

**National Pollutant Discharge Elimination System (NPDES) Permit Fact Sheet
For Individual NPDES Permit Associated
With Noncoal (Industrial Mineral) Mining Activities**

1. Facility Information

Mining Permit Application No. 63192001

NPDES Application No. PA0278360

Site Name: Maggie Lynn Underground Mine

Date Application received: Dec. 20, 2021

Applicant: Neiswonger Construction, Inc.

Municipality: Deemston Borough

County: Washington

Type of Mining Activities:

Surface Mining

Underground Mining

Support Activities on Mine Site:

Asphalt Plant

Crushing/Screening/Sizing

Reclamation Fill

Other: _____

Type of Material Permitted for Mining:

Limestone

Sandstone

Shale

Dimensional Stone (ex. Bluestone)

Sand & Gravel

Igneous/Metamorphic Rock

Coal (incidental)

If Sand & Gravel or Sandstone is checked above what is the sand material being used for:

Construction Aggregate/Fill

Industrial (refractories, abrasives, glass making)

This application is for:

New source(s) (New permit utilizing existing ponds on two existing permits)

Renewal of existing source(s)

Revision/Modification

Permit History New permit

Original Permit issuance date: _____

Reissuance for Renewal dates: _____

Modification/Revision Dates: _____

Outfall	Latitude Longitude	Identifier	Type	Source	Frequency	Average Flow Rate	Design Flow Rate	Units (GPM/MGD)
001	39° 59' 54.8" -80° 02' 35.2"	Sedimentation Pond P-1	SWO	SW/PW/ PRCW	I/P	5.299	64.627	MGD
002	39° 59' 59.6" -80° 02' 23.7"	Sedimentation Pond P-2	SWO	SW	I/P	1.331	14.864	MGD

For the type of discharge use Stormwater Outfall (SWO) or Treatment Facility Outfall (TFO)

For frequency use Continuous (C), Intermittent (I), or Precipitation Dependent (P)

For Source use Stormwater (SW), Pit Water (PW), Process Water (PRCW), or Post-Mining Discharge (PMD)

Or

There is no point source discharge authorized for this facility. All water, including stormwater, will be contained within the site.

2. Background Summary

The Maggie Lynn Underground Mine permit application (SMP 63192001; PA0278360) is a new underground permit application with a surface activity area. The new Maggie Lynn Underground permit will consist of 359.1 total acres, with the surface site boundary consisting of 110.1 acres and the underground mining boundary consisting of 256.6 acres.

The proposed permit will encompass and replace the existing Neiswonger Construction, Inc. Maggie Lynn Quarry (SMP 63100401; PA0252034) which was recently renewed and re-issued July 18, 2023. The existing Maggie Lynn Quarry is an 80.1-acre non-coal surface mine permit (SMP) to mine the Benwood Limestone with no coal or acid-forming material mined or stored. Maggie Lynn Underground Outfall 001 is the permitted Outfall 001 from Sedimentation Pond P-1 under Maggie Lynn Quarry and will continue to be used as the main outfall for the Maggie Lynn Underground Mine permit.

In addition, the proposed permit will, at the request of the Department, incorporate a portion of the adjacent PA Coal Reclamation Hawkins Refuse Site (Hawkins) (SMP 63813210; PA0615129), because the applicant already uses the acreage. Hawkins is a refuse reprocessing SMP, however the plant was dismantled and refuse reprocessing ceased many years ago. Maggie Lynn Underground Outfall 002 is currently permitted as Outfall 003 on the Hawkins SMP. It receives runoff from a non-refuse spoil area.

The receiving stream for Outfall 001, Tenmile Creek, is designated as trout stocked fisheries (TSF) under Chapter 93, and flows into the Monongahela River. Monitoring Point (MP) 1 is located on Tenmile Creek upstream of Outfall 001, and MP-4 monitors Tenmile Creek downstream of Outfall 001. Outfall 001 receives surface water runoff from surrounding areas and collection ditches and pump lines that currently convey surface water from the two existing pits (sourced from highwall springs/precipitation). In addition, free drainage from the portals and/or pumping from the underground mine may occur after underground mining starts. An estimate of 0.5 gpm/acre contribution has been used to account for underground drainage reporting to Sedimentation Pond P-1 for sizing purposes. Outfall 001 currently discharges periodically in response to precipitation and pumping from the surface pits.

Maggie Lynn Underground Outfall 002 is currently permitted as Outfall 003 on the Hawkins SMP. The receiving stream for Outfall 002 is the reconstructed UNT "E" to Tenmile Creek. MP-14 is located on UNT "E" upstream of Outfall 002 with MP-42 located downstream of Outfall 002 on UNT "E". This outfall will receive surface runoff from a portion of the surface activities on the Maggie Lynn Underground noncoal permit. No discharge has been reported from Outfall 002 by the operator of the Hawkins SMP for the last five years, although a few dip samples have been collected. The last flowing sample was collected by the operator in March 2018.

Modeling of the discharges for Outfall 001 was conducted using the Department's Toxic Management Spreadsheet (TMS). For Outfall 002, the drainage-area (DA)-based WQBELs spreadsheet model was utilized in conjunction with the toxics screening spreadsheet, as well as the TMS due to the need for modeling total selenium. The last five years of data (second quarter 2019 through first quarter 2024) for Outfall 001 were utilized for both Outfalls 001 and 002 as Section D of the application indicates that Outfall 002 is substantially identical to Outfall 001. Also, Outfall 002 does not typically flow, therefore no discharging samples have been

collected. For Outfall 001, the quarterly stream monitoring data considered in TMS were from MP 1 on Tenmile Creek. For Outfall 002 the stream data used in the DA-based WQBELs and TMS models were from MP 14 on UNT "E" Tenmile Creek. The EPA Table III effluent characterization conducted for the recent Maggie Lynn Quarry renewal issued July 18, 2023 was also used to represent the EPA Table III parameters for the underground permit for both outfalls, however for total selenium all data from Outfall 001 collected under the existing quarry permit were included. This resulted in a need for modeling total selenium for Outfall 002, and therefore the TMS was implemented for 002. All modeling results are attached as well as USGS Stream Stats data. Permittee/applicant water quality data are in separate files included with the NPDES package.

Changes to the effluent limits during renewal or modification:

The proposed effluent limits for the Maggie Lynn Underground permit will differ from both the existing quarry permit and the existing Hawkins permit. For Outfall 001 the total iron and total manganese limits are lower, although total aluminum limits are the same as in the quarry permit. For Outfall 002, in-stream limits will be applicable for total iron, total manganese, and total aluminum based on both the DA-based WQBEL and TMS, whereas Outfall 003 in the Hawkins permit had higher total manganese limits. Monthly monitor and report requirements will be imposed for osmotic pressure (OP), and total selenium limits will be imposed for both Outfalls 001 and 002, based on total selenium data collected under the quarry permit.

3. Receiving Stream Information

Receiving Waters: Ten Mile Creek (at downstream MP-4)

Receives discharge from the following outfalls: 001

Drainage Area

(mi²): 133

Mean Flow (gpm): 77,648

Q₇₋₁₀ Flow (gpm): 1,508

Q₇₋₁₀ Basis: USGS StreamStats

Existing Use: Not Provided

Designated Use: TSF

Exceptions to

Use: None

Exceptions to Criteria: None

Assessment Status: Attaining for Aquatic Life

Cause(s) of Impairment Not Applicable (N/A)

Source(s) of

Impairment N/A

Receiving Waters: UNT "E" to Ten Mile Creek (at downstream 42)

Receives discharge from the following outfalls: 002

Drainage Area

(mi²): 0.2

Mean Flow (gpm): 108

Q₇₋₁₀ Flow (gpm): 0.47

Q₇₋₁₀ Basis: USGS StreamStats

Existing Use: Not Provided

Designated Use: TSF

Exceptions to

Use: None

Exceptions to Criteria: None

Assessment Status: UNT E not on CWA Integrated Report Map

Cause(s) of Impairment N/A

Source(s) of Impairment N/A

Total Maximum Daily Load (TMDL) N/A for Tenmile Creek (and its tributaries)

TMDL Name: N/A TMDL Status: N/A Approved on N/A

Special Protection Waters

Stream has an Existing or Designated Use of High Quality (HQ) or Exceptional Value (EV)
 Yes No

Stream has been petitioned for redesignation Existing or Designated Use of High Quality (HQ) or Exceptional Value (EV)
 Yes No

Date the stream designated as HQ or EV _____

Permit issued prior to stream designated as special protection Yes No

Have any changes occurred – to discharges, discharge configuration (new, additional, or increased discharge), or mining plan – that would suggest possible discharge implications been implemented after stream was upgraded to special protection?
Yes No

If No, then the currently permitted outfalls are compliant (i.e., no anti-degradation measures are required)

If the outfalls must meet the anti-degradation requirements, then provide a description of how the anti-degradation requirements will be met according to the Anti-Degradation Supplement:

Has an alternative to the required anti-degradation requirements of Chapter 93 been granted under the procedure relating to Social or Economic Justification? Yes No
If the receiving stream designated as High Quality have there been any approved alternatives to water quality standards?

There are no alternatives to standards since the NPDES permit will require that the discharges meet all applicable water quality standards.

Or

The NPDES permit applicant has requested an alternative to required standards of Chapter 93 under the procedure of Chapter 93 relating to Social or Economic Justification.

Nearest Downstream Public Water Supply Intake: Millsboro, PA (PWS 5630045)

Stream which the Public Water Supply intake draws from: Monongahela River (RM 64.8)

Distance from the Outfall: 5.9 miles

Drainage Area of stream at Public Water Supply intake: 4,950 square miles

Flow of the stream at the Public Water Supply intake: 10,800 cubic feet per second (mean annual)

4. TMDL Waste Load Allocation

- Not Applicable-Not a TMDL Stream
 Not Applicable-While there is a TMDL, the identified impairment is not mining related

5. Effluent Characterization

The following pollutants of concern have been identified based on the regulations and what is expected to be present in the discharge.

According to Pa. Code Title 25 Chapter 77, the Code of Federal Regulations Title 40 Part 436 Subparts B, C, & D, and the Developing NPDES Permits for Mining Activities Technical Guidance Document (563-2112-115) the only standard parameters of concern for noncoal mine operations are pH and total suspended solids, both of which will have effluent limits applied. Flow rate is a standard monitoring requirement for all outfalls and some outfalls that discharge large volumes of pumped pit water may have a flow limit applied.

If the noncoal operation will be mining within the coal measures where incidental coal and other acid forming materials may be encountered then the following additional constituents are pollutants of concern for noncoal mine operations: acidity, iron, manganese, and aluminum. These constituents will all either have an effluent limit applied or have a monitoring requirement. Monitoring requirements for specific conductivity and sulfate will also be applied to all outfalls.

Effluent Characterization Waivers:

Has the applicant requested a waiver for Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), Ammonia (NH₃), and Total Organic Carbon (TOC) because they are not anticipated to be present? Yes No
Is the Waiver granted? Yes No

Has the operator requested a waiver for the organic toxic pollutants (EPA Table II) because the operation has total gross sales of less than \$100,000 (1980 dollars) per year? Yes No
Is the Waiver granted? Yes No A waiver was not requested, however the applicant states that none of the EPA Table II constituents are expected to be in the discharges and the Department concurs.

Dioxins:

Has the applicant indicated that Dioxins may be present? Yes No

Other Toxic Pollutants:

Applications for noncoal mining operations are only required to submit data for all EPA Table III Pollutants that are expected to be present in the discharge. Are any of the EPA Table III constituents expected or identified as being present in the effluent?
Yes No

The following pollutants of concern require reasonable potential analysis to be conducted:

EPA Table III parameters.

Conventional and Nonconventional Pollutants:

Has the applicant indicated that any Conventional and Nonconventional Pollutants (EPA Table IV) are expected to be present in the discharge? Yes No

The following pollutants of concern require reasonable potential analysis to be conducted: Iron, manganese, aluminum, sulfate, and osmotic pressure.

If mining in the coal measures then iron, manganese, aluminum, and sulfate are expected to be present.

Oil & Grease:

If there are fuel and oil storage tanks on the mine site do the quantity and capacity of the tanks warrant applying a monitoring requirement for oil & grease to any outfalls on the permit? Yes No

If Yes, what outfalls were the monitoring requirements applied to and why: _____

If there is an asphalt plant located on the permit then Oil & Grease is expected to be present in the Erosion & Sedimentation Controls that receive drainage from the area of the asphalt plant. A monitor only requirement for Oil & Grease will be applied to those outfalls. N/A

If Yes, list the constituents: N/A

Toxic Pollutants and Hazardous Substances:

Has the applicant indicated that any Toxic Pollutants and Hazardous Substances (EPA Table V) are expected to be present in the discharge? Yes No

If Yes, list the constituents: _____

If no, the applicant must include a justification or documentation verifying their response: The applicant states that none of the EPA Table V constituents are expected to be in the discharges. The application states that to their knowledge no existing tanks or pre-existing tanks have had any materials associated with Appendix B of the application.

Thermal Impacts:

Are there any anticipated thermal impacts from the discharges: Yes No

Temperature of the discharge is a standard monitoring parameter for all discharges regardless of whether a thermal impact is anticipated.

Conductivity/TDS/Osmotic Pressure RPA

- Discharges from this mine are not anticipated to exceed an osmotic pressure of 50 milliosmoles per kilogram (mOsm/kg) and will not adversely affect the receiving streams. Explain: It is not expected that osmotic pressure (OP) will exceed 50 mOsm/kg, however, monitor and report requirements will be added to the permit, based on the following.

OP limits were considered for both outfalls using Outfall 001 data over the last permit cycle for the existing quarry (second quarter 2019 through first quarter 2024). The

Department's "Policy and Procedure for NPDES Permitting of Discharges of Total Dissolved Solids (TDS)" (TGD 385-2100-002) guidance includes this formula: $OP (mOsm/kg) * 34 = TDS (mg/L)$. OP (mOsm/kg) can therefore be estimated as total dissolved solids (TDS) (mg/l)/34.

TDS has been analyzed at the existing Maggie Lynn Quarry Outfall 001 since 2020 by the permittee. The highest TDS analyzed when the outfall was discharging is given in the table below.

<u>Outfall</u>	<u>Date</u>	<u>Flow (gpm)</u>	<u>Max TDS* (mg/l)</u>	<u>Max OP Est (mOsm/kg)</u>
<u>001</u>	<u>6/28/22</u>	<u>75</u>	<u>1228</u>	<u>36.12</u>

The TMS model indicated RP for OP based on the discharge concentration exceeding 50% of the WQBEL, however this was utilizing an OP estimate. Monthly OP monitoring will be assigned for both outfalls in order to better evaluate RP in the future, as Outfall 002 is considered substantially identical to Outfall 001.

Public Water Supply Analysis:

Pa. Code Title 25 Sections 93.7 and 96.3(d) specify that human health criteria for Phenols, Fluoride, Nitrite/Nitrate, Total Dissolved Solids, Chloride and Sulfate only be applied at public water supply (PWS) intakes. Of those pollutants only total dissolved solids and sulfate may normally be expected to be present in effluent from some noncoal mining operations at concentrations approaching or exceeding their respective instream criterion that applies at the PWS intake

Based on the distance to the nearest downstream public water supply and the drainage area of the stream which the PWS intake draws from is there potential for discharges on this mine site to impact the water quality at the intake: Yes No

The closest downstream water supply intake is located at Tri County Joint Municipal Authority, located at Millsboro (PWS ID 5630045), on the Monongahela River. This PWS is approximately 5.9 miles downstream from Outfall 001. The drainage area at the intake is about 4,950 square miles. The total mine area is 359.1 acres (0.561 square miles), approximately 0.0113% of the drainage area of the intake.

If Yes, have concentrations been measured or are they expected be greater than 50% of their respective instream criterion for the following pollutants?

- Total Dissolved Solids (Instream Criterion 500 mg/L)
- Sulfate (Instream Criterion 250 mg/L)
- Other Constituent: _____ (Instream Criterion _____ mg/L)

If any of the boxes above are checked then further reasonable potential analysis should be conducted for those pollutants.

Is it known or expected that gypsum mineral could be encountered during mining?

Yes No

If Yes, dissolution of gypsum (Calcium Sulfate) may result in elevated sulfate concentrations and a monitoring requirement for sulfate should be applied if a downstream public water supply may be impacted.

For the pollutants of concern identified above the applicant submitted data which complies with the effluent characterization requirements in 40 CFR 122.21(g)(7) and 122.26(c)(1)(E). The effluent characterization data from each pollutant of concern was compared to the applicable water quality standards to determine if each pollutant has a reasonable potential to degrade the receiving stream.

Effluent Characterization for a New Permit Application:

Applicant submitted actual data from the existing permit that will be replaced with a new permit. ~~estimated data from another mine site.~~ The NPDES permit is new in the sense that it will combine two existing outfalls under a single new permit, however, the applicant has been determined by U.S. EPA and PADEP to not be a new discharger, nor is the facility considered a new source. Applicant submitted data from Outfall 001 (Sedimentation Pond P-1) for the existing Maggie Lynn Quarry permit. The Maggie Lynn Quarry permit will be replaced by the Maggie Lynn Underground Mine permit. The applicant has indicated that Outfall 001 is representative of Outfall 002 (Hawkins SMP Outfall 003) as well.

Permit Associated with ~~Estimate~~ Sample(s): 63100401/Maggie Lynn Quarry
Outfall(s) where estimate sample(s) was collected: 001
Sample Date: 12/15/2022 and 2/15/23 for total selenium resampling
The Maggie Lynn Quarry Outfall 001 from Sedimentation Pond P-1 will be used as the Maggie Lynn Underground Mine outfall as well.

Review of the estimate effluent characterization data indicates that the following pollutants of concern require reasonable potential analysis to be conducted:

Reasonable Potential Analysis (RPA) was conducted on all EPA Table III parameters in the TMS model, resulting in no RP, with the exception of total selenium. Total antimony and total arsenic were detected, however since the detections were <10% of WQBEL, they were not found to have RP to exceed criteria.

The December 14, 2022 effluent characterization originally indicated a concentration of total selenium of 32.2 ug/l. Subsequent resampling occurred on February 15, 2023 and indicated that total selenium was non-detect and the existing quarry NPDES permit was issued with a quarterly monitor and report requirement. The Maggie Lynn Underground application utilized the non-detect in Item 27 of the application, but also presented additional total selenium data that had been collected, which included a July 24, 2023 sample in which 29 ug/l total selenium was detected. Therefore, total selenium is not considered to be anomalous. A total selenium limit has been imposed for Outfalls 001 and 002. For Outfall 002 the limit is consistent with approved target quantitation limits (TQLs).

A table attached with this fact sheet lists the reported estimate concentrations and the applicable water quality criteria that they were screened against. The Department's TMS was used to screen EPA Table III parameters against the most stringent water quality criteria from Chapter 93.

Effluent Characterization for a Renewal Application: N/A – See above. New permit, but not a new discharger or new source.

Applicant submitted data from a discharging outfall on this permit? Yes No

Outfall(s) where sample(s) was collected: _____

Sample Date: _____

Is the effluent characterization data from the outfall(s) expected to be representative of other outfalls of the same type on the permit: Yes No

For all pollutants of concern, were the method detection limits reported in the effluent characterization samples less than applicable water quality standards: Yes No

Review of the effluent characterization data indicates that the following pollutants of concern require reasonable potential analysis to be conducted:

A table attached with this fact sheet lists the reported concentrations and the applicable water quality criteria and quantitation limits that they were screened against.

Effluent Characterization Review Questions:

Is the pit water and/or raw treatment water acidic indicating that discharge monitoring for trace metals is needed? Yes No

Has the Mine Inspector identified any concerns regarding the water quality of the discharge or the receiving stream? Yes No

Has review of monitoring data indicated that effluent limits or monitoring requirements are needed for pollutants? Yes No The effluent characterization used in TMS modeling for the new permit has indicated a need for effluent limits for total selenium.

6. Aquatic Life Water Narrative Quality Standard

Summarize the evaluation and measures taken to prevent a violation of the Aquatic Life Narrative Water Quality Standard: Periodic inspections will be conducted and discharges visualized for observations of narrative criteria.

The NPDES permit contains the following conditions to address violations of the narrative water quality standards:

The discharger may not discharge floating materials, scum, sheen, or substances that result in deposits in the receiving water. Except as provided in the permit, the discharger may not discharge foam, oil, grease, or substances that produce an observable change in the color, taste, odor, or turbidity of the receiving water. [25 Pa. Code § 92.41(c)]

The permittee may not discharge substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. [25 Pa. Code § 93.6(a)]

Flocculant Use:

Has the applicant requested to use a flocculant to meet effluent limits? Yes No

If Yes, What product are they proposing to utilize? Enviro-floc CF-1

Has the PA Fish & Boat Commission approved the use of this flocculant? Yes No

The Flocculant Plan has been included as an attachment to Module 13.

7. Calculations and explanation of effluent limits

No Discharge of Effluent: N/A

- The following outfalls will have no discharge of effluent: _____
or
 All outfalls will have no discharge of effluent.

Outfalls with no permitted discharge of effluent will have a maximum flow limit of zero.

Effluent Limits for Point Source Discharges:

Note: Maximum Daily and Instantaneous Maximum (IMAX) limits are determined by multiplying the average monthly limits by 2.0 and 2.5 respectively.

Technology Based Effluent Limitations:

Mine Drainage Treatment (Dewatering of Pit Water and Process Water) Discharges:

Discharges resulting from dewatering of pit water and process water from noncoal mines are subject to the following technology based effluent limitations, which are based on Pa. Code Title 25 Chapter 77, the Code of Federal Regulations Title 40 Part 436 Subparts B, C, & D, and the Developing NPDES Permits for Mining Activities Technical Guidance Document (563-2112-115). The Technology-Based Effluent Limits are different depending on what type of material is being mined.

Technology-Based Effluent Limits for discharges resulting from dewatering of pit water and process water on noncoal mine permits producing Crushed Stone, Construction Sand & Gravel, Dimensional Stone, and igneous/metamorphic rock:

Parameter	Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Maximum
All Discharges					
Total Suspended Solids (mg/L)	-	35.0	70.0	90.0	-
pH (S.U.)	6.0	-	-	-	9.0

Technology-Based Effluent Limits for discharges resulting from dewatering of pit water and process water on noncoal mine permits producing Industrial Sand (ex. for refractories, abrasives, and glass making):

Parameter	Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Maximum
All Discharges					
Total Suspended Solids (mg/L)	-	25.0	45.0	N/A	-
pH (S.U.)	6.0	-	-	-	9.0

Stormwater Discharges:

The following limits only apply to outfalls of the facilities that only receive stormwater runoff. There must be no comingling with process or pit water.

Discharges of stormwater from noncoal mines are subject to the following technology based effluent limitations, which are based on Pa. Code Title 25 Chapter 77. The Department also applies Total Suspended Solids (TSS) limits to dry weather discharges from stormwater control facilities. An alternative Settle Solids effluent limit applies instead of the TSS limit in response to precipitation events. The alternative precipitation limits are the same that are applied to stormwater facilities on coal permits in accordance with Pa. Code Title 25 Chapter 87.102. The alternative precipitation limits only apply during a precipitation event and for 24 hours afterwards. The alternative precipitation limits do not apply if any WQBELs are required for a stormwater outfall (see next section).

Parameter	Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Maximum
Dry Weather Discharges					
Total Suspended Solids (mg/L)	-	35.0	70.0	90.0	-
pH (S.U.)	6.0	-	-	-	9.0
Precipitation Event Less Than or Equal to 10 year/24 Hour Precipitation Event					
Settleable Solids (mL/L)	-	-	-	0.5	-
pH (S.U.)	6.0	-	-	-	9.0
Precipitation Event Greater than 10 year/24 Hour Precipitation Event					
pH (S.U.)	6.0	-	-	-	9.0

Water Quality Based Effluent Limitations:

- No Water Quality-Based Effluent Limits (WQBELs) required evaluation for this permit.
 Or
 Water Quality-Based Effluent Limits (WQBELs) were evaluated using the following models:
 Flow-based mass balance calculation (Toxics Management Spreadsheet)
 Drainage area-based mass balance calculation (Water Quality Spreadsheet)
 Other:

Based upon the modeling water quality based effluent limitations are required for the constituents in the table below:

The following WQBELs apply to Outfall(s): <u>Tenmile Creek</u> The following WQBELs apply to <u>001</u>			
Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum
Total Iron (mg/L)	1.55	3.10	3.87
Total Manganese (mg/L)	1.0	2.0	2.5
Total Aluminum (mg/L)	0.75	0.75	0.75
Total Selenium (ug/L)	5.16	10.32	12.9
Osmotic Pressure (mOsm/kg)	Report		

The following WQBELs apply to Outfall(s): <u>UNT "E" Tenmile Creek</u> The following WQBELs apply to <u>002</u>			
Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum
Total Iron (mg/L)	1.5	3.0	3.7
Total Manganese (mg/L)	1.0	2.0	2.5
Total Aluminum (mg/L)	0.75	0.75	0.75
Total Selenium (ug/L)	5.0	10.0	12.5

Total Maximum Daily Load Limitations:

A TMDL does not apply to any of the receiving streams of this permit or, if a TMDL does apply, it is not mining related. No effluent limits were calculated based on a TMDL.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the permit. These limits reflect the most stringent limitations amongst the technology, water quality, and TMDL limitations.

The following effluent limits apply to the following Stormwater Control Outfall: 001						
Parameter (units in mg/L unless otherwise noted)	Effluent Limitations				Monitoring Requirements	
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
All Weather Discharges						
pH (S.U.)	6.0	-	-	9.0	2/month	Measured/ Grab
Acidity (mg/L)	-	-	-	Report	2/month	Grab
Net Alkalinity (mg/L)	0.0	-	-	Report	2/month	Calculate
Total Alkalinity (mg/L)	-	-	-	Report	2/month	Grab
Total Iron (mg/L)	-	1.55	3.10	3.87	2/month	Grab
Total Manganese (mg/L)	-	1.0	2.0	2.5	2/month	Grab
Total Aluminum (mg/L)	-	0.75	0.75	0.75	2/month	Grab
Total Suspended Solids (mg/L)	-	35.0	70.0	90.0	2/month	Grab
Total Selenium (ug/L)	-	5.16	10.32	12.9	2/month	Grab
Sulfate (mg/l)	Report				2/month	Grab
Osmotic Pressure (mOs/kg)	Report				Monthly	Grab
Total Dissolved Solids (mg/L)	Report				2/month	Grab
Specific Conductance (umhos/cm)	Report				2/month	Measured
Temperature (°C)	Report				2/month	Measured
Flow (gpm)	Report				2/month	Measured

The following effluent limits apply to the following Stormwater Control Outfall: 002						
Parameter (units in mg/L unless otherwise noted)	Effluent Limitations				Monitoring Requirements	
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
All Weather Discharges						
pH (S.U.)	6.0	-	-	9.0	2/month	Measured/ Grab

The following effluent limits apply to the following Stormwater Control Outfall: 002						
Parameter (units in mg/L unless otherwise noted)	Effluent Limitations				Monitoring Requirements	
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
Acidity (mg/L)	-	-	-	Report	2/month	Grab
Net Alkalinity (mg/L)	0.0	-	-	Report	2/month	Calculate
Total Alkalinity (mg/L)	-	-	-	Report	2/month	Grab
Total Iron (mg/L)	-	1.5	3.0	3.7	2/month	Grab
Total Manganese (mg/L)	-	1.0	2.0	2.5	2/month	Grab
Total Aluminum (mg/L)	-	0.75	0.75	0.75	2/month	Grab
Total Suspended Solids (mg/l)	-	35.0	70.0	90.0	2/month	Grab
Total Selenium (ug/L)	-	5.0	10.0	12.5	2/month	Grab
Sulfate (mg/l)	Report				2/month	Grab
Osmotic Pressure (mOs/kg)	Report				Monthly	Grab
Total Dissolved Solids (mg/L)	Report				2/month	Grab
Specific Conductance (umhos/cm)	Report				2/month	Measured
Temperature (°C)	Report				2/month	Measured
Flow (gpm)	Report				2/month	Measured

8. Basis for Permit Conditions

This NPDES permit contains the mandated standard conditions as required in 40 CFR 122.41.

For new Permits, the following conditions are included in the permit to document the effluent characterization requirements:

The permittee shall provide analysis of samples collected from the mine drainage treatment outfalls no later than two years after the initial discharge of each facility in compliance with 40 CFR 122.21(k)(5)(vi). Specifically, sampling results are required for the pollutants listed in 40 CFR 122, Appendix D, Table III (Report all), and for Appendix D Tables II and IV for those that are expected to be present. This quantitative data requirement is subject to the small business exemption at 40CFR 122.21(g)(8) for Table II.

The permittee shall provide analysis of samples collected from erosion and sedimentation control outfalls within two years of the initial discharge of each facility in compliance with 40 CFR 122.26(c)(1)(i)(G). Specifically, sampling results are required for the pollutants listed in 40 CFR 122, Appendix D, Table III (Report All), and for Appendix D, Tables II and IV for those that are expected to be present and pH, specific conductivity, temperature, alkalinity, acidity, iron, manganese, aluminum, sulfate, chloride, settleable solids, total dissolved solids, oil and grease, BOD5, COD, Kjeldahl nitrogen, and nitrate plus nitrite nitrogen. This quantitative data requirement is subject to the small business exemption at 40 CFR 122.21(g)(8) for Table II.

In addition, the permit contains the following conditions:

- Flocculant is permitted for use only in accordance with the Flocculant Addition Plan provided as an attachment to Module 13, as approved by the Pennsylvania Fish and Boat Commission (PFBC).

These additional conditions are required because: This will be included as a reference to the approved operational safeguard for flocculant use.

9. Public Review

Notification of the submission of this NPDES permit application was published by the applicant in a newspaper of general circulation in the area where the NPDES permit will be or is located.

A Notice of Draft NPDES Permit has been published in the PA Bulletin. The draft NPDES Bulletin Notice includes the list of proposed outfalls and their effluent limits.

Further information regarding this application may be obtained by contacting Diane Roote, New Stanton DMO, 131 Broadview Road, New Stanton, PA 15672, 724-925-5500.

Public participation comments and request for public hearings:

The public may participate by providing written comments during the comment period, requesting a public hearing, attending a public hearing or providing testimony at a public hearing.

Persons wishing to comment on this permit application should submit a statement to the Department at the address listed. Comments received within the comment period will be considered in the final determination regarding the NPDES permit application. Comments must include the name, address and telephone number of the writer and a concise statement to inform the Department of the exact basis of a comment and the relevant facts upon which it is based.

The Department will accept requests or petitions for a public hearing on this NPDES permit application, as provided in 25 Pa. Code § 92.61. The request or petition for a public hearing shall be filed within the comment period and shall contain the name, address, telephone number and the interest of the party filing the request and shall state the reasons why a hearing is warranted. If a hearing is scheduled, a notice of the hearing on the NPDES permit application will be published in the *Pennsylvania Bulletin* and a newspaper of general circulation within the relevant geographical area.

Unless otherwise noted in this fact sheet, no variances, waivers, or alternatives to required standards have been granted.

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	Water Quality Spreadsheet (WQSS)/DA-Based WQBELs (see Attachment)
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (TMS) (see Attachment)
<input type="checkbox"/>	TMDL Report:
<input checked="" type="checkbox"/>	USGS StreamStats Report (see Attachment)
<input type="checkbox"/>	TMDL Wasteload Loading to Concentration Calculations (see Attachment)
<input type="checkbox"/>	Anti-degradation Supplement for Mining Permits
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 7/11.

<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input checked="" type="checkbox"/>	Developing National Pollutant Discharge Elimination System (NPDES) Permits for Mining Activities Technical Guidance Document (563-2112-115)
<input checked="" type="checkbox"/>	Other: <u>Policy and Procedure for NPDES Permitting of Discharges of Total Dissolved Solids (TDS) (TGD 385-2100-002), PADEP (2011)</u>
<input type="checkbox"/>	Other:

Discharge Information

Instructions

Discharge

Stream

Facility: **Maggie Lynn Underground Mine**

NPDES Permit No.: **PA0278360**

Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste**

Wastewater Description: **Stormwater/Pit Water/UG Mine Drainage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q ₇₋₁₀	Q _h
64.627	100	8.26						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L									
	Chloride (PWS)	mg/L									
	Bromide	mg/L									
	Sulfate (PWS)	mg/L	706.8								
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L		3290							
	Total Antimony	µg/L		2.5							
	Total Arsenic	µg/L		1.8							
	Total Barium	µg/L									
	Total Beryllium	µg/L	<	1							
	Total Boron	µg/L									
	Total Cadmium	µg/L	<	0.2							
	Total Chromium (III)	µg/L	<	1							
	Hexavalent Chromium	µg/L									
	Total Cobalt	µg/L									
	Total Copper	µg/L	<	1							
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	<	5							
	Dissolved Iron	µg/L									
	Total Iron	µg/L		2890							
	Total Lead	µg/L	<	1							
	Total Manganese	µg/L		900							
	Total Mercury	µg/L	<	0.001							
	Total Nickel	µg/L		1							
	Total Phenols (Phenolics) (PWS)	µg/L	<	5							
	Total Selenium	µg/L		32.2							
	Total Silver	µg/L	<	0.2							
Total Thallium	µg/L	<	0.2								
Total Zinc	µg/L	<	5								
Total Molybdenum	µg/L										
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									

Stream / Surface Water Information

Maggie Lynn Underground Mine, NPDES Permit No. PA0278360, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: Tenmile Creek

No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi ²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	040285	5.79	810	133			Yes
End of Reach 1	040285	5.77	805	133.01			Yes

Q₇₋₁₀

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	5.79	0.1	3.36									100	7		
End of Reach 1	5.77	0.1	3.36												

Q_h

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	5.79														
End of Reach 1	5.77														

Model Results

Maggie Lynn Underground Mine, NPDES Permit No. PA0278360, Outfall 001

Instructions

Results

RETURN TO INPUTS

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PRINT

All Inputs Results Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	775	
Total Antimony	0	0		0	1,100	1,100	1,137	
Total Arsenic	0	0		0	340	340	351	Chem Translator of 1 applied
Total Cadmium	0	0		0	2.014	2.13	2.2	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	1,864	Chem Translator of 0.316 applied
Total Copper	0	0		0	13.439	14.0	14.5	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	84.4	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.7	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	485	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	3.91	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	67.2	
Total Zinc	0	0		0	117.180	120	124	Chem Translator of 0.978 applied
Osmotic Pressure	0	0		0	50	50.0	51.7	

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	

Total Antimony	0	0		0	220	220	227	
Total Arsenic	0	0		0	150	150	155	Chem Translator of 1 applied
Total Cadmium	0	0		0	0.246	0.27	0.28	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.115	86.2	89.1	Chem Translator of 0.86 applied
Total Copper	0	0		0	8.956	9.33	9.64	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	1,550	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	3.29	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.94	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	53.9	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.16	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	13.4	
Total Zinc	0	0		0	118.139	120	124	Chem Translator of 0.986 applied
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

THH CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.79	
Total Arsenic	0	0		0	10	10.0	10.3	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,034	
Total Mercury	0	0		0	0.050	0.05	0.052	
Total Nickel	0	0		0	610	610	631	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.25	
Total Zinc	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

CRL CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits			Units	Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX				
Total Aluminum	404	418	750	775	775	µg/L	750	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	5.79	THH	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	Report	Report	Report	Report	Report	µg/L	10.3	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	836	1,304	1,550	2,419	3,876	µg/L	1,550	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	557	869	1,034	1,613	2,584	µg/L	1,034	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Selenium	2.78	4.34	5.16	8.05	12.9	µg/L	5.16	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Osmotic Pressure	XXX	XXX	50.0	51.7	51.7	mOs/kg	50.0	AFC	Discharge Conc ≥ 50% WQBEL (RP)

Other Pollutants without Limits or Monitoring

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., ≤ Target QL).

Pollutants	Governing WQBEL	Units	Comments
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	N/A	N/A	Discharge Conc < TQL
Total Copper	N/A	N/A	Discharge Conc < TQL

Total Cyanide	N/A	N/A	No WQS
Total Lead	N/A	N/A	Discharge Conc < TQL
Total Mercury	N/A	N/A	Discharge Conc < TQL
Total Nickel	53.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Silver	3.78	µg/L	Discharge Conc < TQL
Total Thallium	0.25	µg/L	Discharge Conc < TQL
Total Zinc	120	µg/L	Discharge Conc < TQL

DRAINAGE AREA-BASED EFFLUENT LIMITATIONS FOR OUTFALL 002 (SP-2) AKA Hawkins 003

Application Number: PA0278360
 Company: Neiswonger Construction, Inc.
 Operation: Maggie Lynn Underground Mine
 Outfall: 002 (SP-2) AKA Hawkins 003
 Receiving Stream: UNT E Tenmile Creek
 Stream Classification: TSF
 Latitude and Longitude of Outfall: 39° 59' 59.6" -80° 02' 23.7"
 Stream Background Monitoring Point(s): 14 (2Q19 thru 1Q24)

Parameter	Water Quality Standards		Technology Limits		Stream Background	
	Average	Maximum	Average	Maximum	Average	Maximum
Iron (mg/L)	1.5	3.0	3.0	6.0	0.28	0.63
Manganese (mg/L)	1.0	2.0	2.0	4.0	0.08	0.17
Aluminum (mg/L)	0.75	0.75	2.0	4.0	0.22	0.89
Osmotic Pressure (mOs/kg)	50	50	-	-	24.61	27.75

Minimum Required Dilution Ratios (representative of Qstream / Qdischarge)

The general formula for computing the minimum required dilution ratio (X) is:

$$X = (\text{Discharge Conc.} - \text{Standard}) / (\text{Standard} - \text{Background Conc.})$$

Parameter	Dilution Ratio (avg)	Dilution Ratio (max)
Iron	1.23	1.27
Manganese	1.09	1.09
Aluminum	2.36	Background >= Criterion

Ratios are (Qstream / Qdischarge) where Qdischarge = 1

Available Dilution Ratio (represents Qstream / Qdischarge)

To calculate the available dilution ratio the following assumptions have been made:

- 50% runoff from the unaffected area
- 100% runoff from the disturbed area
- Unaffected area equals the watershed drainage area minus the total disturbed area.
- Pit and spoil drainage acreage uses a multiplier to reflect increased contributions from groundwater

Surface Runoff Areas

Watershed Drainage Area [WDA] (acres):	89.6	MP 14 StreamStats
Outfall Runoff Area [ORA] less PSA (acres):	0	8.8-8.8 ac (Ex. 12)
Total Disturbed Area in Watershed [TDA] (acres):	89.6	Spoil Disposal
Pit and Spoil Area [PSA] (acres):	8.8	Multiplier: 2

$$\text{The Available Dilution Ratio} = [0.5 * (\text{WDA} - \text{TDA})] / [(\text{PSA} * 2.0) + (\text{ORA} * 1.0)]$$

The Available Dilution Ratio is: 0.00

Effluent Limitations

The general formula for computing the water quality-based effluent limitation is:

$$\text{Water Quality Limit} = (X [\text{Available}] * \text{Standard}) + (\text{Standard}) - (X [\text{Available}] * \text{Background Conc.})$$

Technology Limits are imposed when there is enough dilution.

Recommended Limits Parameter	Monthly Average		Daily Maximum	
	Enough Dilution?	Impose	Enough Dilution?	Impose
Iron (mg/L)	No	Water Quality	No	Water Quality
		1.50		3.00
Manganese (mg/L)	No	Water Quality	No	Water Quality
		1.00		2.00
Aluminum (mg/L)	No	Water Quality	No	Water Quality
		0.75		0.75
Osmotic Pressure (mOs/kg)	-	50.00	-	100.00

Discharge Information

Instructions **Discharge** Stream

Facility: **Maggie Lynn Underground Mine** NPDES Permit No.: **PA0278360** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Stormwater Drainage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q ₇₋₁₀	Q _h
14.864	100	7.03						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L									
	Chloride (PWS)	mg/L									
	Bromide	mg/L									
	Sulfate (PWS)	mg/L	706.8								
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L		3290							
	Total Antimony	µg/L		2.5							
	Total Arsenic	µg/L		1.8							
	Total Barium	µg/L									
	Total Beryllium	µg/L	<	1							
	Total Boron	µg/L									
	Total Cadmium	µg/L	<	0.2							
	Total Chromium (III)	µg/L	<	1							
	Hexavalent Chromium	µg/L									
	Total Cobalt	µg/L									
	Total Copper	µg/L	<	1							
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	<	5							
	Dissolved Iron	µg/L									
	Total Iron	µg/L		2890							
	Total Lead	µg/L	<	1							
	Total Manganese	µg/L		900							
	Total Mercury	µg/L	<	0.001							
	Total Nickel	µg/L		1							
	Total Phenols (Phenolics) (PWS)	µg/L	<	5							
Total Selenium	µg/L		32.2								
Total Silver	µg/L	<	0.2								
Total Thallium	µg/L	<	0.2								
Total Zinc	µg/L	<	5								
Total Molybdenum	µg/L										
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									

Stream / Surface Water Information

Maggie Lynn Underground Mine, NPDES Permit No. PA0278360, Outfall 002

Instructions **Discharge** Stream

Receiving Surface Water Name: Tenmile Creek

No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi ²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	040285	0.18	865	133			Yes
End of Reach 1	040285	0.02	812	133.01			Yes

Q₇₋₁₀

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.18	0.1	0.000805									100	7		
End of Reach 1	0.02	0.1	0.00105												

Q_h

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.18														
End of Reach 1	0.02														

Model Results

Maggie Lynn Underground Mine, NPDES Permit No. PA0278360, Outfall 002

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

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All Inputs Results Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	750	
Total Antimony	0	0		0	1,100	1,100	1,100	
Total Arsenic	0	0		0	340	340	340	Chem Translator of 1 applied
Total Cadmium	0	0		0	2.014	2.13	2.13	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	1,803	Chem Translator of 0.316 applied
Total Copper	0	0		0	13.439	14.0	14.0	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	81.6	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.65	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	469	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	3.78	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	65.0	
Total Zinc	0	0		0	117.180	120	120	Chem Translator of 0.978 applied
Osmotic Pressure	0	0		0	50	50.0	50.0	

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	

Total Antimony	0	0		0	220	220	220	
Total Arsenic	0	0		0	150	150	150	Chem Translator of 1 applied
Total Cadmium	0	0		0	0.246	0.27	0.27	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.115	86.2	86.2	Chem Translator of 0.86 applied
Total Copper	0	0		0	8.956	9.33	9.33	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	1,500	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	3.18	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.91	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	52.2	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	4.99	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	13.0	
Total Zinc	0	0		0	118.139	120	120	Chem Translator of 0.986 applied
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

THH CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.6	
Total Arsenic	0	0		0	10	10.0	10.0	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,000	
Total Mercury	0	0		0	0.050	0.05	0.05	
Total Nickel	0	0		0	610	610	610	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.24	
Total Zinc	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

CRL CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	93.0	93.0	750	750	750	µg/L	750	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	5.6	THH	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	Report	Report	Report	Report	Report	µg/L	10.0	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	186	290	1,500	2,340	3,750	µg/L	1,500	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	124	193	1,000	1,560	2,500	µg/L	1,000	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Selenium	0.62	0.96	4.99	7.78	12.5	µg/L	4.99	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Osmotic Pressure	XXX	XXX	50.0	50.0	50.0	mOs/kg	50.0	AFC	Discharge Conc ≥ 50% WQBEL (RP)

Other Pollutants without Limits or Monitoring

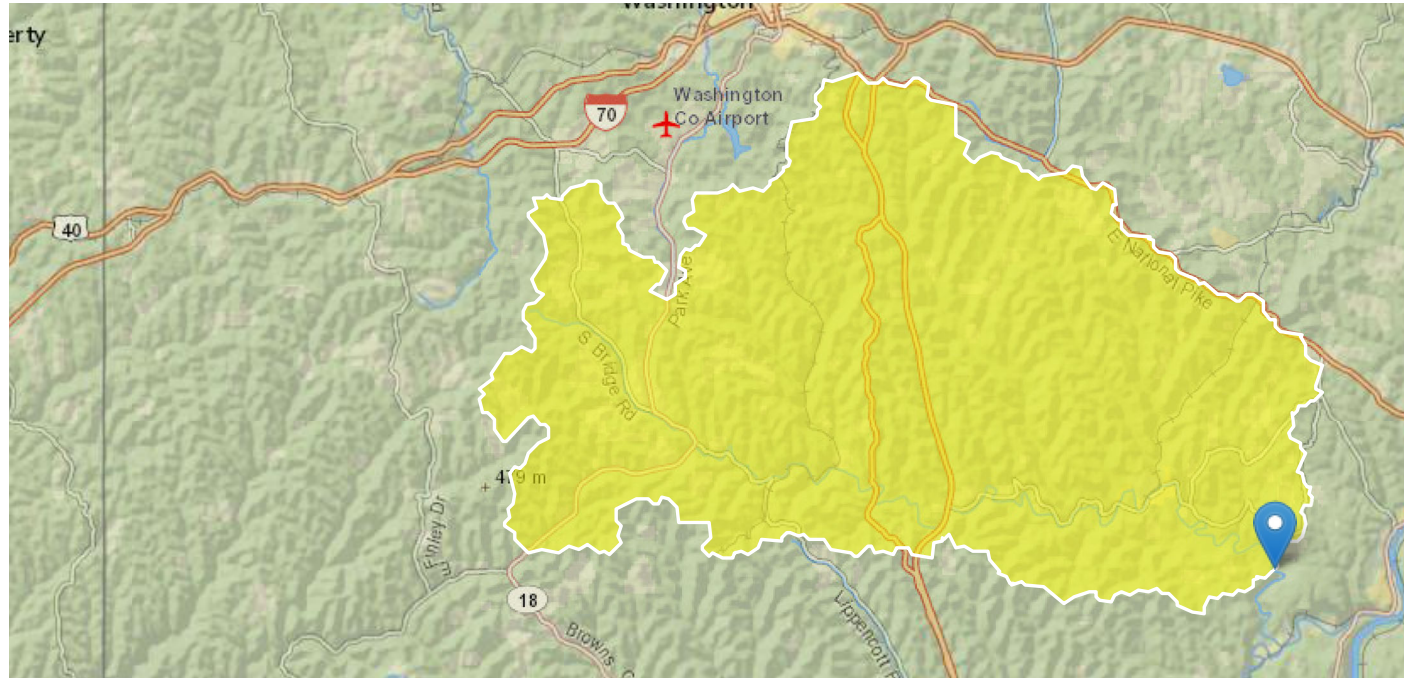
The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., ≤ Target QL).

Pollutants	Governing WQBEL	Units	Comments
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	N/A	N/A	Discharge Conc < TQL
Total Copper	N/A	N/A	Discharge Conc < TQL

Total Cyanide	N/A	N/A	No WQS
Total Lead	N/A	N/A	Discharge Conc < TQL
Total Mercury	N/A	N/A	Discharge Conc < TQL
Total Nickel	52.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Silver	3.78	µg/L	Discharge Conc < TQL
Total Thallium	0.24	µg/L	Discharge Conc < TQL
Total Zinc	120	µg/L	Discharge Conc < TQL

StreamStats Report 001 Pt of Discharge Tenmile Creek, Maggie Lynn Underground

Region ID: PA
Workspace ID: PA20240531151859319000
Clicked Point (Latitude, Longitude): 39.99815, -80.04351
Time: 2024-05-31 11:19:20 -0400



[+ Collapse All](#)

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	133	square miles
ELEV	Mean Basin Elevation	1165	feet
FOREST	Percentage of area covered by forest	54.7125	percent
PRECIP	Mean Annual Precipitation	39	inches
URBAN	Percentage of basin with urban development	3.2974	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	133	square miles	2.26	1400

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	1165	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 (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	7.2	ft ³ /s	43	43
30 Day 2 Year Low Flow	11	ft ³ /s	38	38
7 Day 10 Year Low Flow	3.36	ft ³ /s	66	66
30 Day 10 Year Low Flow	4.97	ft ³ /s	54	54
90 Day 10 Year Low Flow	7.96	ft ³ /s	41	41

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/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	133	square miles	2.26	1720
ELEV	Mean Basin Elevation	1165	feet	130	2700
PRECIP	Mean Annual Precipitation	39	inches	33.1	50.4
FOREST	Percent Forest	54.7125	percent	5.1	100
URBAN	Percent Urban	3.2974	percent	0	89

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

PIL: 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
Mean Annual Flow	173	ft ³ /s	12	12

Annual 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/>)

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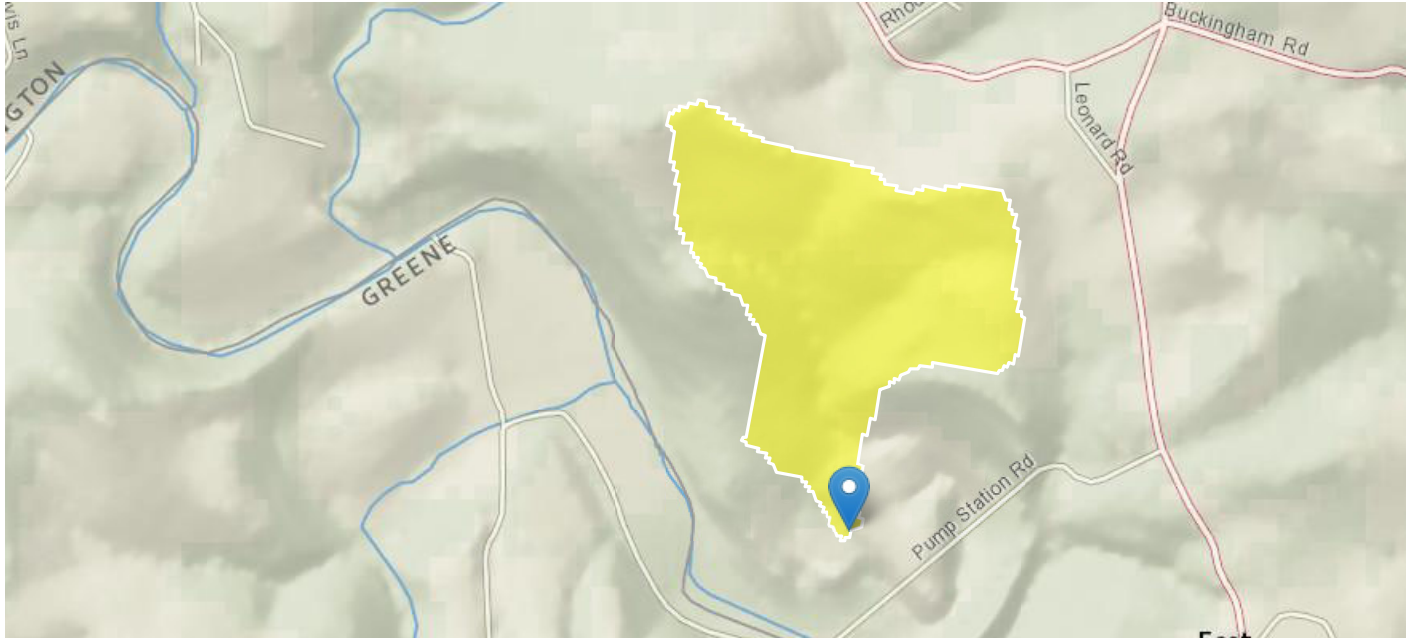
Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report 002 Point of Discharge UNT E Tenmile Creek, Maggie Lynn Underground

Region ID: PA
 Workspace ID: PA20240610135549499000
 Clicked Point (Latitude, Longitude): 39.99987, -80.04006
 Time: 2024-06-10 09:56:09 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.16	square miles
ELEV	Mean Basin Elevation	1074	feet
FOREST	Percentage of area covered by forest	52.975	percent
PRECIP	Mean Annual Precipitation	39	inches
URBAN	Percentage of basin with urban development	0.3839	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	2.26	1400
ELEV	Mean Basin Elevation	1074	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00317	ft ³ /s
30 Day 2 Year Low Flow	0.00662	ft ³ /s
7 Day 10 Year Low Flow	0.000805	ft ³ /s
30 Day 10 Year Low Flow	0.00196	ft ³ /s
90 Day 10 Year Low Flow	0.00427	ft ³ /s

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/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	2.26	1720
ELEV	Mean Basin Elevation	1074	feet	130	2700
PRECIP	Mean Annual Precipitation	39	inches	33.1	50.4
FOREST	Percent Forest	52.975	percent	5.1	100
URBAN	Percent Urban	0.3839	percent	0	89

Annual Flow Statistics Disclaimers [Statewide Mean and Base Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Mean Annual Flow	0.192	ft ³ /s

Annual 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/>)

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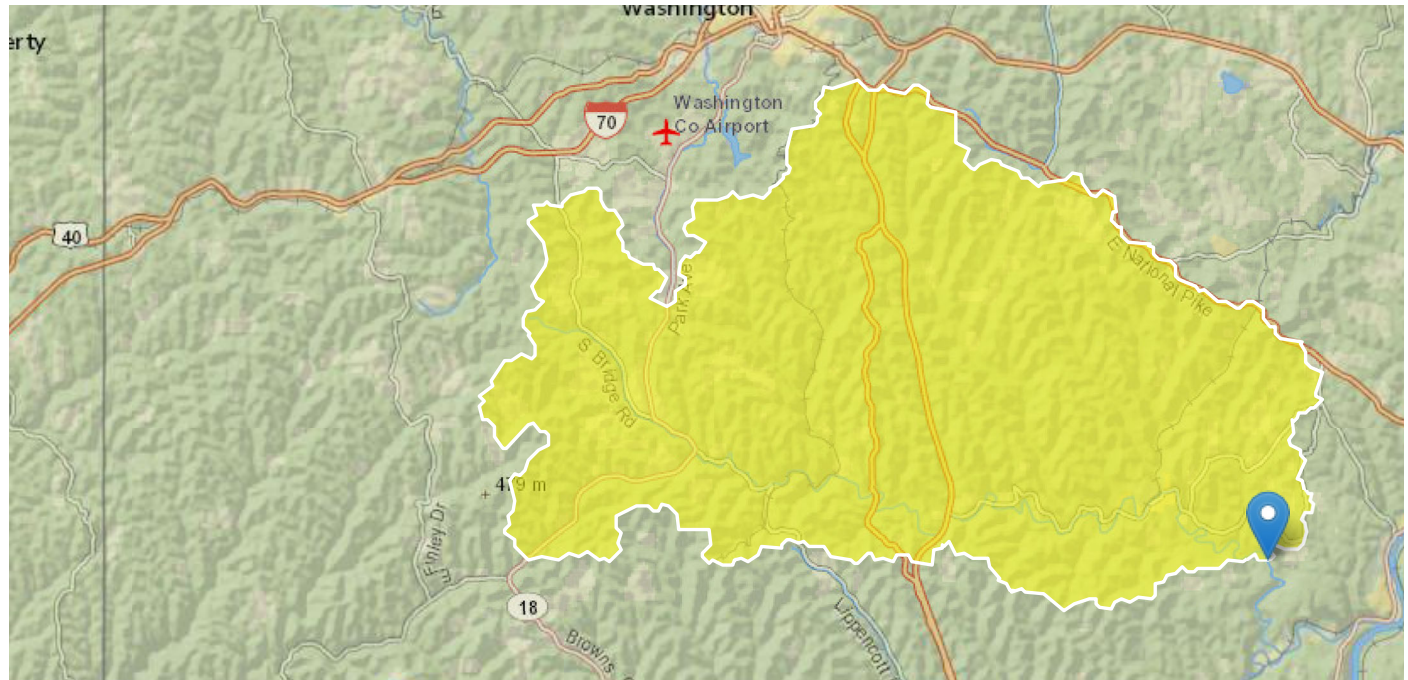
Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report Maggie Lynn Underground MP 1

Region ID: PA
Workspace ID: PA20240531150727397000
Clicked Point (Latitude, Longitude): 40.00362, -80.04641
Time: 2024-05-31 11:07:50 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	131	square miles
ELEV	Mean Basin Elevation	1167	feet
FOREST	Percentage of area covered by forest	54.7845	percent
PRECIP	Mean Annual Precipitation	39	inches
URBAN	Percentage of basin with urban development	3.3455	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	131	square miles	2.26	1400

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	1167	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 (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	7.09	ft ³ /s	43	43
30 Day 2 Year Low Flow	10.9	ft ³ /s	38	38
7 Day 10 Year Low Flow	3.3	ft ³ /s	66	66
30 Day 10 Year Low Flow	4.89	ft ³ /s	54	54
90 Day 10 Year Low Flow	7.84	ft ³ /s	41	41

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/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	131	square miles	2.26	1720
ELEV	Mean Basin Elevation	1167	feet	130	2700
PRECIP	Mean Annual Precipitation	39	inches	33.1	50.4
FOREST	Percent Forest	54.7845	percent	5.1	100
URBAN	Percent Urban	3.3455	percent	0	89

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

PIL: 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
Mean Annual Flow	170	ft ³ /s	12	12

Annual 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/>)

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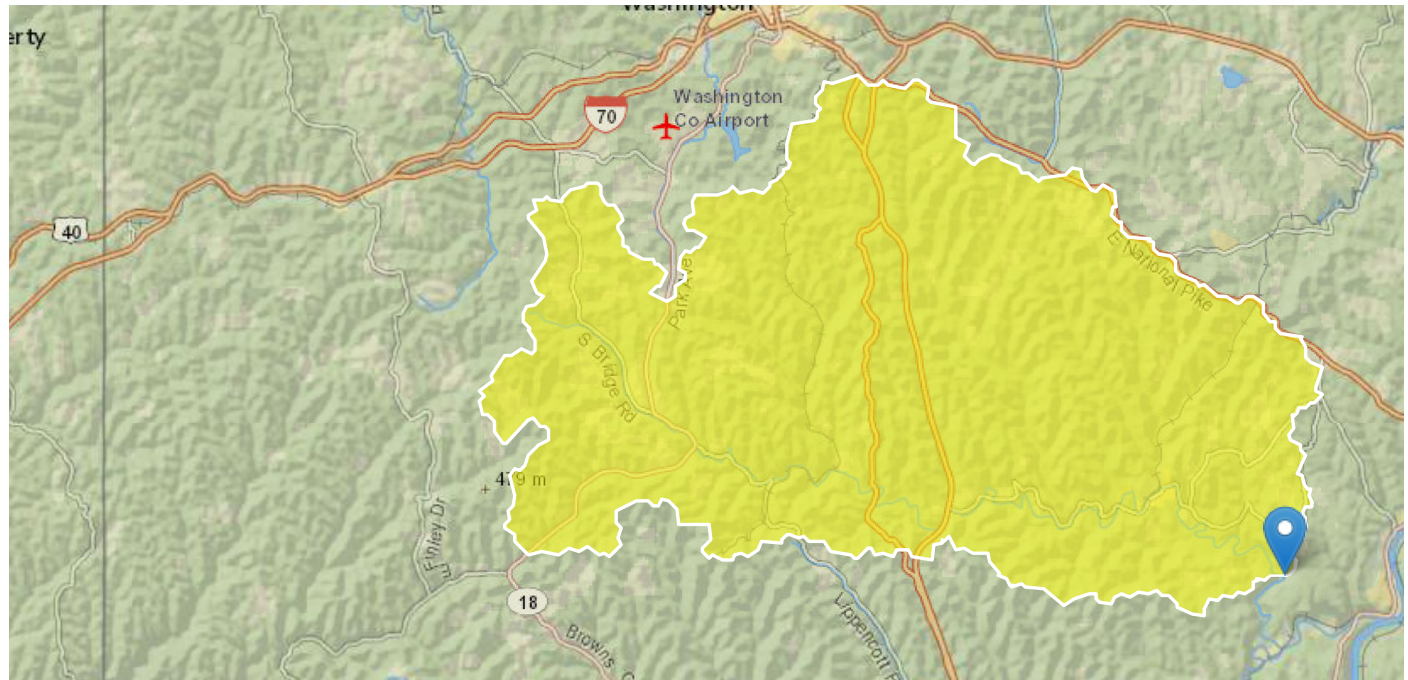
Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report MP-4 Tenmile Creek, Maggie Lynn Underground

Region ID: PA
Workspace ID: PA20240531151434765000
Clicked Point (Latitude, Longitude): 39.99698, -80.03951
Time: 2024-05-31 11:14:57 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	133	square miles
ELEV	Mean Basin Elevation	1165	feet
FOREST	Percentage of area covered by forest	54.7262	percent
PRECIP	Mean Annual Precipitation	39	inches
URBAN	Percentage of basin with urban development	3.2907	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	133	square miles	2.26	1400

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	1165	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 (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	7.2	ft ³ /s	43	43
30 Day 2 Year Low Flow	11	ft ³ /s	38	38
7 Day 10 Year Low Flow	3.36	ft ³ /s	66	66
30 Day 10 Year Low Flow	4.97	ft ³ /s	54	54
90 Day 10 Year Low Flow	7.96	ft ³ /s	41	41

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/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	133	square miles	2.26	1720
ELEV	Mean Basin Elevation	1165	feet	130	2700
PRECIP	Mean Annual Precipitation	39	inches	33.1	50.4
FOREST	Percent Forest	54.7262	percent	5.1	100
URBAN	Percent Urban	3.2907	percent	0	89

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

PIL: 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
Mean Annual Flow	173	ft ³ /s	12	12

Annual 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/>)

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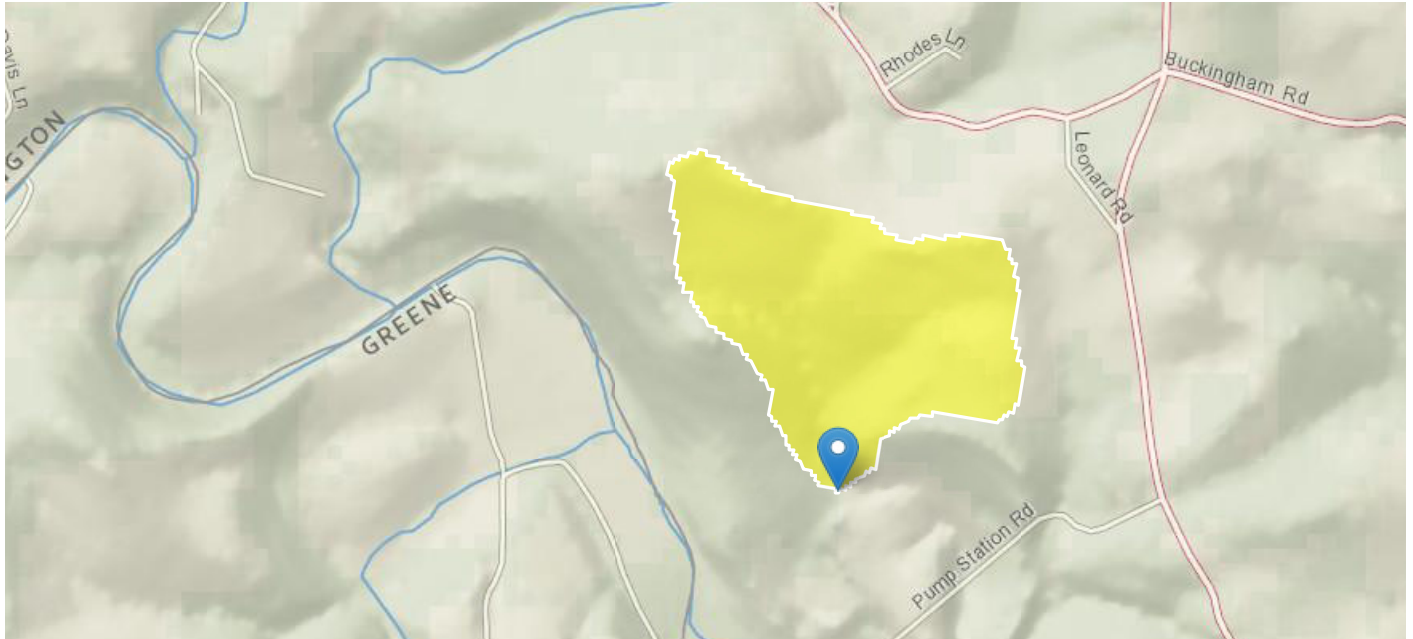
Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report MP 14 UNT E Tenmile Creek Maggie Lynn Underground

Region ID: PA
Workspace ID: PA20240531153035869000
Clicked Point (Latitude, Longitude): 40.00176, -80.04036
Time: 2024-05-31 11:30:57 -0400



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➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.14	square miles
ELEV	Mean Basin Elevation	1094	feet
FOREST	Percentage of area covered by forest	48.1219	percent
PRECIP	Mean Annual Precipitation	39	inches
URBAN	Percentage of basin with urban development	0.4355	percent

➤ Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.14	square miles	2.26	1400
ELEV	Mean Basin Elevation	1094	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00277	ft ³ /s
30 Day 2 Year Low Flow	0.00582	ft ³ /s
7 Day 10 Year Low Flow	0.00069	ft ³ /s
30 Day 10 Year Low Flow	0.0017	ft ³ /s
90 Day 10 Year Low Flow	0.00375	ft ³ /s

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/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.14	square miles	2.26	1720
ELEV	Mean Basin Elevation	1094	feet	130	2700
PRECIP	Mean Annual Precipitation	39	inches	33.1	50.4
FOREST	Percent Forest	48.1219	percent	5.1	100
URBAN	Percent Urban	0.4355	percent	0	89

Annual Flow Statistics Disclaimers [Statewide Mean and Base Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Mean Annual Flow	0.166	ft ³ /s

Annual 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/>)

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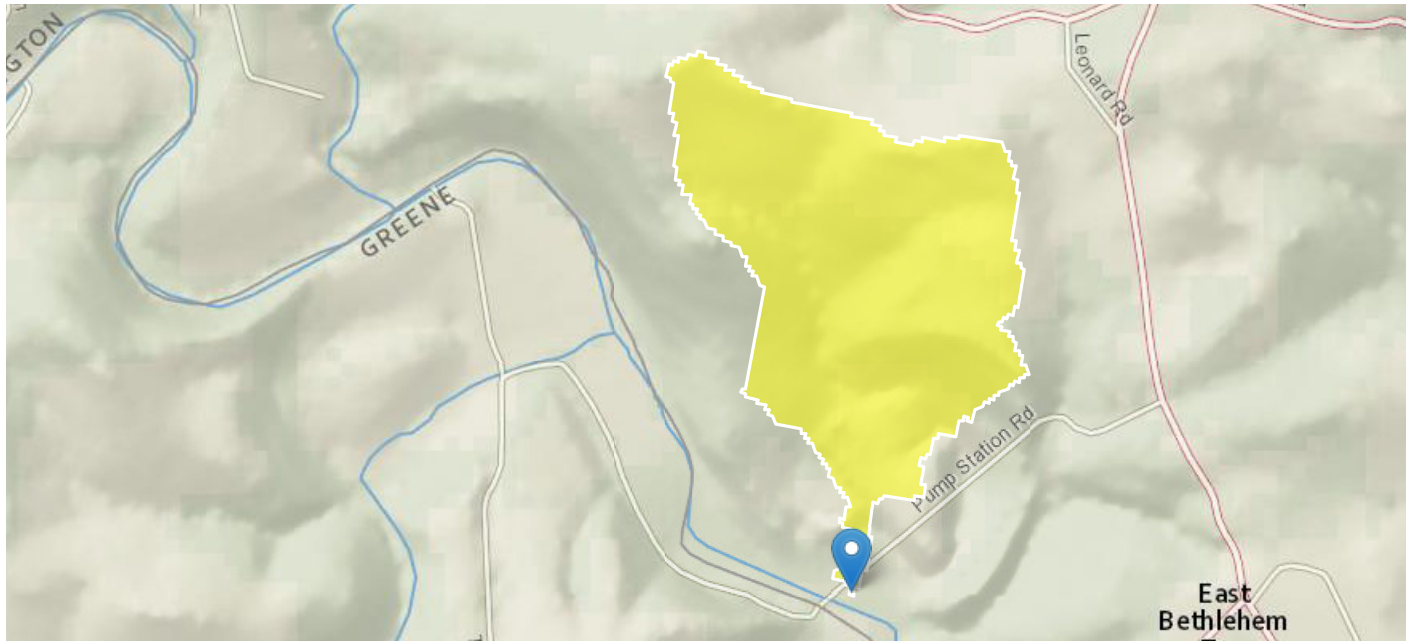
Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report MP 42 UNT E Tenmile Crk Maggie Lynn Underground

Region ID: PA
Workspace ID: PA20240531153608974000
Clicked Point (Latitude, Longitude): 39.99762, -80.03999
Time: 2024-05-31 11:36:30 -0400



[+ Collapse All](#)

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.2	square miles
ELEV	Mean Basin Elevation	1054	feet
FOREST	Percentage of area covered by forest	53.6701	percent
PRECIP	Mean Annual Precipitation	39	inches
URBAN	Percentage of basin with urban development	0.4729	percent

➤ Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.2	square miles	2.26	1400
ELEV	Mean Basin Elevation	1054	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00403	ft ³ /s
30 Day 2 Year Low Flow	0.00831	ft ³ /s
7 Day 10 Year Low Flow	0.00105	ft ³ /s
30 Day 10 Year Low Flow	0.00251	ft ³ /s
90 Day 10 Year Low Flow	0.00538	ft ³ /s

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/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.2	square miles	2.26	1720
ELEV	Mean Basin Elevation	1054	feet	130	2700
PRECIP	Mean Annual Precipitation	39	inches	33.1	50.4
FOREST	Percent Forest	53.6701	percent	5.1	100
URBAN	Percent Urban	0.4729	percent	0	89

Annual Flow Statistics Disclaimers [Statewide Mean and Base Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Mean Annual Flow	0.24	ft ³ /s

Annual 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/>)

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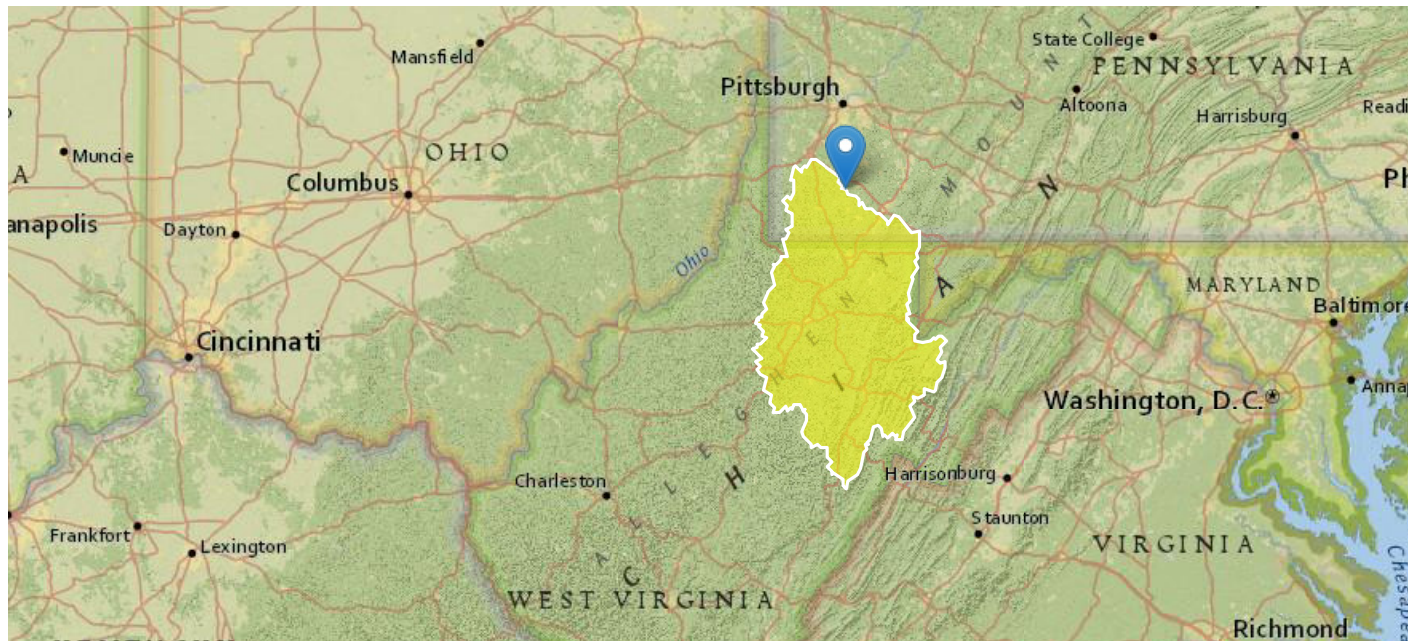
Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report PWS 5630045 Millsboro Mon River Maggie Lynn Underground

Region ID: PA
Workspace ID: PA20240531154826894000
Clicked Point (Latitude, Longitude): 39.99147, -79.99196
Time: 2024-05-31 11:48:54 -0400



[+ Collapse All](#)

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4950	square miles
ELEV	Mean Basin Elevation	1879	feet
FOREST	Percentage of area covered by forest	77.9506	percent
PRECIP	Mean Annual Precipitation	48	inches
URBAN	Percentage of basin with urban development	2.0061	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4950	square miles	2.26	1400
ELEV	Mean Basin Elevation	1879	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	661	ft ³ /s
30 Day 2 Year Low Flow	880	ft ³ /s
7 Day 10 Year Low Flow	381	ft ³ /s
30 Day 10 Year Low Flow	448	ft ³ /s
90 Day 10 Year Low Flow	671	ft ³ /s

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/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4950	square miles	2.26	1720
ELEV	Mean Basin Elevation	1879	feet	130	2700
PRECIP	Mean Annual Precipitation	48	inches	33.1	50.4
FOREST	Percent Forest	77.9506	percent	5.1	100
URBAN	Percent Urban	2.0061	percent	0	89

Annual Flow Statistics Disclaimers [Statewide Mean and Base Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Mean Annual Flow	10800	ft ³ /s

Annual 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/>)

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Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1