pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**SOUTHWEST REGIONAL OFFICE**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0254380** |
| Facility Type | **Sewage** | APS ID | **913511** |
| Major / Minor | **Minor** | Authorization ID | **1354025** |

# NPDES PERMIT FACT SHEET ADDENDUM

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Ursina Borough** | Facility Name | **Ursina Borough STP** |
| Applicant Address | 418 Park Street | Facility Address | 254 2nd Street |
| | Confluence, PA 15424-3326 | | Confluence, PA 15424-2313 |
| Applicant Contact | Vicki Edwards | Facility Contact | Same as Applicant |
| Applicant Phone | (814) 395-3148 | Facility Phone | Same as Applicant |
| Client ID | 110918 | Site ID | 740016 |
| SIC Code | 9999 | Municipality | Ursina Borough |
| SIC Description | Public Admin. - Nonclassifiable Establishment | County | Somerset |
| Date Published in PA Bulletin | October 28, 2023 (Attachment A) | EPA Waived? | Yes |
| Comment Period End Date | November 27, 2023 | If No, Reason | |

Purpose of Application: Application for a renewal of an NPDES permit for discharge of treated Sewage

## Internal Review and Recommendations

The Department of Environmental Protection (DEP) published notice of draft Authorization to Discharge under the National Discharge Elimination System (NPDES) discharge requirements for treated sewage for Ursina Borough STP in the *Pennsylvania Bulletin* on October 28, 2023 [53 Pa.B. 6716]. A 30-day comment period was provided during which interested parties were directed to submit comments to DEP.

Comments were received from Jake Bolby. As a result of those comments, the following changes are being made:

- Total Residual Chlorine (TRC) limits were removed from Part A. I.C.
- The TRC compliance schedule was extended from 6 months to 3 years.
- Part C.III.A of the permit was amended to reflect a three-year compliance period

Given the considerable interest from Ursina Borough, the Department has decided to formally re-draft this permit.

Draft permit issuance is recommended.

In response to the draft permit, Jake Bolby with The Eads Group, sent a formal letter dated November 9, 2023 (Attachment B) on behalf of Ursina Borough. The letter contained comments regarding the use of USGS Stream Stats, the new, more restrictive TRC limits, and the reduction in TSS and $CBOD_5$ loading limits.

1. The final effluent limit for TRC presented in the draft NPDES permit appears to be inconsistent.

   **DEP's Response:** The previous permit limits for TRC were inadvertently included on page 4 (Part A. I.C.) of the draft permit. This limit has been removed.

| Approve | Return | Deny | Signatures | Date |
|---|---|---|---|---|
| X | | | Stephanie Conrad / Environmental Engineering Specialist | December 15, 2023 |
| x | | | Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager | December 15, 2023 |

**Internal Review and Recommendations**

2. We request the Department evaluate the validity of using the USGS Stream Stats Tool in setting values for NPDES effluent limits.

   **DEP's Response:** DEP's policy is to use USGS Stream Stats to determine $Q_{7-10}$ flow in the absence of site-specific studies. The permittee has the opportunity to submit site specific data for any input they question the validity of.

3. Based on the values shown in the NPDES Fact Sheet, Attachment C-TRC Modeling Results there is no clear indication why the average monthly and average monthly and instantaneous maximum should be lowered to 0.02 mg/L.

   **DEP's Response:** Average monthly and instantaneous maximum limits of 0.02 mg/L were justified on page 12 of the draft fact sheet. Ursina Borough STP discharges to Laurel Hill Creek, which is classified as a HQ-CWF. The facility is therefore privy to the Antidegradation Best Available Combination of Technologies (ABACT) effluent limits defined in the Department's *Water Quality Antidegradation Implementation Guidance* [Doc. No. 391-0300-002]. The ABACT for TRC is "no detectable residual." The department has therefore set the effluent limits for TRC equal to the method detection limit.

4. It is anticipated that physical, chemical, and operational changes need to be made to meet the TRC limit for the period Six Months Following Permit Effective Date. The suggested permit effective date of October 31, 2026 provides sufficient time for all parties to complete the necessary steps for future permit compliance.

   **DEP's Response:** The compliance period in the permit has been amended to give the permittee three years to meet the new TRC limit of 0.02 for average monthly and instantaneous maximum.

5. The draft permit proposes a loading reduction for Total Suspended Solids (TSS). We have no comment related to this limit but suggest evaluating this value if alternate or supplemental data is used, specifically USGS Stream Stats as previously noted.

   **DEP's Response:** Reduction of TSS loading was justified on page 13 of the draft fact sheet issued October 16, 2023. The load was changed to be consistent with DEP's rounding guidance found in the *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001].

6. The draft permit proposes a loading reduction for $CBOD_5$. We have no comment related to this limit but suggest evaluating this value if alternate or supplemental data is used, specifically USGS Stream Stats as previously noted.

   **DEP's Response:** Reduction of $CBOD_5$ loading was justified on page 13 of the draft fact sheet issued October 16, 2023. The load was changed to be consistent with DEP's rounding guidance found in the *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001].

Jake Bolby sent an email on November 14, 2023 with an additional comment (Attachment C).

1. Changes in permit limits which result in construction costs and increased maintenance costs present significant financial challenges and hardship. A Water Quality Presentation stated that the Department could consider a reduction in water quality to accommodate important economic or social development. Ursina Borough is a small rural community with limited financial resources. I believe it is appropriate to consider the economic and social impacts to Ursina Borough which results from changes to NPDES limits.

   **DEP's Response:** The Department's *Water Quality Antidegradation Implementation Guidance* [Doc. No. 391-0300-002] was published in 2003 and applies to all discharges that started after that time. The department is open to considering socio-economic justice on a case by case basis. After reviewing the historic documents for Ursina Borough, it was determined that when planning was approved, the borough intended to install UV. When the initial NPDES permit which was issued in 2011 it therefore did not impose TRC limits. The pollution report issued with the 2011 permit (Attachment D) provided information regarding the ABACT effluent limitation that disinfection should be provided using a method that leaves no detectable residual. Based on this documentation, the Borough was aware of the ABACT when the treatment plant was designed in 2012 and chose to install chlorination and dechlorination. For these reasons, the Department is being consistent with the *Water Quality Antidegradation Implementation*

**Internal Review and Recommendations**

*Guidance* [Doc. No. 391-0300-002] and proceeding with imposing a monthly average and instantaneous maximum limit of 0.02 for TRC.

Jake Bolby sent an email on November 28, 2023 with an additional comment (Attachment E).

1. Overall, we believe a 3-year total implementation schedule is feasible and allows for variability and accommodation of unknowns.

   **DEP's Response:** The compliance period in the permit has been amended to give the permittee three years to meet the new TRC limit of 0.02 for average monthly and instantaneous maximum.

# ATTACHMENT A

# PA Bulletin Post

# NOTICES

## DEPARTMENT OF ENVIRONMENTAL PROTECTION

### Applications, Actions and Special Notices

#### APPLICATIONS

[53 Pa.B. 6716]
[Saturday, October 28, 2023]

### THE PENNSYLVANIA CLEAN STREAMS LAW AND THE FEDERAL CLEAN WATER ACT

### APPLICATIONS FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS AND WATER QUALITY MANAGEMENT (WQM) PERMITS UNDER THE CLEAN STREAMS LAW AND FEDERAL CLEAN WATER ACT

This notice provides information about persons who have applied to the Department of Environmental Protection (DEP) for a new, renewed, or amended NPDES or WQM permit, or a permit waiver for certain stormwater discharges, or have submitted a Notice of Intent (NOI) for coverage under a General Permit. The applications and NOIs concern, but are not limited to, effluent discharges from sewage treatment facilities and industrial facilities to surface waters or groundwater; stormwater discharges associated with industrial activity (industrial stormwater), construction activity (construction stormwater), and municipal separate storm sewer systems (MS4s); the application of pesticides; the operation of Concentrated Animal Feeding Operations (CAFOs); and the construction of sewage, industrial waste, and manure storage, collection and treatment facilities. This notice is provided in accordance with 25 Pa. Code Chapters 91 and 92a and 40 CFR Part 122, implementing The Clean Streams Law (35 P.S. §§ 691.1—691.1001) and the Federal Clean Water Act (33 U.S.C.A. §§ 1251—1376). More information on the types of NPDES and WQM permits that are available can be found on DEP's website (visit www.dep.pa.gov and select Businesses, Water, Bureau of Clean Water, Wastewater Management, and NPDES and WQM Permitting Programs).

Section II identifies individual NPDES permit applications received and draft permits indicating DEP's tentative determination relating to sewage, industrial waste, industrial stormwater, MS4s, pesticides and CAFOs. A 30-day public comment period applies to these applications and draft permits, except when a site-specific water quality criterion is used to establish effluent limitations, in which case a 45-day public comment period applies. The period for comment may be extended at the discretion of DEP for one additional 15-day period. Additional information, including links to draft permits and fact sheets that explain the basis for DEP's tentative determinations may be reviewed by generating the "Applications Received with Comment Periods Report" on DEP's website at www.dep.pa.gov/CWPublicNotice. Notification of 15-day extensions for comment will be provided in the "Applications Received with Comment Periods Report" (Comments column).

**PA0254380**, Sewage, SIC Code 9999, **Ursina Borough, Somerset County**, 418 Park Street, Confluence, PA 15424-3326. Facility Name: Ursina Borough STP. This existing facility is located in Ursina Borough, **Somerset County**.

Description of Existing Activity: The application is for a renewal of an NPDES permit for an existing discharge of treated sewage.

The receiving stream(s), Laurel Hill Creek (HQ-CWF), is located in State Water Plan watershed 19-E and is classified for High Quality Waters—Cold Water Fishes, aquatic life, water supply and recreation. The discharge is not expected to affect public water supplies.

The proposed effluent limits for Outfall 001 are based on a design flow of .04 MGD.—Interim Limits.

| | *Mass Units (lbs/day)* | | | *Concentrations (mg/L)* | | |
|---|---|---|---|---|---|---|
| **Parameters** | **Average Monthly** | **Average Weekly** | ***Minimum*** | **Average Monthly** | **Maximum** | ***IMAX*** |
| Total Residual Chlorine (TRC) | XXX | XXX | XXX | 0.03 | XXX | 0.1 |

The proposed effluent limits for Outfall 001 are based on a design flow of .04 MGD.—Final Limits.

| | *Mass Units (lbs/day)* | | | *Concentrations (mg/L)* | | |
|---|---|---|---|---|---|---|
| **Parameters** | **Average Monthly** | **Average Weekly** | ***Minimum*** | **Average Monthly** | **Maximum** | ***IMAX*** |
| Total Residual Chlorine (TRC) | XXX | XXX | XXX | 0.02 | XXX | 0.02 |

The proposed effluent limits for Outfall 001 are based on a design flow of .04 MGD.—Limits.

| | *Mass Units (lbs/day)* | | *Concentrations (mg/L)* | | | |
|---|---|---|---|---|---|---|
| **Parameters** | **Average Monthly** | **Average Weekly** | ***Minimum*** | **Average Monthly** | **Maximum** | ***IMAX*** |
| Total Residual Chlorine (TRC) | XXX | XXX | XXX | 0.03 | XXX | 0.1 |

The proposed effluent limits for Outfall 001 are based on a design flow of .04 MGD.—Final Limits.

| | *Mass Units (lbs/day)* | | *Concentrations (mg/L)* | | | |
|---|---|---|---|---|---|---|
| **Parameters** | **Average Monthly** | **Average Weekly** | ***Minimum*** | **Average Monthly** | **Maximum** | ***IMAX*** |
| Total Residual Chlorine (TRC) | XXX | XXX | XXX | 0.02 | XXX | 0.02 |

The proposed effluent limits for Outfall 001 are based on a design flow of .04 MGD.—Limits.

| | *Mass Units (lbs/day)* | | *Concentrations (mg/L)* | | | |
|---|---|---|---|---|---|---|
| **Parameters** | **Average Monthly** | **Average Weekly** | ***Minimum*** | **Average Monthly** | **Maximum** | ***IMAX*** |
| Flow (MGD) | Report | XXX | XXX | XXX | XXX | XXX |
| pH (S.U.) | XXX | XXX | 6.0<br>Inst Min | XXX | XXX | 9.0 |
| Dissolved Oxygen | XXX | XXX | 4.0<br>Inst Min | XXX | XXX | XXX |
| Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)<br>Nov 1 - Apr 30 | 6.5 | XXX | XXX | 20.0 | XXX | 40.0 |
| May 1 - Oct 31 | 3.0 | XXX | XXX | 10.0 | XXX | 20.0 |
| Biochemical Oxygen Demand ($BOD_5$)<br>Influent | Report | XXX | XXX | Report | XXX | Report |
| Total Suspended Solids | 3.0 | XXX | XXX | 10.0 | XXX | 20.0 |
| Total Suspended Solids<br>Influent | Report | XXX | XXX | Report | XXX | Report |
| Fecal Coliform (No./100 ml)<br>Oct 1 - Apr 30 | XXX | XXX | XXX | 2,000<br>Geo Mean | XXX | 10,000 |
| May 1 - Sep 30 | XXX | XXX | XXX | 200<br>Geo Mean | XXX | 1,000 |
| Ammonia-Nitrogen<br>Nov 1 - Apr 30 | 3.0 | XXX | XXX | 9.0 | XXX | 18.0 |
| May 1 - Oct 31 | 1.0 | XXX | XXX | 3.0 | XXX | 6.0 |
| E. Coli (No./100 ml) | XXX | XXX | XXX | XXX | XXX | Report |
| Total Nitrogen | XXX | XXX | XXX | XXX | Report | XXX |
| Total Phosphorus | XXX | XXX | XXX | XXX | Daily Max<br>Report<br>Daily Max | XXX |

The following major condition has been added to the permit:

- A compliance schedule for TRC in Part C III A.

You may make an appointment to review the DEP files on this case by calling the File Review Coordinator at 412-442-4000.

The EPA Waiver is in effect.

*Southwest Regional Office*

# ATTACHMENT B

# November 9, 2023 Comment Letter

THE EADS GROUP
ENGINEERING ARCHITECTURE AND DESIGN SERVICES

November 9, 2023

Department of Environmental Protection
Southwest Regional Office
Clean Water Program
Attn: Stephanie Conrad
400 Waterfront Drive
Pittsburgh, PA 15222-4745

**Draft NPDES Permit-Sewage**
**Ursina Borough STP**
**Application No. PA0254380**
**Authorization ID No. 1354025**
**Public Comment**

Dear Clean Water Program Staff:

On behalf of the Applicant/Permittee, we are providing the following comments related to the draft publication of NPDES No. PA0254380.

1. Total Residual Chlorine (TRC)
    a. Confirmation of Values
        i. The final effluent limit for TRC presented in the draft NPDES permit appears to be inconsistent. We recommend the Department review and confirm the values. Below is a review of the values listed in the draft permit.
            1. Page 3, Six Months Following Permit Effective Date through Permit Expiration Date
                a. TRC, Average Monthly (mg/L) – 0.02
                b. TRC, Instantaneous Maximum (mg/L) – 0.02
            2. Page 4, Permit Effective Date through Permit Expiration Date
                a. TRC, Average Monthly (mg/L) – 0.03
                b. TRC, Instantaneous Maximum (mg/L) – 0.1
        ii. The values presented on page 3 and 4 appear to be in direct conflict with each other and it is unclear which value set the permittee it expected to achieve. Page 4 matches the listed values on page 2 and current effluent limits for TRC.

450 Aberdeen Drive, Somerset, PA 15501 814.445.6551 | www.eadsgroup.com
Altoona PA • Clarion PA • Johnstown PA • Lewistown PA • North Huntingdon PA • Beaver PA • Somerset PA
Cumberland MD • Morgantown WV

b. Basis of Values – NPDES Fact Sheet
   i. Downstream of Discharge Point
      1. The "NPDES Fact Sheet" provided utilizes USGS Stream Stats Reports. In recent conversation with the Department of Environmental Protection, Bureau of Waterways Engineering and Wetlands, we were informed that the USGS Stream Stats tool has a wide margin of error (approximately 20 – 40%). They required validation of the USGS Stream Stats values through other analysis methods. We request the Department evaluate the validity of using the USGS Stream Stats Tool in setting the values for NPDES effluent limits rather than using a more accurate method as recommended by other bureaus within the Department.
   ii. NPDES Fact Sheet, Attachment C – TRC Modeling Results
      1. The effluent limit values shown in this attachment are as follows:
         a. Average Monthly – 0.5 mg/L
         b. Instantaneous Maximum – 1.635 mg/L
         c. These values are well above the current and proposed TRC effluent limits.
      2. Based on the values shown in the NPDES Fact Sheet, Attachment C – TRC Modeling Results there is no clear indication why the average monthly and instantaneous maximum should be lowered to 0.02 mg/L for the period Six (6) Months Following Permit Effective Date to Permit Expiration Date. The Department's modeling supports no adjustment to the current TRC limits and conversely demonstrates that a higher effluent limit can be sustained. We understand that it is against current policy and practices to raise effluent limits, and this is not requested. We recommend maintaining the current TRC effluent limits because Department modeling demonstrates their appropriateness.

c. Time Periods and Implementation

The draft NPDES permit is divided into two (2) time periods. 1) Permit Effective Date and 2) Six (6) Months Following Permit Effective Date. It is anticipated that physical, chemical, and operational changes will need to be made to meet the TRC limit for the period Six Months Following Permit Effective Date. The permit expired on October 31, 2021 and was granted an administrative extension. A draft permit effective date is not known at this time. Based on the available information and anticipated required changes we suggest a permit effective date of October 31, 2026. This permit effective date will allow the permittee to make application for a WQM Part II permit for authorization to complete changes at the STP, acquire funding, and construct the changes. We anticipate the need to install UV disinfection or enhanced chemical treatment. Enhanced chemical treatment may include a change from solid chemical to liquid chemical, addition of tankage, and possibly alternative chemicals.

i. Permitting - The current "Policy for Implementing the Department of Environmental Protection (Department) Permit Review Process and Permit Decision Guarantee" shows a PDG timeframe of 85 business days for NEW applications. There does not appear to be a PDG for a permit amendment which is the type of permit assumed to be required for any change to this existing facility. Using only the NEW PDG timeframe, the earliest approval of a WQM Part II is approximately 4.25 months leaving only 1.75 months to prepare and submit a complete application. It is our opinion that a complete WQM Part II permit application for the anticipated changes will require at least 6 to 9 months to develop and submit.

ii. Bidding, Material Lead Times, and Construction
   1. Bidding & Award – since the owner is a municipal entity, they are subject to public bidding requirements. This process, by law and by practicality, takes approximately 2 to 4 months. Once a contract is awarded the contractor begins to procure necessary materials, labor, and equipment.
   2. Material Leads Times
      a. UV Disinfection – the lead time from purchase to delivery is estimated to be approximately 6 to 9 months.
      b. Other Disinfection Methods – the lead time from purchase to delivery is estimated to be 2 to 4 months. If concrete tankage is utilized this lead time would need to be extended 6 months.
   3. Construction – it is estimated that construction can be completed within 3 to 5 months from the date all materials are delivered.
   4. Total Time – based on the estimated timeframes it is believed the process post-permit is expected to require between 13 and 24 months to complete depending on materials and equipment selected.

In summary, we believe that if the permittee were to commence work immediately to attain permit compliance it would require a minimum of 26 months and could be as long as 37 months. The suggested permit effective date of October 31, 2026 provides sufficient time for all parties to complete the necessary steps for future permit compliance.

2. Total Suspended Solids
   a. The draft permit proposes a loading reduction from 3.3 lbs/day to 3.0 lbs/day. We have no comment related to this limit but suggest evaluating this value if alternate or supplement flow data is used, specifically USGS Stream Stats as previously noted.
3. Carbonaceous Biochemical Oxygen Demand
   a. The draft permit proposes a loading reduction from 6.7 lbs/day to 6.5 lbs/day for the period between November 1 and April 30 and 3.3 lbs/day to 3.0 lbs/day for the time period between May 1 and October 31. We have no comment related to this limit but suggest evaluating this value if alternate or supplement flow data is used, specifically USGS Stream Stats as previously noted.

NPDES PA0254380
November 9, 2023
Page 4 of 4

4. Conclusions & Recommendations

   a. USGS Stream Stats Data – based on comments and direction from the Bureau of Waterways Engineering and Wetlands we suggest the Department evaluate the use of USDS Stream Stats Data for the analysis and publication of NPDES limits. It is our understanding that a wide error margin is associated with the USGS Stream Stats data. This error margin may evaluate or reduce pollutant limits.
   b. The NPDES Fact Sheet, Attachment C – TRC Modeling Results demonstrates effluent TRC values higher than the current and proposed TRC effluent values can be supported. We recommend maintaining the current values. If the Department issues a permit with the proposed TRC values of 0.02 mg/L for both average monthly and instantaneous limits then we recommend establishing a permit effective date of October 31, 2026 to allow time for appropriate permitting, funding, bidding, and construction phases.

Please contact me if you have any questions or comments regarding this matter.

Regards,
The EADS Group, Inc.

By: Jacob T. Bolby, P.E.

Cc: Ursina Borough

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# ATTACHMENT C

# November 14, 2023 Email

**From:** Jake Bolby <jbolby@eadsgroup.com>
**Sent:** Tuesday, November 14, 2023 11:29 AM
**To:** Conrad, Stephanie <stepconrad@pa.gov>
**Cc:** Iasmin, Mahbuba <moiasmin@pa.gov>
**Subject:** RE: [External] NPDES Permit No. PA0254380, Ursina Borough STP, Ursina Borough, Somerset County

Hi Stephanie,

I've asked the UV manufacturer to provide a quote which shows cost and lead times.

Ursina Borough will most likely ask for more information related to the lowering of the TRC limit. I've searched for codes and regulations related to the implementation of antidegradation and ABACT. All I could find were guidelines and references. Is there anything you could share that I could pass along to the Borough which indicates that the lower limit is a requirement, code, or regulation.

Ursina Borough completed construction of their sewage collection and treatment system in 2015. They received approximately 90% grant funding for the project because the resident population is well below the median household income level. This level of grant is abnormally high for a new system and many exceptions were made by the various funding agencies to allow for this level of grant to be received by the community. Changes in permit limits which result in construction costs and increased maintenance costs present significant financial challenges and hardship. In my research I ran across a Water Quality presentation that stated the Department could consider a reduction in water quality to accommodate important economic or social development. Ursina Borough is a small rural community with limited financial resources. I believe it is appropriate to consider the economic and social impacts to Ursina Borough which result from changes to NPDES limits. If you believe a meeting with Ursina Borough or more information related to their specific challenges is warranted please let me know.

Thanks,

Jacob T. Bolby, P.E.
Project Manager

**The EADS Group, Inc.**
450 Aberdeen Drive
Somerset, PA 15501
jbolby@eadsgroup.com
O: 814-445-6551
C: 724-689-7228

# ATTACHMENT D

# 2011 Pollution Report

| | | | |
|---|---|---|---|
| FACT SHEET/STATEMENT OF BASIS | | NPDES PA0254380 | |
| Prepared by: | James M. Vanek, P.E. | Amendment No. | |
| Date: | March 25, 2011 | Outfall 001 | |
| Phone: | 412.442.4000 | | |
| (ES) | Ursina Borough Somerset County | (MUN) | Ursina Borough |
| (AF) | Ursina Borough STP | (CO) | Somerset |

**********

This application is for a new discharge with a flow of 0.04 MGD. The proposed discharge is to Laurel Hill Creek, whichis classified for High Quality Waters - Cold Water Fishes.

**Effluent Limitations**

Effluent limitations for this discharge were established using:

- The Special Protection Waters Implementation Handbook
- Chapter 93 criteria

The enclosed pollution report further describes the limits proposed in this permit.

POLLUTION REPORT March 25, 2011

(I) Project Description — New Discharge (X) — Change
Existing Discharge — Preliminary

A. NPDES Application/Permit No. PA 0254380
Part II Permit Nos.

B. Applicant, Case Name or Permittee: Ursina Borough

Municipality: Ursina Borough
County: Somerset

C. Type Waste

[ X ] Sewage
[ ] Industrial
[ ] Mine

D. Source and characteristics

Treated sewage

E. USGS Quad : Confluence

F. Latitude (or in. N) 39 48 46
Longitude (or in. W) 79 20 02

(II) Water Uses and Criteria

A. Receiving waters Laurel Hill Creek — Stream Code 38580
Chapter 93 classification HQ-CWF — R.M.I. 1.7
D.A. 121 sq. mi. — Yield 0.04 cfs/sq.mi
Flow 4.8400 cfs. — Based on data from
Water Resources Bulletin 12 station 03080000, USGS Confluence Quadrangle
Elevation ft.

Exceptions to standard water use lists :
Add none
Delete

Water Quality Criteria-Exceptions to Specific Criteria :
Add none
Delete

Impoundment
Special Downstream Uses :

B. Secondary Waters Casselman River — R.M.I. 0.17
Distance from discharge 1.87 mi. — Ch. 93 classification wwf
D.A. 590 sq. mi. — Yield cfs/sq.mi
Flow cfs. — Based on data from
Elevation ft. — Stream Code 38579

Exceptions to standard water use lists :
Add none
Delete

Water Quality Criteria-Exceptions to Specific Criteria :
Add none
Delete

Impoundment
Special Downstream Uses :
Downstream PWS : location Ohiopyle Municipal Authority
distance from discharge 12 mi. intake mgd.
stream flow at intake cfs.

### III. Effluent Limitations

NPDES #PA 0254380

A. Outfall 001 B. Discharge Volume 0.04 MGD

| Parameter | lbs/day | | | | mg/l | | |
|---|---|---|---|---|---|---|---|
| (Sewage) | Monthly Avg. | Weekly Avg. | Daily Max. | | Monthly Avg. | Weekly Avg. | Instan. Max. |
| ~~(Industrial Waste)~~ | ~~Daily Avg.~~ | | ~~Daily Max.~~ | | ~~Daily Avg.~~ | Daily Max for Toxics | ~~Instan. Max.~~ |
| 1. CBOD-5 Day | | | | | | | |
| May 1 - Oct 31 | 3.3 | | | | 10 | | 20 |
| Nov 1 - Apr 30 | 6.7 | | | | 20 | | 40 |
| 2. Total Suspended Solids | 3.3 | | | | 10 | | 20 |
| 3. Ammonia Nitrogen | | | | | | | |
| May 1 - Oct 31 | 1.0 | | | | 3.0 | | 6.0 |
| Nov 1 to Apr 30 | 3.0 | | | | 9.0 | | 18.0 |
| 4. Phosphorus | | | No Phosp. Limit | | | | |
| 5. Fecal Coliform | | | | | | | |
| May 1 to Sep 30 | 200 /100 ml as a geometric mean | | | | | | |
| Oct 1 to Apr 30 | 2,000 /100 ml as a geometric mean | | | | | | |
| 6. Total Residual Chlorine | | | U.V. proposed | | | | |
| 7. Dissolved Oxygen | not less than | | 3.0 | mg/l at all times | | | |
| 8. pH | not less than 6.0 nor greater than 9.0 | | | | | | |
| 9. Nitrite & Nitrate | | | No NO2-NO3 Limit | | | | |
| 10. | | | | | | | |
| 11. | | | | | | | |
| 12. | | | | | | | |
| 13. | | | | | | | |

**Effluent Limitation Rational**

1. PA Guidelines: Special protection guidance appendix B
2. Regulation:
3. Water Quality Criteria: Chapter 93

**Approvals:**

Reviewer, Planning / WQ: [signature] Date: 5/9/11

Geologist or Aquatic Biologist: _____ Date: _____

Chief, Planning / WQ: [signature] Date: 5/10/11

Chief, Division of WQ: _____ Date: _____

## APPENDIX B

## ANTIDEGRADATION BEST AVAILABLE COMBINATION OF TECHNOLOGIES FOR WASTEWATER DISCHARGES

For wastewater discharges to HQ and EV waters the most effective treatment/disposal (T/D) technologies consist of a hierarchy of preferred methods which take technical and economic feasibility as well as expected water quality impacts into consideration. The goal of this hierarchy is to reduce or eliminate surface water discharges and minimize degradation of both surface and groundwater by providing advanced wastewater treatment and/or soil renovation prior to discharge to groundwater. However, for methods which involve a stream discharge, there also exist treatment performance standards defined as ABACT. ABACT in this context refers to treatment and disposal methods designed to help maintain existing water quality. One or more of the following technologies or alternatives suggested by the applicant and agreed upon by DEP should be applied to sewage or selected industrial waste discharges in HQ or EV waters.

A. The most preferred technology for wastewater discharges is to eliminate the discharge through a variety of land application options (including year round spray irrigation, drip irrigation, and land spreading) or extension of existing collection systems to convey wastewater to an existing sewage treatment system outside the HQ or EV watershed. Land application includes the installation of a treatment system providing a minimum of secondary treatment prior to release of the effluent onto the land. Sufficient storage to prevent any stream discharge during wet or cold weather periods when land application is not technically feasible is also required. Year-round spray irrigation or conveyance to an existing treatment plant outside of the watershed is required whenever it is technically feasible and cost effective. SEJ is not required for proposals in HQ watersheds which do not involve a discharge to surface waters. Year-round land application is the preferred alternative because it provides the added advantage of groundwater recharge within the watershed.

An equivalent technology for wastewater discharge is subsurface disposal. This disposal method may consist of either conventional or *alternate* onlot systems or a permitted groundwater discharge system as long as its review and approval is consistent with DEP regulations and policies for the protection of both surface and groundwater. Onlot disposal systems with domestic sewage flows of 10,000 gpd or less are permitted by local sewage enforcement officers under Act 537. For domestic flows of more than 10,000 gpd and industrial wastes, subsurface disposal options are more limited but, where appropriate, can be approved by DEP through issuance of a Water Quality Management (WQM) permit. Since there is no discharge to surface waters, SEJ is not required in HQ waters.

Collection and conveyance of sewage to existing treatment facilities outside the watershed or stream segment is another option because it eliminates the discharge of treated wastes to HQ or EV waters. One possible disadvantage is the export of water out of the basin and potential disruption of the existing hydraulic balance. This will be considered in the context of the evaluation. In this scenario, there is no discharge to surface or groundwaters outside the context of the existing NPDES permit issued to the facility receiving the wastewater and consequently,

there is no need for a new NPDES permit. Depending upon the circumstances, planning (Act 537) approval and/or a WQM permit may be required.

B. Where year-round land application, subsurface disposal, or collection/conveyance outside the basin are not technically or economically feasible, the next preferred treatment/disposal alternative is seasonal and/or partial land application. The chief difference between year-round and seasonal land application is that a stream discharge is permitted for the portion of the year when soils cannot attenuate the wastewater. The advantages lie in the fact that: 1) the discharge occurs during wetter portions of the year (usually November through April) when stream flows and waste assimilation capacities are higher and therefore, the impact of a stream discharge is less significant, and 2) the portion of the effluent that is land applied helps recharge groundwater. Where seasonal land application is employed, minimum wintertime stream discharge requirements are set using the more stringent of ABACT or water quality-based effluent limits (WQBELs). Seasonal land application is required whenever it is technically feasible and cost effective. Seasonal land application requires both an NPDES permit and a WQM permit. Since there will be a stream discharge for at least a portion of the year, SEJ is also required if the discharge would result in degradation of HQ waters. (See Chapter 10.)

Partial land application consists of disposing of a portion of the wastewater effluent onto soils on either a year-round or seasonal basis. Partial land application is required whenever it is technically feasible and cost effective. Generally, permit requirements for the portion of wastewater to be discharged are the same as for a system based on year-round stream discharge. The advantage to partial land application is that it reduces the total annual volume of wastewater discharged to the stream while increasing groundwater recharge. Partial land application requires both an NPDES and WQM permit. Since there is a stream discharge, SEJ is also required if degradation occurs in the receiving stream.

C. The final technology option is the year-round discharge of treated wastes. This technology is only employed when nondischarge alternatives are not environmentally sound and cost-effective. Where this technology is employed, a discharger must provide, as a minimum, the more stringent of ABACT or treatment technology that will achieve water quality-based effluent limitations (WQBELs). WQBELs are developed to assure compliance with water quality criteria at a specific design stream flow. Where the proposed activity/project is socially or economically justified, the appropriate design flow from Chapter 96.4(g) is used. For proposed discharges to HQ waters where the proposed activity is not socially or economically justified, the effluent requirements are established to maintain existing water quality and are calculated using the procedures outlined in Chapter 8.

ABACT requirements, such as those defined below for sewage discharges, are designed to help maintain existing water quality. Requirements for industrial waste discharges will be determined by DEP on a case-by-case basis after review of the proposed activity and its associated pollutants. All treatment/disposal facilities must be enhanced with pollution prevention technologies applied to the raw waste streams as well as water conservation or water reuse technologies designed to minimize the volume of wastewater discharged.

ABACT for municipal, non-municipal, and small flow sewage discharges is defined below. This listing is intended to represent the desired long-term performance level of constructed treatment facilities. It does not represent an exact statement of effluent limitations as they would appear in

a NPDES permit, where DEP may also require short-term effluent limitations as well as other controls or practices such as minimum treatment requirements established by Interstate River Basin Compacts or the EPA Chesapeake Bay Program.

| ***Parameter*** | ***Treatment Process Performance Expectations (mg/l)*** | | |
|---|---|---|---|
| | ***<2,000*** | ***2,000 to 50,000 gpd*** | ***>50,000*** |
| *$CBOD_5$ (May 1, - Oct. 31)* | *10* | *10* | *10* |
| *$CBOD_5$ (Nov. 1, - Apr. 30)* | *20* | *20* | *10* |
| *Suspended Solids* | *20* | *10* | *10* |
| *$NH_3$-N (May 1 - Oct. 31)* | *5.0* | *3.0* | *1.5* |
| *$NH_3$-N (Nov. 1 - Apr. 30)* | *15.0* | *9.0* | *4.5* |
| *Effective Disinfection* | *- - - See footnote below - - -* * | | |
| *Other Parameters as needed* | *- - - Determined by the size and characteristics of the proposed discharge, may include - $NO_2$/$NO_3$-N, Total Phosphorus, Copper, Lead, Zinc - - -* | | |

* Disinfection should be accomplished using a method that leaves no detectable residual. Disinfection using ultra-violet light or other non-chlorine based systems is encouraged and must be considered.

These values are expressed as average monthly values and represent a higher degree of treatment than conventional BAT. Additional treatment requirements for nutrients may be evaluated if necessary to comply with nutrient removal goals of programs such as those established for the Chesapeake or Delaware Bays. (See Tables B-3 and B-4 for treatment methods). Year-round discharge requires both an NPDES and WQM permit as well as SEJ, if the discharge causes measurable change in an HQ receiving stream. Selected point source control technologies from Tables B-1 and B-2 are appropriate to apply to the year-round discharge of treated wastes.

**EV Waters:** For wastewater discharges (sewage or selected industrial wastes) to EV waters treatment technologies center on the use of pollution prevention technologies to reduce pollutant loads on treatment systems followed by the use of the soil/geologic matrix to remove some or all of the wastewater constituents as an alternative to surface water discharge. Except in the case of individual onlot sewage systems, land application preceded by varying degrees of advanced chemical, physical, and/or biological treatment will be required for treatment/disposal of wastewaters in EV waters if cost effective. The use of land application minimizes or eliminates surface water discharge and the associated water quality degradation. In addition, these combined technologies offer the highest likelihood of producing an effluent that will not degrade the protected stream. Treatment and discharge of wastewater to EV waters can only be permitted if the maintenance or enhancement of existing surface and groundwater quality can be demonstrated.

**Treatment/Disposal Methods:** Tables B-1 through B-4 list treatment, land application, and nutrient removal methods that could be combined to provide wastewater management that satisfies the requirements of the Antidegradation Program. A more detailed discussion of various land application methods can be found in DEP's *Manual of Land Application of Treated Sewage and Industrial Wastewater*, DEP ID: 362-2000-009. Technically feasible combinations

of treatment/disposal processes from these tables may be approved if DEP determines that the proposal meets all antidegradation requirements.

The processes in Tables B-1 through B-4 are not intended to represent a comprehensive list nor are they presented in any preferred order based on treatment removal efficiency. Many factors such as unit construction and combination or modification of processes will determine the ultimate treatment efficiency on a case-by-case basis. Because of the sensitivity of antidegradation waters, filtration units, constructed wetlands, flow equalization, treated effluent storage, or other protections against the release of untreated or inadequately treated wastewater should be an integral component of any treatment process approved by DEP for a direct stream discharge. In addition, DEP will encourage the use of wastewater conveyance, management, and treatment/disposal systems which have the highest reliability and which are the least maintenance intensive.

URSINA BORO NPDES PA 0254380 1/1

SLOPE = $\frac{\Delta z}{\Delta x} = \frac{20'}{6.1 \times 1{,}500} = 0.0022$

ELEV = $mx + b = (0.0022)(1.4 \times 1500) + 1360 = 1364.59 = 1365$

DA = 121 mi² RUN 12 STA 03080000 LAUREL HILL CR @ URSINA

$Q_{7\text{-}10}$ = 4.9 cfs " " " "

Y/1660 = 0.0405

DISCHARGE FLOW = 0.040 MGD

STREAM CODE = 38580

RMI = 1.7

@ RMI = 1.0, elev = $(0.7)(5280)(-0.0022) + 1365$

$= 1357$

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STREAM DIRECTORY

| CODE | LEVEL | SIDE | STREAM NAME OR LOCATION | RIVER MILE | WTR-SHED | QUAD CODE | HIERARCHICAL NUMBER | FMRD LINK |
|---|---|---|---|---|---|---|---|---|
| (32317) | | | OHIO RIVER | | | | | |
| (37185) | | | MONONGAHELA | | | | | |
| (37456) | | | YOUGHIOGHENY RIVER | | | | | |
| (38488) | | | MEADOW RUN (CONTINUED) | | | | | |
| 38534 | 5 | L | SMILEY RUN | 12.02 | 19-E | 2009 | 3-112-015-140-024-00-00-00-00-0-0 | 38535 |
| 38535 | 6 | R | UNNAMED | .34 | 19-E | 2009 | 3-112-015-140-024-01-00-00-00-0-0 | 38536 |
| 38536 | 6 | L | UNNAMED | .84 | 19-E | 2009 | 3-112-015-140-024-02-00-00-00-0-0 | 38537 |
| 38537 | 5 | R | FROM TROUT HOLLOW | 12.06 | 19-E | 2009 | 3-112-015-140-027-00-00-00-00-0-0 | 38538 |
| 38538 | 6 | L | UNNAMED | .92 | 19-E | 2009 | 3-112-015-140-027-02-00-00-00-0-0 | 38539 |
| 38539 | 6 | R | UNNAMED | 1.54 | 19-E | 2009 | 3-112-015-140-027-03-00-00-00-0-0 | 38540 |
| 38540 | 6 | L | UNNAMED | 2.42 | 19-E | 2008 | 3-112-015-140-027-04-00-00-00-0-0 | 38541 |
| 38541 | 5 | R | UNNAMED | 12.82 | 19-E | 2009 | 3-112-015-140-029-00-00-00-00-0-0 | 38542 |
| 38542 | 5 | L | UNNAMED | 12.82 | 19-E | 2009 | 3-112-015-140-030-00-00-00-00-0-0 | 38543 |
| 38543 | 4 | R | UNNAMED | 63.72 | 19-E | 2010 | 3-112-015-141-000-00-00-00-00-0-0 | 38544 |
| 38544 | 4 | R | SHEEPSKIN RUN | 63.88 | 19-E | 2010 | 3-112-015-143-000-00-00-00-00-0-0 | 38545 |
| 38545 | 4 | R | ROCK SPRING RUN | 65.34 | 19-E | 2010 | 3-112-015-145-000-00-00-00-00-0-0 | 38546 |
| 38546 | 5 | L | UNNAMED | 1.94 | 19-E | 1910 | 3-112-015-145-002-00-00-00-00-0-0 | 38547 |
| 38547 | 4 | L | LONG RUN | 65.98 | 19-E | 2010 | 3-112-015-146-000-00-00-00-00-0-0 | 38548 |
| 38548 | 4 | L | ABOVE SUGARLOAF KNOB | 66.57 | 19-E | 2010 | 3-112-015-148-000-00-00-00-00-0-0 | 38549 |
| 38549 | 4 | L | UNNAMED | 66.80 | 19-E | 2010 | 3-112-015-150-000-00-00-00-00-0-0 | 38550 |
| 38550 | 4 | R | UNNAMED | 68.40 | 19-E | 2010 | 3-112-015-151-000-00-00-00-00-0-0 | 38551 |
| 38551 | 4 | R | LICK RUN | 68.85 | 19-E | 2010 | 3-112-015-153-000-00-00-00-00-0-0 | 38552 |
| 38552 | 5 | R | UNNAMED | 1.24 | 19-E | 2010 | 3-112-015-153-001-00-00-00-00-0-0 | 38553 |
| 38553 | 6 | R | UNNAMED | .30 | 19-E | 1910 | 3-112-015-153-001-01-00-00-00-0-0 | 38554 |
| 38554 | 4 | R | CAMP RUN | 68.90 | 19-E | 2010 | 3-112-015-155-000-00-00-00-00-0-0 | 38555 |
| 38555 | 4 | L | UNNAMED | 69.98 | 19-E | 2010 | 3-112-015-156-000-00-00-00-00-0-0 | 38556 |
| 38556 | 4 | L | UNNAMED | 71.08 | 19-E | 2010 | 3-112-015-158-000-00-00-00-00-0-0 | 38557 |
| 38557 | 4 | R | DRAKE RUN | 71.12 | 19-E | 2010 | 3-112-015-159-000-00-00-00-00-0-0 | 38558 |
| 38558 | 5 | R | UNNAMED | .86 | 19-E | 2010 | 3-112-015-159-001-00-00-00-00-0-0 | 38559 |
| 38559 | 6 | R | UNNAMED | .44 | 19-E | 2010 | 3-112-015-159-001-01-00-00-00-0-0 | 38561 |
| 38561 | 5 | L | UNNAMED | 1.63 | 19-E | 2011 | 3-112-015-159-002-00-00-00-00-0-0 | 38562 |
| 38562 | 5 | R | UNNAMED | 2.05 | 19-E | 2011 | 3-112-015-159-003-00-00-00-00-0-0 | 38563 |
| 38563 | 5 | R | LITTLE GLADE RUN | 2.85 | 19-E | 2011 | 3-112-015-159-005-00-00-00-00-0-0 | 38564 |
| 38564 | 6 | R | UNNAMED | .65 | 19-E | 2011 | 3-112-015-159-005-01-00-00-00-0-0 | 38565 |
| 38565 | 6 | R | ALEX RUN | .95 | 19-E | 2011 | 3-112-015-159-005-03-00-00-00-0-0 | 38566 |
| 38566 | 7 | R | UNNAMED | .84 | 19-E | 2010 | 3-112-015-159-005-03-01-00-00-0-0 | 63965 |
| 63965 | 6 | R | UNNAMED | 1.76 | 19-E | 1910 | 3-112-015-159-005-05-00-00-00-0-0 | 63966 |
| 63966 | 6 | L | UNNAMED | 2.68 | 19-E | 1910 | 3-112-015-159-005-06-00-00-00-0-0 | 38567 |
| 38567 | 5 | L | UNNAMED | 3.38 | 19-E | 2011 | 3-112-015-159-006-00-00-00-00-0-0 | 38568 |
| 38568 | 5 | R | UNNAMED | 3.95 | 19-E | 2011 | 3-112-015-159-007-00-00-00-00-0-0 | 38569 |
| 38569 | 5 | L | UNNAMED | 4.29 | 19-E | 2011 | 3-112-015-159-008-00-00-00-00-0-0 | 38570 |
| 38570 | 4 | L | RAMCAT RUN | 72.34 | 19-E | 2010 | 3-112-015-160-000-00-00-00-00-0-0 | 38571 |
| 38571 | 5 | R | UNNAMED | 1.16 | 19-E | 2010 | 3-112-015-160-001-00-00-00-00-0-0 | 38572 |
| 38572 | 5 | L | UNNAMED | 2.16 | 19-E | 2010 | 3-112-015-160-002-00-00-00-00-0-0 | 38573 |
| 38573 | 4 | R | ABOVE HUSTON | 72.46 | 19-E | 2010 | 3-112-015-161-000-00-00-00-00-0-0 | 38574 |
| 38574 | 5 | R | UNNAMED | .68 | 19-E | 2011 | 3-112-015-161-001-00-00-00-00-0-0 | 38575 |
| 38575 | 6 | L | UNNAMED | 1.26 | 19-E | 2011 | 3-112-015-161-001-02-00-00-00-0-0 | 38576 |
| 38576 | 5 | R | UNNAMED | .87 | 19-E | 2011 | 3-112-015-161-003-00-00-00-00-0-0 | 38577 |
| 38577 | 5 | R | UNNAMED | 1.82 | 19-E | 2011 | 3-112-015-161-005-00-00-00-00-0-0 | 38578 |
| 38578 | 4 | R | UNNAMED | 73.00 | 19-F | 2011 | 3-112-015-163-000-00-00-00-00-0-0 | 38579 |
| 38579 | 4 | R | CASSELMAN RIVER | 73.60 | 19-F | 2011 | 3-112-015-165-000-00-00-00-00-0-0 | 38580 |
| 38580 | 5 | R | LAUREL HILL CREEK | .17 | 19-E | 2011 | 3-112-015-165-001-00-00-00-00-0-0 | 38581 |
| 38581 | 6 | R | UNNAMED | 1.14 | 19-E | 2011 | 3-112-015-165-001-01-00-00-00-0-0 | 38582 |
| 38582 | 7 | R | UNNAMED | .65 | 19-E | 2011 | 3-112-015-165-001-01-03-00-00-0-0 | 38583 |
| 38583 | 8 | R | UNNAMED | .38 | 19-E | 2011 | 3-112-015-165-001-01-03-03-00-0-0 | 38584 |
| 38584 | 8 | R | UNNAMED | .57 | 19-E | 2011 | 3-112-015-165-001-01-03-05-00-0-0 | 38585 |
| 38585 | 7 | R | UNNAMED | 1.86 | 19-E | 2011 | 3-112-015-165-001-01-05-00-00-0-0 | 38586 |
| 38586 | 7 | R | UNNAMED | 1.98 | 19-E | 2011 | 3-112-015-165-001-01-07-00-00-0-0 | 63958 |
| 63958 | 6 | L | UNNAMED | 1.33 | 19-E | 2011 | 3-112-015-165-001-02-00-00-00-0-0 | 38587 |
| 38587 | 6 | L | UNNAMED | 3.04 | 19-E | 2011 | 3-112-015-165-001-04-00-00-00-0-0 | 38588 |
| 38588 | 7 | R | UNNAMED | .32 | 19-E | 2011 | 3-112-015-165-001-04-03-00-00-0-0 | 38589 |
| 38589 | 7 | R | UNNAMED | .91 | 19-E | 2011 | 3-112-015-165-001-04-05-00-00-0-0 | 63959 |
| 63959 | 6 | R | UNNAMED | 4.34 | 19-E | 2011 | 3-112-015-165-001-05-00-00-00-0-0 | 38590 |
| 38590 | 6 | L | PADDYTOWN HOLLOW RUN | 4.79 | 19-E | 2011 | 3-112-015-165-001-06-00-00-00-0-0 | 38591 |
| 38591 | 7 | R | UNNAMED | .48 | 19-E | 2011 | 3-112-015-165-001-06-03-00-00-0-0 | 38592 |
| 38592 | 7 | L | UNNAMED | 1.10 | 19-E | 2011 | 3-112-015-165-001-06-04-00-00-0-0 | 38593 |
| 38593 | 7 | L | UNNAMED | 1.41 | 19-E | 2011 | 3-112-015-165-001-06-06-00-00-0-0 | 38594 |

MAP SEGMENT 13

03079500 LAUREL HILL CREEK AT BAKERSVILLE, PA.

LOCATION.--Lat 40°01'58", long 79°12'48", Somerset County, at bridge on State Highway 31, at Bakersville.

DRAINAGE AREA.--Not determined.

TRIBUTARY TO.--Casselman River.

MISCELLANEOUS MEASUREMENT.--Aug. 11, 1950, 10.3 $ft^3/s$ (0.289 $m^3/s$).

03079600 LAUREL HILL CREEK NEAR BAKERSVILLE, PA.

LOCATION.--Lat 40°00'32", long 79°14'04", Somerset County, at bridge at head of Laurel Lake, 2.3 mi (3.7 km) southwest of Bakersville, and 3.3 mi (5.3 km) below Kooser Run.

DRAINAGE AREA.--38.2 $mi^2$ (98.9 $km^2$).

TRIBUTARY TO.--Casselman River.

LOW-FLOW FREQUENCY.--Estimated average annual minimum discharge for seven consecutive days.

| Recurrence interval | 2 years | 10 years |
|---|---|---|
| Discharge | 3.5 $ft^3/s$ | 1.0 $ft^3/s$ |

BASIS OF ESTIMATE.--Correlated with Redstone Creek at Waltersburg using eight discharge measurements made in the period 1970-72.

03080000 LAUREL HILL CREEK AT URSINA, PA.

LOCATION.--Lat 39°49'17", long 79°19'16", Somerset County, on right bank 500 ft (150 m) downstream from bridge on State Highway 53, at Ursina, and 2.7 mi (4.3 km) upstream from mouth.

DRAINAGE AREA.--121 $mi^2$ (313 $km^2$).

TRIBUTARY TO.--Casselman River.

AVERAGE DISCHARGE.--54 years, 264 $ft^3/s$ (7.48 $m^3/s$).

EXTREMES.--1918-72: Maximum discharge, 10,900 $ft^3/s$ (309 $m^3/s$) Oct. 15, 1954; minimum, 2.2 $ft^3/s$ (0.062 $m^3/s$) Sept. 26, 1932.

REMARKS.--Slight regulation at low flow by mills above station.

MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW.-- PERIOD: 1920-72

| Period of consecutive days | Discharge, in cubic feet per second, for indicated recurrence interval in years | | | | | |
|---|---|---|---|---|---|---|
| | 2 | 5 | 10 | 20 | 30 | 50 |
| 7 | 12 | 6.5 | 4.9 | 3.7 | 3.2 | 2.7 |
| 14 | 14 | 7.7 | 5.6 | 4.3 | 3.7 | 3.1 |
| 30 | 20 | 10 | 7.7 | 5.8 | 5.0 | 4.2 |
| 60 | 33 | 16 | 12 | 8.3 | 7.0 | 5.9 |
| 120 | 60 | 28 | 20 | 14 | 12 | 9.5 |
| 183 | 100 | 60 | 45 | 35 | 29 | 24 |

DURATION OF DAILY FLOW.-- PERIOD: 1919-72

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

| percent | 2 | 5 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 95 | 98 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $ft^3/s$ | 1,400 | 950 | 650 | 400 | 270 | 200 | 140 | 100 | 67 | 41 | 21 | 13 | 8.1 |

## 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 |
|---|---|---|---|---|---|---|---|---|---|
| | 19E | 38580 | LAUREL HILL CREEK | 1.700 | 1365.00 | 121.00 | 0.00220 | 0.00 | ☑ |

**Stream Data**

| Design Cond. | LFY (cfsm) | Trib Flow (cfs) | Stream Flow (cfs) | Rch Trav Time (days) | Rch Velocity (fps) | WD Ratio | Rch Width (ft) | Rch Depth (ft) | Tributary Temp (°C) | Tributary pH | Stream Temp (°C) | Stream pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q7-10 | 0.040 | 0.00 | 0.00 | 0.000 | 0.000 | 40.0 | 100.00 | 2.50 | 20.00 | 7.00 | 0.00 | 0.00 |
| Q1-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |
| Q30-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |

**Discharge Data**

| Name | Permit Number | Existing Disc Flow (mgd) | Permitted Disc Flow (mgd) | Design Disc Flow (mgd) | Reserve Factor | Disc Temp (°C) | Disc pH |
|---|---|---|---|---|---|---|---|
| Ursina Borough | PA0254380 | 0.0400 | 0.0400 | 0.0400 | 0.000 | 25.00 | 7.00 |

**Parameter Data**

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

## 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 |
|---|---|---|---|---|---|---|---|---|
| 19E | 38580 | LAUREL HILL CREEK | 1.000 | 1357.00 | 124.00 | 0.00220 | 0.00 | ☑ |

### Stream Data

| Design Cond. | LFY (cfsm) | Trib Flow (cfs) | Stream Flow (cfs) | Rch Trav Time (days) | Rch Velocity (fps) | WD Ratio | Rch Width (ft) | Rch Depth (ft) | Tributary Temp (°C) | Tributary pH | Stream Temp (°C) | Stream pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q7-10 | 0.040 | 0.00 | 0.00 | 0.000 | 0.000 | 40.0 | 100.00 | 2.50 | 20.00 | 7.00 | 0.00 | 0.00 |
| Q1-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |
| Q30-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |

### Discharge Data

| Name | Permit Number | Existing Disc Flow (mgd) | Permitted Disc Flow (mgd) | Design Disc Flow (mgd) | Reserve Factor | Disc Temp (°C) | Disc pH |
|---|---|---|---|---|---|---|---|
| | | 0.0000 | 0.0000 | 0.0000 | 0.000 | 0.00 | 7.00 |

### Parameter Data

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

## WQM 7.0 Hydrodynamic Outputs

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 19E | 38580 | LAUREL HILL CREEK |

| RMI | Stream Flow (cfs) | PWS With (cfs) | Net Stream Flow (cfs) | Disc Analysis Flow (cfs) | Reach Slope (ft/ft) | Depth (ft) | Width (ft) | W/D Ratio | Velocity (fps) | Reach Trav Time (days) | Analysis Temp (°C) | Analysis pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Q7-10 Flow** | | | | | | | | | | | | |
| 1.700 | 4.84 | 0.00 | 4.84 | .0619 | 0.00220 | 2.5 | 100 | 40 | 0.02 | 2.182 | 20.06 | 7.00 |
| **Q1-10 Flow** | | | | | | | | | | | | |
| 1.700 | 3.10 | 0.00 | 3.10 | .0619 | 0.00220 | NA | NA | NA | 0.01 | 3.385 | 20.10 | 7.00 |
| **Q30-10 Flow** | | | | | | | | | | | | |
| 1.700 | 6.58 | 0.00 | 6.58 | .0619 | 0.00220 | NA | NA | NA | 0.03 | 1.610 | 20.05 | 7.00 |

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## WQM 7.0 Modeling Specifications

| | | | |
|---|---|---|---|
| Parameters | Both | Use Inputted Q1-10 and Q30-10 Flows | ☑ |
| WLA Method | EMPR | Use Inputted W/D Ratio | ☐ |
| Q1-10/Q7-10 Ratio | 0.64 | Use Inputted Reach Travel Times | ☐ |
| Q30-10/Q7-10 Ratio | 1.36 | Temperature Adjust Kr | ☑ |
| D.O. Saturation | 90.00% | Use Balanced Technology | ☑ |
| D.O. Goal | 6 | | |

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# WQM 7.0 Wasteload Allocations

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 19E | 38580 | LAUREL HILL CREEK |

## NH3-N Acute Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 1.700 | Ursina Borough | 9.6 | 50 | 9.6 | 50 | 0 | 0 |

## NH3-N Chronic Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 1.700 | Ursina Borough | 1.91 | 25 | 1.91 | 25 | 0 | 0 |

## Dissolved Oxygen Allocations

| RMI | Discharge Name | CBOD5 | | NH3-N | | Dissolved Oxygen | | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline (mg/L) | Multiple (mg/L) | Baseline (mg/L) | Multiple (mg/L) | Baseline (mg/L) | Multiple mg/L) | | |
| 1.70 | Ursina Borough | 25 | 25 | 25 | 25 | 3 | 3 | 0 | 0 |

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# WQM 7.0 D.O.Simulation

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 19E | 38580 | LAUREL HILL CREEK |

| RMI | Total Discharge Flow (mgd) | Analysis Temperature (°C) | Analysis pH |
|---|---|---|---|
| 1.700 | 0.040 | 20.063 | 7.000 |
| **Reach Width (ft)** | **Reach Depth (ft)** | **Reach WDRatio** | **Reach Velocity (fps)** |
| 100.000 | 2.500 | 40.000 | 0.020 |
| **Reach CBOD5 (mg/L)** | **Reach Kc (1/days)** | **Reach NH3-N (mg/L)** | **Reach Kn (1/days)** |
| 2.29 | 0.062 | 0.32 | 0.703 |
| **Reach DO (mg/L)** | **Reach Kr (1/days)** | **Kr Equation** | **Reach DO Goal (mg/L)** |
| 8.177 | 0.458 | O'Connor | 6 |
| **Reach Travel Time (days)** | | | |
| 2.182 | | | |

**Subreach Results**

| TravTime (days) | CBOD5 (mg/L) | NH3-N (mg/L) | D.O. (mg/L) |
|---|---|---|---|
| 0.218 | 2.26 | 0.27 | 8.03 |
| 0.436 | 2.23 | 0.23 | 7.93 |
| 0.655 | 2.20 | 0.20 | 7.86 |
| 0.873 | 2.17 | 0.17 | 7.81 |
| 1.091 | 2.14 | 0.15 | 7.79 |
| 1.309 | 2.11 | 0.13 | 7.79 |
| 1.527 | 2.08 | 0.11 | 7.80 |
| 1.745 | 2.05 | 0.09 | 7.82 |
| 1.964 | 2.03 | 0.08 | 7.85 |
| 2.182 | 2.00 | 0.07 | 7.89 |

## WQM 7.0 Effluent Limits

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 19E | 38580 | LAUREL HILL CREEK |

| RMI | Name | Permit Number | Disc Flow (mgd) | Parameter | Effluent Limit* (mg/L) | Max Effluent Limit** (mg/L) |
|---|---|---|---|---|---|---|
| 1.700 | Ursina Borough | PA0254380 | 0.040 | CBOD5 | 25 | |
| | | | | NH3-N | 25 | 50 |
| | | | | Dissolved Oxygen | 3 | |

* 30 Day Average
** 24 Hour Average

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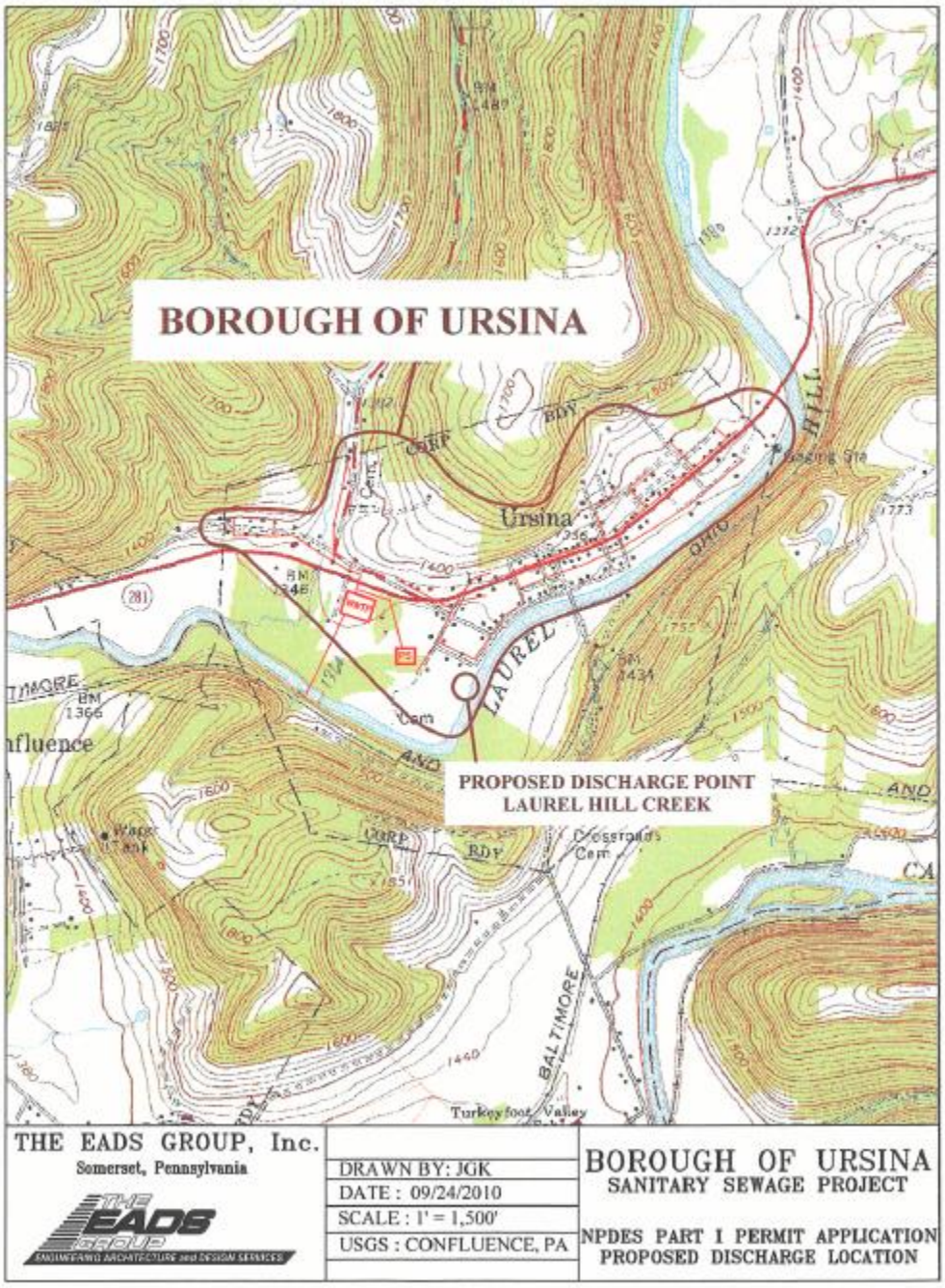
BOROUGH OF URSINA
PROPOSED DISCHARGE POINT
LAUREL HILL CREEK
Ursina
LAUREL
BALTIMORE
Turkeyfoot Valley
THE EADS GROUP, Inc.
Somerset, Pennsylvania
DRAWN BY: JGK
DATE : 09/24/2010
SCALE : 1" = 1,500'
USGS : CONFLUENCE, PA
BOROUGH OF URSINA
SANITARY SEWAGE PROJECT
NPDES PART I PERMIT APPLICATION
PROPOSED DISCHARGE LOCATION

# ATTACHMENT E

# November 28, 2023 Email

**From:** Jake Bolby <jbolby@eadsgroup.com>
**Sent:** Tuesday, November 28, 2023 9:54 AM
**To:** Conrad, Stephanie <stepconrad@pa.gov>
**Cc:** Iasmin, Mahbuba <moiasmin@pa.gov>; jrmiller1 <jrmiller1@zoominternet.net>; Janet M. Nolf <ursinaborough@verizon.net>
**Subject:** RE: [External] NPDES Permit No. PA0254380, Ursina Borough STP, Ursina Borough, Somerset County

Stephanie,

The quote for a UV system is attached. If you have any questions about the quote please let me know. Below is an estimated project cost summary and schedule for implementation of the UV system.

1. Total Estimated Cost - $230,000
    a. UV Equipment - $70,000 (increased by 10% to account for contractor mark-up and inflation between today's quote and actual purchase date)
    b. Associated & Accessory Equipment (page 9 of quote) - $75,000
    c. Electrical Upgrades - $35,000
    d. Design & Permitting - $25,0003
    e. Construction Documentation - $15,000
    f. Contingency - $10,000
2. Schedule – 3 years (34 – 36 months)
    a. Funding Acquisition – 12 to 15 months
        i. Ursina does not have reserve funds in the amount necessary to complete the UV project and will need to acquire grant funds. Ursina's current sewer rates are at the affordable rate level and a loan in this amount is most likely not feasible. It may be possible to allocate matching funds for a portion of the cost using loan and/or reserve funds.
        ii. Anticipated Funding Sources – Small Water & Sewer Grant or Community Development Block Grant
        iii. This schedule is estimated, we have recently seen shorter and longer times for fund awards depending on the program. I believe the current round of Small Water & Sewer Grants have been under consideration for about 8 months. The 2023 CDBG funds are anticipated to be allocated in early 2024. Applications for 2023 CDBG funds were made in October of 2022.
    b. Design – 4 months
    c. Permitting – 4-5 months
    d. Bid & Award – 2 -3 months
    e. Construction – 9 months (total)
        i. UV Lead Time – 18 weeks (4.5 months)
        ii. Excavation, Concrete, Site Piping, SCADA integration, Electrical
        iii. Start-up

The schedule will have some aspects occur concurrently, take additional time, and take less time. Overall we believe a 3 year total implementation schedule is feasible and allows for variability and accommodation of unknowns.

Please call if you would like to discuss.

Thanks,

Jacob T. Bolby, P.E.
Project Manager

**The EADS Group, Inc.**
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C: 724-689-7228