consistently assigned to all municipal wastewater treatment facilities.

E. Coli Monitoring Requirement

DEP's SOP no. BCW-PMT-033 recommends a routine monitoring for E. Coli in all new and reissued sewage permits. As a result, an annual monitoring requirement for E. Coli will be included in the permit given the facility's design flow is less than 0.05 MGD.

UV Disinfection Monitoring Requirement

The existing UV disinfection output monitoring requirement will remain unchanged in the permit. This approach is consistent with DEP's SOP BCW-PMT-033.

Chesapeake Bay TMDL Requirements

This facility is considered a phase 5 sewage facility discharging less than 0.2 MGD but greater than 0.002 MGD. DEP's SOP no. BCW-PMT-033 recommends monitoring of Total Nitrogen and Total Phosphorus for any facilities greater than 0.002 MGD. Therefore, the existing quarterly monitoring will continue to be included in the permit.

Sample Type

Given the size of this facility, the sample type has changed from 8-hour composite with 24-hour composite.

Spray Irrigation

The facility has a spray irrigation site consisting 36 spray heads within 20.617 acres. The spray irrigation is regulated under the WQM permit 2898401 06-1, amended on October 25, 2006. Spray irrigation is the primary method of disposal of treated effluent. When the site conditions are not favorable for spray irrigation, stream discharge is permitted at a maximum rate of 0.04 MGD, to be discharged in 24-hours. The NPDES permit contains the following Part C conditions for spray irrigation:

I. *The discharge to the West Branch Conococheague Creek will not solely set by date. Discharge to the stream will depend upon condition that prohibit spray irrigation.*

1. *Wastewater effluent shall be managed as follows:*

- a. *From November 1 to March 31, prior to any stream discharge, the certified operator will check the spray irrigation parameters listed below. If field conditions prohibit spray irrigation, or the operator make the determination that start-up or re-start of the irrigation system is impractical and may cause damage to the wastewater treatment units, effluent shall be directed to the effluent holding tank. If the effluent holding tank cannot be used, a discharge to the stream may occur.*
- b. *From April 1 to October 31, spray irrigation shall be the primary method of wastewater disposal. A stream discharge is not permitted during these months unless the effluent holding tank is at capacity.*
- c. *If a discharge to the stream is necessary at any time, the effluent discharge shall not exceed 0.040 MGD. The effluent shall be discharged at an equal rate over a 24-hour period.*

2. *The spray field consists of 36 spray heads within 20.617 acres. When is use, effluent shall be evenly distributed over the spray field at a rate not to exceed 0.2 in/hr. The hydraulic loading rates shall not exceed 0.675 inches/acre/week (18,329 gallons per acre per week or 79,365 gallons per acre per month).*

3. *Spray irrigation shall not occur under the following conditions:*

- a. *During precipitation or if more than 0.5 inches of rain fell in the previous 24 hours.*
- b. *If the soils within the spray field are saturated, frozen, or snow covered.*

- c. *If sustained wind velocities at the site exceed 15 mph.*
4. *The spraying of effluent shall be rotated through all zones to ensure even coverage of the permitted area.*
 5. *The spraying of effluent shall be managed to prevent ponding, run-off, or wind drift of effluent from the permitted area.*
 6. *When the spray field is in operation, the operator shall inspect the site on a routine basis to assure proper operation of the spray field. Any inoperable or malfunctioning sprinkler heads or leaks in the supply lines shall be repaired immediately.*
 7. *The area surrounding each sprinkler head shall be kept clear of vegetation obstructing the water stream from the nozzles for a minimum radius of five (5) feet.*
 8. *Unless otherwise approved by the Department in writing, the spray field shall remain vegetated at all times.*
 9. *A crop management plan shall be developed to address crop planting, fertilization, maintenance, and harvesting. This plan shall be submitted within 60 days of permit issuance.*
 10. *A crop shall be harvested annually from the spray field and the yield per acre shall be reported to the Department in January DMR of the following year.*
 11. *Biosolids from the WWTP may be applied to the spray field in accordance with permit PAG-08-3580 and the agronomic loading rate for the crop(s) grown on the site.*
 12. *The permittee shall keep records of the spray field operation including the date of wastewater application, the amount of effluent spray irrigated per day, which zone has been sprayed, weather conditions, the duration of application, the condition of spray field, the amount of snow on the spray field and the rainfall depth that occurred each day. Copies of these records shall be attached to the Monthly Discharge Monitoring Report for the months in which spray irrigation has occurred.*

II. Sample Frequency

During periods of stream discharge the required sample frequency is 2/month. If 2/month sampling is not feasible because the facility is utilizing spray irrigation, this should be noted in the space provided on the supplemental form. The operator should schedule sampling based on anticipated discharge conditions.

DEP determines that these existing conditions are still adequate and therefore will continue to be included in the 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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	8.0	13.0	XXX	25.0	40.0	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	10.0	15.0	XXX	30.0	45.0	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
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
UV Intensity (mW/cm ²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia	XXX	XXX	XXX	Report	Report Daily Max	XXX	2/month	8-Hr Composite
Total Phosphorus	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/quarter	8-Hr Composite
Total Nitrogen	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/quarter	8-Hr Composite
E. Coli (No / 100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

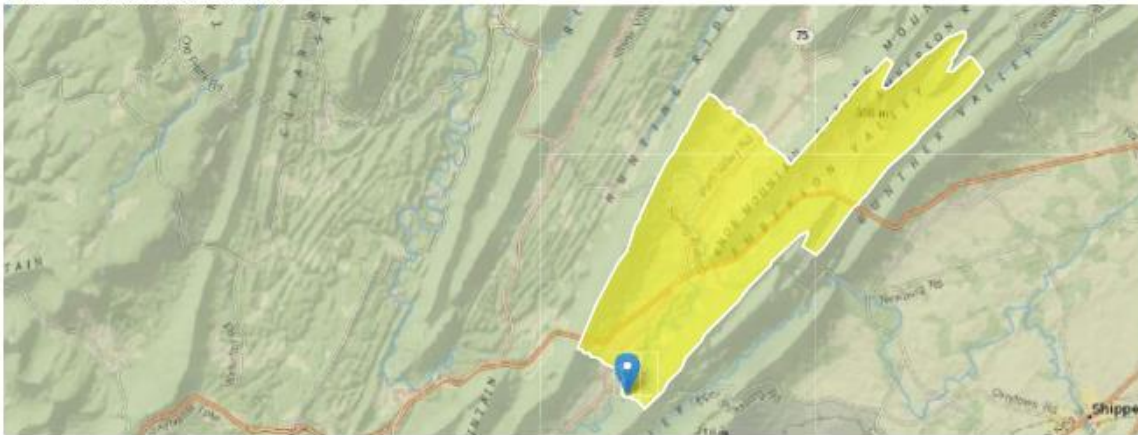
Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP: [redacted]
<input type="checkbox"/>	Other: [redacted]

3/6/24, 9:35 AM

StreamStats

StreamStats Report

Region ID: PA
 Workspace ID: PA20240306143343924000
 Clicked Point (Latitude, Longitude): 40.06073, -77.81646
 Time: 2024-03-06 09:34:07 -0500



Collapse All

> Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	23.13	percent
DRNAREA	Area that drains to a point on a stream	57.5	square miles
PRECIP	Mean Annual Precipitation	40	inches
ROCKDEP	Depth to rock	4.3	feet
STRDEN	Stream Density – total length of streams divided by drainage area	2.42	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
DRNAREA	Drainage Area	57.5	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	2.42	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.3	feet	3.32	5.65
CARBON	Percent Carbonate	23.13	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

PIU: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.96	ft ³ /s	38	38
30 Day 2 Year Low Flow	7.85	ft ³ /s	33	33

3/6/24, 9:35 AM

StreamStats

Statistic	Value	Unit	SE	ASEp
7 Day 10 Year Low Flow	2.95	ft ³ /s	51	51
30 Day 10 Year Low Flow	3.93	ft ³ /s	46	46
90 Day 10 Year Low Flow	5.67	ft ³ /s	36	36

Low-Flow Statistics Citations

Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<http://pubs.usgs.gov/sir/2006/5130/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.19.4

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Input Data WQM 7.0

SMP Data	Stream Code	Stream Name	R/M	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
12C	55286	WEST BRANCH CONOCOHEAGU	37.129	730.61	57.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LTY (ft/m)	Trib Flow (cfs)	Stream Flow (cfs)	Res Time (hrs)	Res Velocity (fps)	WD Ratio	Rich Width (ft)	Rich Depth (ft)	Trib Temp (°C)	pH	Stream Temp (°C)	pH
Q7-10	0.002	0.00	0.20	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q5-10		0.00	0.20	0.000	0.000							
Q20-10		0.00	0.20	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
Metal Township	PA0088668	0.0400	0.0400	0.0400	0.000	20.00	7.10

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NHS-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Screen Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq m)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply EC
12C	52565	WFST BRANCH CONCOCCHEAGUSI	36,580	730.00	69.20	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	L/FY	Trib Flow (cfs)	Stream Flow (cfs)	Hch Trsv Time (days)	Hch Velocity (ft/s)	WU Ratio	Rch Width (ft)	Rch Depth (ft)	Temperature		pH	
									Temp (°C)	pH	Temp (°C)	pH
Q7-18	0.062	0.00	0.33	0.200	0.000	0.0	0.00	0.00	20.00	7.00	3.00	0.00
Q1-18		0.00	0.33	0.200	0.000							
Q50-18		0.00	0.33	0.200	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)	Fctd Coef (1/Mg)
CBOLDS	25.00	2.00	0.00	1.00
Dissolved Oxygen	3.00	8.24	0.00	0.00
NITR	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
15C	59298	WEST BRANCH CONOCOCHIEAGU	24.130	825.55	87.50	0.00090	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY (ft/yr)	Trib Flow (cfs)	Stream Flow (cfs)	Full Trnc Time (days)	Fish Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
									Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.052	0.30	0.00	0.000	0.500	0.0	0.00	0.30	20.00	7.00	0.00	0.00
Q1-10		0.30	0.00	0.000	0.500							
Q30-10		0.30	0.30	0.000	0.200							

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)	Inb Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)			
CRCD5	25.00	2.00	3.30	1.50			
Dissolved Oxygen	3.00	8.24	3.30	0.00			
NH3-N	25.00	0.00	3.30	0.70			

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>									
13C		58988		WEST BRANCH CONODOCHEAGUE CREEK									
RMI	Stream Flow (cfs)	FWG With (cfs)	Net Stream Flow (cfs)	Disc. Analyze Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Time (days)	Analyse Temp (°C)	Analyse pH	
Q7-10 Flow													
37.128	3.01	0.00	3.01	.0613	0.00021	7.78	34.07	48.29	0.12	0.271	20.00	7.00	
36.580	3.08	0.00	3.08	.0619	0.00162	.867	31.85	47.72	0.15	5.142	20.00	7.00	
Q1-10 Flow													
37.129	1.92	0.00	1.92	.0619	0.00021	NA	NA	NA	3.10	0.345	20.00	7.00	
36.580	1.97	0.00	1.97	.0619	0.00162	NA	NA	NA	3.12	6.561	20.00	7.00	
Q30-10 Flow													
37.175	4.00	0.00	4.00	.0619	0.00021	NA	NA	NA	3.14	0.231	20.00	7.00	
36.580	4.09	0.00	4.09	.0619	0.00162	NA	NA	NA	3.17	4.295	20.00	7.00	

WQM 7.0 Modeling Specifications

Parameters	Units	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMFR	Use Inputted WLD Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	2.04	Use Inputted Fresh Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.33	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name					
13C	50598	WEST BRANCH CONOCOCHEAQUE CREEK					

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
37.129	Metal Township	9.66	53	8.66	53	0	0
36.593		NA	NA	8.66	NA	NA	NA

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
37.129	Metal Township	1.82	25	1.02	25	0	0
36.593		NA	NA	1.02	NA	NA	NA

RMI	Discharge Name	CRD25		N-D2N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
37.12	Metal Township	25	25	25	25	5	5	0	3
36.58		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name		
13C	89398	WEST BRANCH CONOCOCHEAQUE CREEK		
RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH	
37.129	0.040	20.000	7.000	
Reach Width (ft)	Reach Depth (ft)	Reach WCRatio	Reach Velocity (fps)	
34.573	0.716	48.283	0.124	
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kt (1/days)	
2.46	0.261	0.50	0.700	
Reach DO (mg/L)	Reach Kr (1/days)	K: Equation	Reach DO Goal (mg/L)	
0.170	0.245	Torsvagne	5	
Reach Travel Time (days)	Subreach Results			
0.271	Travel Time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.027	2.45	0.49	8.12
	0.054	2.43	0.48	8.06
	0.081	2.41	0.48	7.99
	0.108	2.40	0.47	7.94
	0.135	2.38	0.46	7.88
	0.162	2.36	0.45	7.82
	0.189	2.35	0.44	7.77
	0.217	2.33	0.43	7.72
	0.244	2.31	0.43	7.66
	0.271	2.30	0.42	7.61
RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH	
35.560	0.040	20.000	7.000	
Reach Width (ft)	Reach Depth (ft)	Reach WCRatio	Reach Velocity (fps)	
31.824	0.667	47.722	0.148	
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kt (1/days)	
2.20	0.076	0.41	0.700	
Reach DO (mg/L)	Reach Kr (1/days)	K: Equation	Reach DO Goal (mg/L)	
7.027	2.277	Torsvagne	5	
Reach Travel Time (days)	Subreach Results			
5.142	Travel Time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.514	2.20	0.28	8.24
	1.028	2.23	0.20	8.24
	1.542	2.20	0.14	8.24
	2.057	2.17	0.10	8.24
	2.571	2.15	0.07	8.24
	3.085	2.11	0.05	8.24
	3.599	2.08	0.03	8.24
	4.114	2.05	0.02	8.24
	4.628	2.03	0.02	8.24
	5.142	2.00	0.01	8.24

WQM 7.0 Effluent Limits

SWP Basin		Stream Code	Stream Name				
15C		59398	WEST BRANCH CONOCOHEAGUE CREEK				
ISL	Name	Permit Number	Dec. Flow (mgd)	Parameter	Eff. Limit 30-day Avg. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
57-129	Metal Township	PA0088666	0.040	ORCD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

