Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0218634**
Facility Type	**Municipal**	APS ID	**1048715**
Major / Minor	**Minor**	Authorization ID	**1371163**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Indiana County Municipal Service Authority**	Facility Name	**Indiana County Municipal Service Authority Pine Township**
Applicant Address	602 Kolter Drive Indiana, PA 15701-3570	Facility Address	5955 Rt 403 N Heilwood, PA 15745
Applicant Contact	Tricia Lefko	Facility Contact	Tricia Lefko
Applicant Phone	(724) 349-6640	Facility Phone	(724) 349-6640
Client ID	38534	Site ID	246852
Ch 94 Load Status	Not Overloaded	Municipality	Pine Township
Connection Status	No Limitations	County	Indiana
Date Application Received	September 30, 2021	EPA Waived?	Yes
Date Application Accepted	April 30, 2025	If No, Reason	

Purpose of Application: This is an application request for NPDES renewal.

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Heilwood WWTP located at 5955 Route 403 N, Heilwood, PA 15745 in Indiana County, municipality of Pine Township. The existing permit became effective on May 1, 2017 and expired on April 30, 2022. The application for renewal was received by DEP Northwest Regional Office (NWRO) on September 30, 2021.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.045 MGD treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facility (Level 1) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Indiana County Commissioners and Pine Township Supervisors and the notice was received by the parties on August 27, 2021. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be the Yellow River. The sequence of receiving streams that the Yellow River discharges into are Two Lick Creek, Blacklick Creek, Conemaugh

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineering Specialist Nick Hong (via electronic signature)	May 14, 2025
X		Adam Olesnanik, P.E. / Environmental Engineer Manager Adam Olesnanik	May 21, 2025

Summary of Review

River, Kiskiminetas River and traveling south through several states prior to discharging to the Gulf of America. The receiving water has protected water usage for cold water fishes (CWF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Yellow River is a Category 2 and 4a stream listed in the 2024 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports recreational uses. The receiving waters is impaired for aquatic life due to metals from acid mine drainage. The receiving waters is subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Due to the EPA Triennial Review, monitoring shall be required for E. Coli.**

Sludge use and disposal description and location(s): Biosolids disposed at ICMSA Creekside Compost Unit in Indiana County in Washington Township. Biosolids disposed at ICMSA Creekside STP in Indiana County in Washington Township as landfill

The proposed permit will expire five (5) years from the effective date.

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

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Northwest Regional Office (NWRO), 230 Chestnut Street, Meadville, PA 16335. To make an appointment for file review, contact the NWRO File Review Coordinator at 814.332.6945.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	Heilwood WWTP
NPDES Permit #	PA0218634
Physical Address:	5955 Route 403 N Heilwood, PA 15745
Mailing Address:	602 Kolter Drive Indiana, PA 15701
Contact:	Tricia Lefko Compliance Superintendent tlefko@icoma.org
Consultant:	There was not a consultant utilized for this NPDES renewal.

1.2 Permit History

Permit submittal included the following information.

- NPDES Application
- Influent Sample Data
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 5955 Route 403 N, Heilwood, PA 15745. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

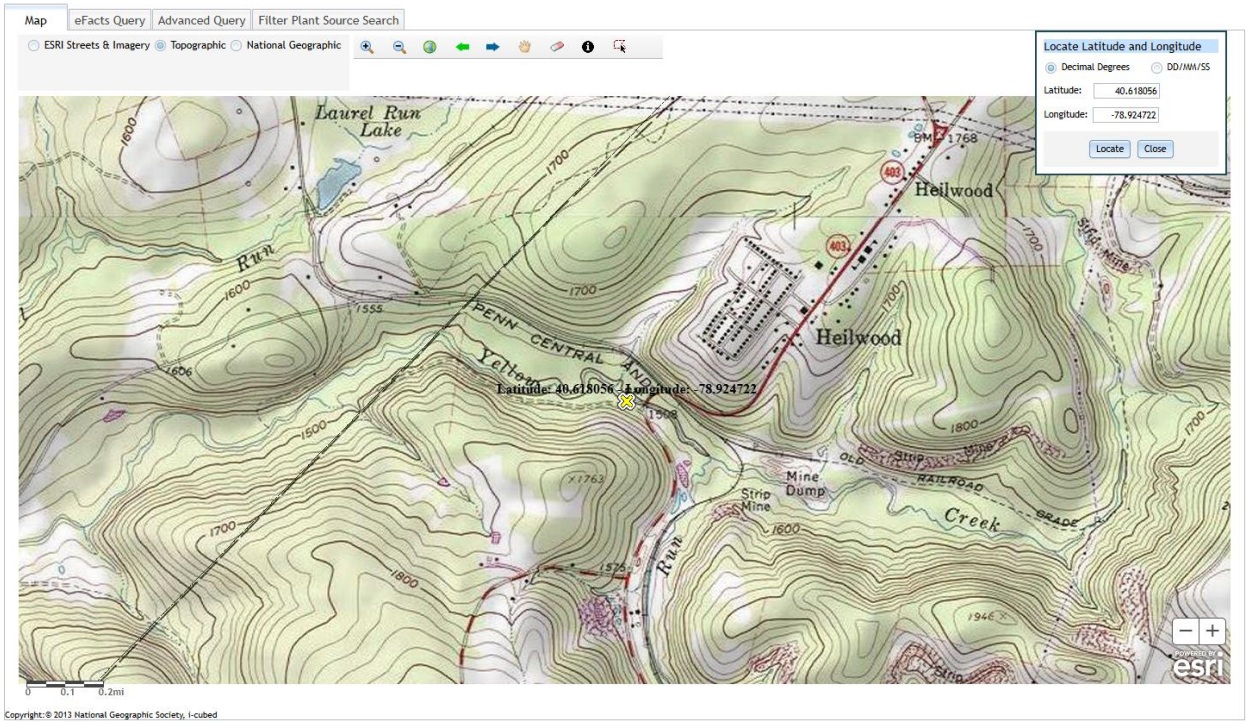
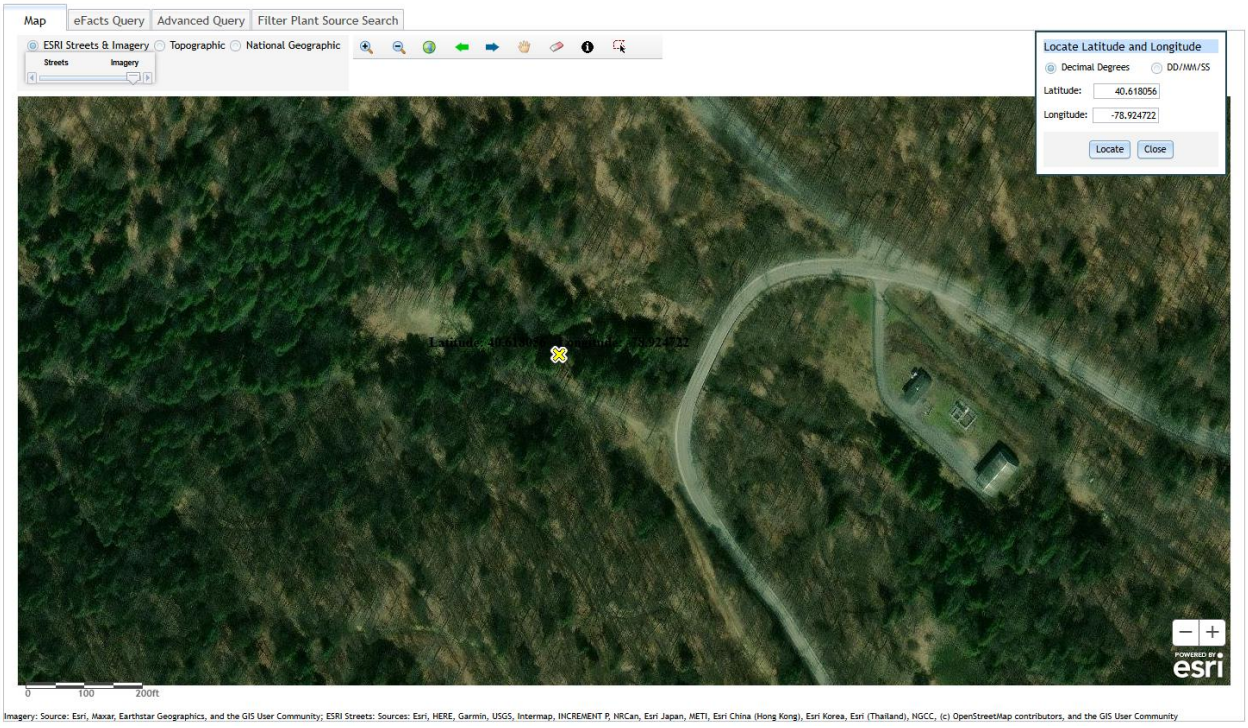


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The facility receives 100% of their wastewater contributions from Pine Township.

2.2 Description of Wastewater Treatment Process

The subject facility is a 0.045 MGD design flow facility. The subject facility treats wastewater using an equalization basin, extended aeration, clarifier, and ultraviolet light for disinfection prior to discharge through the outfall. The facility is being evaluated for flow, pH, dissolved oxygen, CBOD5, TSS, fecal coliform, nitrogen species, phosphorus, iron, aluminum, and manganese. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary

Treatment Facility Name: Heilwood STP

WQM Permit No.	Issuance Date
3200404	07/20/2001

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Ultraviolet	0.031

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.045	105	Not Overloaded		

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No. 001 **Design Flow (MGD)** .045
Latitude 40º 37' 5.00" **Longitude** -78º 55' 29.00"
Wastewater Description: Sewage Effluent

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Lime to increase alkalinity

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40º 37' 5.00" , **Longitude** 78º 55' 29.00" , **River Mile Index** 19.8 , **Stream Code** 44118

Receiving Waters: Yellow Creek

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.045	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	9.4	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	XXX	XXX	XXX	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	XXX	XXX	XXX	2/month	Grab
Total Suspended Solids	11.3	XXX	XXX	30.0	XXX	60.0	2/month	Grab
Fecal Coliform (No/100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No/100 ml) May 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ultraviolet light transmittance (%)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	9.4	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	4.1	XXX	XXX	11.0	XXX	22.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

04/01/2021:

The site maintains an NPDES Permit for the treatment of domestic sewage generated from approximately 150 homes. The site is nearing its 20th anniversary and has approached the time where it will begin requiring larger and increased maintenance. As with most of ICMSA's plants, budget constraints due to the small customer base of each plant, may make continued operations difficult. Planning now should forecast such maintenance and plans be made accordingly. This plant is a single train entity, which can make any maintenance on any single part of the plant difficult given that flows cannot be redirected. A DMR Review found violations for fecal and NH3N. These prior violations were settled with a Consent Assessment and Civil Penalty (CACP), and since then no violations have occurred. Scott Uher, the operator of this plant, indicates he cleans the bulbs weekly and is sure to maintain the system for compliance. Sludge appears to be wasted and removed more regularly than in the past. It is reiterated that this is probably the most important obligation in operating these systems

02/28/2024:

A phone call was received from ICMSA Operator, Scot Bash on Tuesday, February 27th. Mr. Bash informed DEP of an incident that was taking place at the Heilwood STP in Indiana County. The incident was determined to be home heating oil (kerosene) entering the plant. The plant was shutdown to prevent the kerosene from being discharged. Efforts were concentrated in skimming and removing the kerosene from the plant with absorbent pads. On Wednesday, the EQ tank was in better condition. Chlorine tablets were in place (with temporary DEP approval for concentration less than .5 mg/L) prior to the outfall to aid in disinfection with UV lamp effectiveness in question with the high turbidity. The aerobic microorganisms in the plant are believed to be dead and the plant will need to be re-seeded. Red worms (midge fly larvae) could be seen dead in the clarifier. The outfall was observed to Yellow Creek with no sheen visible. A faint smell of kerosene was noticed from inside the duckbill check valve.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.0318 MGD in February 2025. The design capacity of the treatment system is 0.045 MGD.

The off-site laboratory used for the analysis of the parameters was Fairway Laboratories located at 2019 9th Avenue, Altoona, PA 16603.

DMR Data for Outfall 001 (from March 1, 2024 to February 28, 2025)

Parameter	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24
Flow (MGD) Average Monthly	0.0318	0.02179	0.0232	0.0243	0.0249	0.0203	0.0219	0.024	0.0195	0.025	0.0317	0.0245
pH (S.U.) Minimum	6.7	6.6	6.7	6.9	6.9	6.5	6.3	6.9	6.4	6.9	6.7	6.7
pH (S.U.) Maximum	7.4	7.4	7.4	7.4	7.5	7.4	7.3	7.5	7.6	7.4	7.3	7.3
DO (mg/L) Minimum	4.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.2	4.0
CBOD5 (lbs/day) Average Monthly	< 0.8	< 0.5	< 0.5	< 0.6	< 0.6	< 0.6	< 0.6	< 0.9	< 0.5	< 0.7	0.8	0.9
CBOD5 (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 4.0	< 3.0	< 3.0	4.0	6.0
CBOD5 (mg/L) Instantaneous Maximum	< 3.0	< 3.0	< 3.0	3.17	< 3.0	< 3.0	3.97	5.51	3.16	3.5	4.1	7.78
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	51.0	54.0	54.0	43.0	53.0	52.0	43.0	38.0	65.0	52.0	46.0	33.0
TSS (lbs/day) Average Monthly	1.2	1.3	0.9	2.1	1.5	1.5	2.4	1.0	1.0	< 0.7	2.0	1.2
TSS (lbs/day) Raw Sewage Influent Average Monthly	75.0	62.0	48.0	57.0	89.0	56.0	41.0	39.0	57.0	51.0	48.0	41.0
TSS (mg/L) Average Monthly	4.8	7.3	5.0	11.0	8.0	7.0	14.0	5.0	7.0	< 3.0	9.0	7.0
TSS (mg/L) Instantaneous Maximum	7.2	12.8	5.2	12.4	12.8	8.0	20.5	7.2	8.4	5.2	9.6	7.6
Fecal Coliform (No./100 ml) Geometric Mean	< 2.0	< 2.0	< 1.0	< 3.0	< 4.0	< 5.0	8.0	7.0	< 1.0	< 1.0	35.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	4.0	8.4	2.0	8.6	13.4	5.2	11.0	17.1	< 1.0	2.0	46.5	< 1.0

UV Transmittance (%) Average Monthly	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Total Nitrogen (mg/L) Daily Maximum			< 0.5									
Ammonia (lbs/day) Average Monthly	< 0.03	< 0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.04	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (mg/L) Instantaneous Maximum	< 0.1	< 0.1	0.3727	< 0.1	< 0.01	< 0.1	0.333	0.2613	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (mg/L) Daily Maximum			0.6									
Total Aluminum (mg/L) Daily Maximum			< 0.1									
Total Iron (mg/L) Daily Maximum			< 0.2									
Total Manganese (mg/L) Daily Maximum			< 0.02									

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in May 1, 2017 to April 30, 2025, the following were observed effluent non-compliances.

Summary of Non-Compliance with NPDES Effluent Limits
Beginning May 1, 2017 and Ending April 30, 2025

NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	FACILITY_COMMENTS
6/27/2017	Violation of permit condition	Effluent	Fecal Coliform	> 2419.6	>	1000	No./100 ml	Instantaneous Maximum	
6/27/2017	Violation of permit condition	Effluent	Flow	0.047	>	.045	MGD	Average Monthly	
7/25/2017	Violation of permit condition	Effluent	Fecal Coliform	1732.9	>	1000	No./100 ml	Instantaneous Maximum	
3/22/2018	Violation of permit condition	Effluent	Flow	0.061	>	.045	MGD	Average Monthly	Heavy rains for over a week.
4/19/2018	Violation of permit condition	Effluent	Dissolved Oxygen	1.9	<	4.0	mg/L	Minimum	
5/23/2018	Violation of permit condition	Effluent	Flow	0.052	>	.045	MGD	Average Monthly	
6/28/2018	Sample type not in accordance with permit	Other Violations	Ultraviolet light transmittance						
6/28/2018	Violation of permit condition	Effluent	Flow	0.047	>	.045	MGD	Average Monthly	
7/25/2018	Violation of permit condition	Effluent	Flow	0.055	>	.045	MGD	Average Monthly	
8/24/2018	Violation of permit condition	Effluent	Fecal Coliform	> 2419.6	>	1000	No./100 ml	Instantaneous Maximum	
10/26/2018	Violation of permit condition	Effluent	Flow	0.055	>	.045	MGD	Average Monthly	
12/20/2018	Violation of permit condition	Effluent	Flow	0.049	>	.045	MGD	Average Monthly	
1/25/2019	Violation of permit condition	Effluent	Ammonia-Nitrogen	28.3	>	25.0	mg/L	Average Monthly	
2/15/2019	Violation of permit condition	Effluent	Ammonia-Nitrogen	32.6	>	25.0	mg/L	Average Monthly	
3/25/2019	Violation of permit condition	Effluent	Ammonia-Nitrogen	27.6	>	25.0	mg/L	Average Monthly	
3/25/2019	Violation of permit condition	Effluent	Ammonia-Nitrogen	9.6	>	9.4	lbs/day	Average Monthly	
6/26/2019	Violation of permit condition	Effluent	Fecal Coliform	> 2419.6	>	1000	No./100 ml	Instantaneous Maximum	
6/26/2019	Violation of permit condition	Effluent	Fecal Coliform	> 520	>	200	No./100 ml	Geometric Mean	
7/20/2019	Violation of permit condition	Effluent	Fecal Coliform	236	>	200	No./100 ml	Geometric Mean	
7/20/2019	Violation of permit condition	Effluent	Fecal Coliform	2419	>	1000	No./100 ml	Instantaneous Maximum	
4/16/2025	Violation of permit condition	Effluent	Dissolved Oxygen	2.8	<	4.0	mg/L	Minimum	
4/16/2025	Violation of permit condition	Effluent	Total Suspended Solids	42.5	>	30.0	mg/L	Average Monthly	

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning in May 1, 2017 to April 30, 2025, there following were observed enforcement actions.

Summary of Enforcement Actions
Beginning May 1, 2017 and Ending April 30, 2025

ENF ID	ENF TYPE	ENF TYPE DESC	DATE	EXECUTED DATE	VIOL CODE ID	VIOLATIONS	ENF FINALSTATUS	DATE
373671	NOV	Notice of Violation	04/08/2019	04/08/2019	17327	94.21	Comply/Closed	03/11/2020
377830	NOV	Notice of Violation	08/08/2019	07/16/2019	17291	92A.44	Comply/Closed	10/17/2019
385419	CACP	Consent Assessment of Civil Penalty	04/29/2020	04/29/2020	17291	92A.44	Comply/Closed	04/29/2020

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility is as follows.

2024

Sewage Sludge / Biosolids Production Information

Hauled Off-Site			
2024	Gallons	% Solids	Dry Tons
January			
February			
March	7000	1.4	0.409
April			
May	3500	1.5	0.219
June			
July			
August			
September	3500	1.3	0.19
October	7000	2.25	0.657
November			
December			

Notes:

Biosolids disposed at ICMSA Creekside Compost Unit in Indiana County in Washington Township

Biosolids disposed at ICMSA Creekside STP in Indiana County in Washington Township as landfill

3.5 Open Violations

As of May 2025, the client has open violations for the ICMSA Rossiter facility. The NPDES permit for the subject facility may be withheld until the open violations have been addressed.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be the Yellow River. The sequence of receiving streams that the Yellow River discharges into are Two Lick Creek, Blacklick Creek, Conemaugh River, Kiskiminetas River and traveling south through several states prior to discharging to the Gulf of America.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Central Indiana County Water Authority (PWS ID # 5320040) located approximately 15 miles downstream of the subject facility on the Yellow Creek. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2024 Integrated List of All Waters (303d Listed Streams)

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2024 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 and 4a waterbody. The surface waters is an attaining stream that supports recreational uses. The receiving stream is impaired for aquatic life due to metals from acid mine drainage. The designated use has been classified as protected waters for cold water fishes (CWF)

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is Conemaugh River station (WQN810). This WQN station is located approximately 47 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Yellow Creek Lake near Brush Valley, PA station (USGS station number 3042260). This gauge station is located approximately 10 miles downstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 7.4 and the stream water temperature was estimated to be 23.6 C.

The hardness of the stream was estimated from the water quality network to be 178 mg/l $CaCO_3$.

The ammonia-nitrogen background was estimated to be 0.07 mg/l.

The low flow yield and the Q710 for the subject facility was estimated using StreamStats.

The low flow yield is 0.066 $ft^3/s/mi^2$ and the Q710 is 0.512 ft^3/s.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.045
Latitude	40º 37' 5.52"	Longitude	-78º 55' 28.86"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Yellow Creek (CWF)	Stream Code	44118
NHD Com ID	123724688	RMI	19.1
Drainage Area	7.7	Yield (cfs/mi^2)	0.066
Q_{7-10} Flow (cfs)	0.512	Q_{7-10} Basis	StreamStats
Elevation (ft)	1495	Slope (ft/ft)	
Watershed No.	18-D	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Background/Ambient Data		Data Source
pH (SU)	7.4	WQN810 / Median July to Sept
Temperature (°C)	23.6	WQN810 / Median July to Sept
Hardness (mg/L)	178	WQN810 / Historical Median
Other:		

Nearest Downstream Public Water Supply Intake	Central Indiana County Water Authority		
PWS Waters	Yellow Creek	Flow at Intake (cfs)	
PWS RMI	4.59	Distance from Outfall (mi)	15

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

5.2.2 Mass Based Limits

For publicly owned treatment works (POTW), mass loadings are calculated based upon design flow rate of the facility and the permit limit concentration. The generalized calculation for mass loadings is shown below:

$$Quantity\left(\frac{lb}{day}\right) = (MGD)(Concentration)(8.34)$$

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

The modeling point nodes utilized for this facility are summarized below.

General Data 1	***(Modeling Point #1)***	***(Modeling Point #2)***	***Units***
Stream Code	44118	44118	
River Mile Index	19.1	16.84	miles
Elevation	1495	1410	feet
Latitude	40.618056	40.612485	
Longitude	-78.924722	-78.958947	
Drainage Area	7.7	10.7	sq miles
Low Flow Yield	0.066	0.073	cfs/sq mile

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) a 30-day average concentration for CBOD5 in the discharge;
(c) a 30-day average concentration for the NH_3-N in the discharge;
(d) *24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 Toxics Modeling

The Toxics Management Spreadsheet model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. Toxics Management Spreadsheet does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

Acute Fish Criterion (AFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e.15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

Chronic Fish Criterion (CFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

Threshold Human Health (THH) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

Cancer Risk Level (CRL) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The Toxics Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

5.3.2.1 Determining if NPDES Permit Will Require Monitoring/Limits in the Proposed Permit for Toxic Pollutants

To determine if Toxics modeling is necessary, DEP has developed a Toxics Management Spreadsheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters. The toxics reviewed for reasonable potential were the following pollutants: aluminum, iron, and manganese.

The monitoring data used for the TMS modeling was DMR data from 2018 to 2024. The rationale for reviewing the toxics was for protection for the TMDL.

Based upon the SOP- Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants (Revised January 10, 2019), monitoring and/or limits will be established as follows.

(a) When reasonable potential is demonstrated, establish limits where the maximum reported concentration equals or exceeds 50% of the WQBEL.
(b) For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
(c) For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Applicable monitoring or permit limits for toxics are summarized in Section 6.

The Toxics Management Spreadsheet output has been included in Attachment B.

5.3.3 Whole Effluent Toxicity (WET)

The facility is not subject to WET.

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$TMDL = \Sigma WLAs + \Sigma LAs + MOS$$

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility discharges into a local TMDL. The TMDL is summarized in the *TMDLs for Streams Impaired by Acid Mine Drainage in the Kiskiminetas-Conemaugh River Watersheds*, Pennsylvania report prepared by TetraTech on January 29, 2010 (TMDL Kiskiminetas-Conemaugh River Watersheds).

The Kiskiminetas River watershed is in western Pennsylvania. It encompasses part or all of Cambria, Somerset, Indiana, and Westmoreland counties, including the drainages of the Conemaugh, Little Conemaugh, and Stonycreek rivers. The watershed contains several large and small reservoirs, including the Loyalhanna, Conemaugh, Beaver Run, Two Lick Creek, and Yellow Creek reservoirs (TMDL Kiskiminetas-Conemaugh River Watersheds 2).

Of the almost 5,000 stream segments in the watershed, 29 percent are listed as impaired and do not support their designated aquatic life use. The watershed has a long history of coal mining, which left many abandoned mine lands (AMLs) and associated features that contribute mine drainage to surface waters. Of the total impaired waters in the watershed, 59 percent of all impairments are attributed to AMD and its impacts (singly or in combination with other sources and causes of pollutants): high levels of metals, low pH, and increased rates of siltation (TMDL Kiskiminetas-Conemaugh River Watersheds 5).

When calculating TMDLs, numeric instream water quality target concentrations are established to ensure meeting water quality criteria and protection of beneficial uses, in this case, various aquatic life uses and potable water supply. The target concentrations for this TMDL were based on established numeric water quality criteria of 750 micrograms per liter (µg/L) aluminum, 1,500 µg/L total iron, 300 µg/L dissolved iron, and 1,000 µg/L manganese (TMDL Kiskiminetas-Conemaugh River Watersheds 9)

Monitoring for aluminum, iron, and manganese has been recommended for the proposed permit. Annual monitoring shall continue to the proposed permit.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus (c) Non-Conventional Pollutants, and (d) Chapter 92a.61 targeted parameters

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection
Heilwood WWTP, PA0218634

Parameter	Permit Limitation Required by[1]:	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 4.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 9.4 lbs/day and 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 2x/month a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 11.3 lbs/day and 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to recording the UV transmittance
		Effluent Limit:	No effluent requirement.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.045 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Heilwood WWTP, PA0218634

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Anti-backsliding/ WQBEL	Monitoring:	The monitoring frequency shall be 2x/mo as a grab sample
		Effluent Limit:	During the months of May 1 to October 31, effluent limits shall not exceed 4.1 lbs/day and 11 mg/l as an average monthly. During the months of November 1 to April 30, effluent limits shall not exceed 9.4 lbs/day and 25 mg/l as an average monthly.
		Rationale:	Water quality modeling was conducted using 25 mg/l as default concentration. The model recommends 14.74 mg/l for summer limits. The water quality modeling was conducted a second run using the current permit limit of 11 mg/l. The model recommended 11 mg/l for summer months. Due to anti-backsliding provisions, the current limit shall continue to the proposed permit.
Total Nitrogen	SOP	Monitoring:	The monitoring frequency shall be 1x/yr as a grab sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The SOP for Establishing Effluent Limitations for Individual Sewage Permits recommends monitoring for sewage dischargers > 2,000 gpd for this parameter
Total Phosphorus	SOP	Monitoring:	The monitoring frequency shall be 1x/yr as a grab sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The SOP for Establishing Effluent Limitations for Individual Sewage Permits recommends monitoring for sewage dischargers > 2,000 gpd for this parameter
Notes:			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.045 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3 Toxics

The rationale for reviewing the toxics was for protection for the TMDL. The monitoring data used for the TMS modeling was DMR data from 2018 to 2024. There was no reasonable potential from the TMS modeling. Monitoring shall continue annually.

Summary of Proposed NPDES Parameter Details for Toxics

Heilwood WWTP, PA0218634

Parameter	Permit Limitation Required by[1]:	Recommendation	
Iron	TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a grab sample (Table 6-3).
		Effluent Limit:	No effluent limit
		Rationale:	Monitoring shall be required due to the Kiskiminetas-Conemaugh River Watersheds TMDL
Aluminum	TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a grab sample (Table 6-3).
		Effluent Limit:	No effluent limit
		Rationale:	Monitoring shall be required due to the Kiskiminetas-Conemaugh River Watersheds TMDL
Manganese	TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a grab sample (Table 6-3).
		Effluent Limit:	No effluent limit
		Rationale:	Monitoring shall be required due to the Kiskiminetas-Conemaugh River Watersheds TMDL

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.045 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth.

Based upon DEP policy directives the following pollutants shall be monitored:

- Consistent with DEP Management directives issued on March 22, 2021 and in conjunction with EPA's 2017 Triennial Review, monitoring for E. Coli shall be required. The monitoring frequency is based upon flow rate.

Summary of Proposed NPDES Parameter Details for polluants monitored under Chapter 92a.61
Heilwood WWTP, PA0218634

Parameter	Permit Limitation Required by[1]:	Recommendation	
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/year as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised Febraury 5, 2024) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other
2 Monitoring frequency based on flow rate of 0.045 MGD.
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

- **Due to the EPA Triennial Review, monitoring shall be required for E. Coli.**

6.3.1 Summary of Proposed NPDES Effluent Limits

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40º 37' 5.00" , **Longitude** 78º 55' 29.00" , **River Mile Index** 19.1 , **Stream Code** 44118

Receiving Waters: Yellow Creek (CWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	9.4	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids	11.3	XXX	XXX	30.0	XXX	60.0	2/month	Grab
Fecal Coliform (No./100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	9.4	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	4.1	XXX	XXX	11.0	XXX	22.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Manganese, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- UV Monitoring Conditions
- Hauled-in Waste Restrictions
- Solids Management for Non-Lagoon Treatment Systems

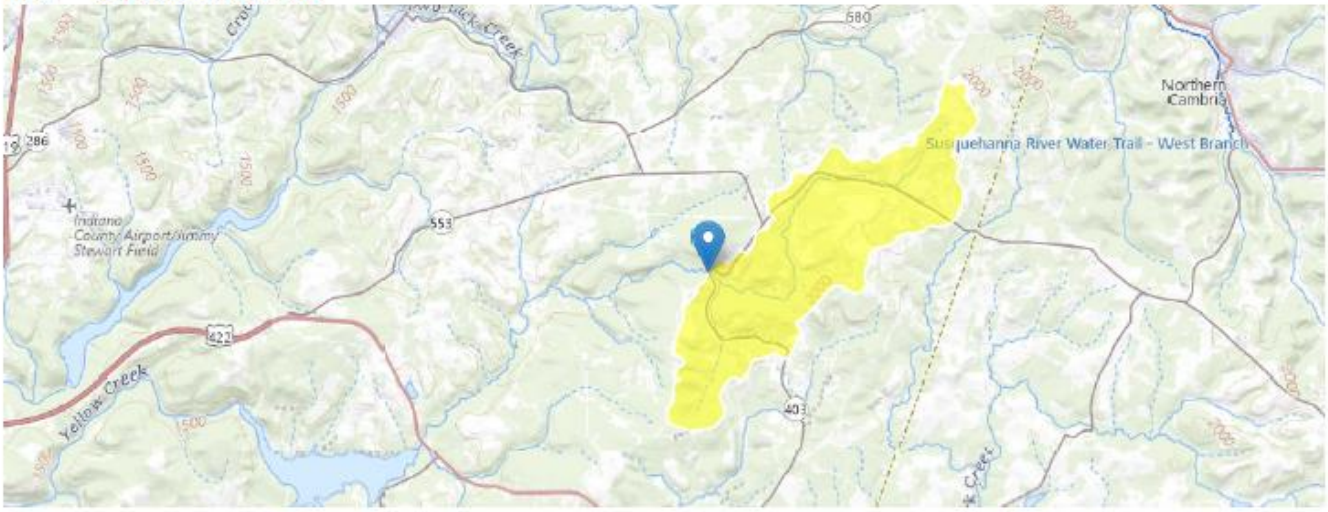
ools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP:
☐	Other:

Attachment A

Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
Workspace ID: PA20250511024609540000
Clicked Point (Latitude, Longitude): 40.61822, -78.92467
Time: 2025-05-10 22:46:34 -0400



Hellwood WWTP PA0218634 Modeling Point #1 May 2025

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.7	square miles
ELEV	Mean Basin Elevation	1820	feet
PRECIP	Mean Annual Precipitation	46	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.7	square miles	2.33	1720
ELEV	Mean Basin Elevation	1820	feet	898	2700
PRECIP	Mean Annual Precipitation	46	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.06	ft^3/s	43	43
30 Day 2 Year Low Flow	1.53	ft^3/s	38	38
7 Day 10 Year Low Flow	0.512	ft^3/s	54	54
30 Day 10 Year Low Flow	0.686	ft^3/s	49	49

Statistic	Value	Unit	SE	ASEp
90 Day 10 Year Low Flow	0.993	ft^3/s	41	41

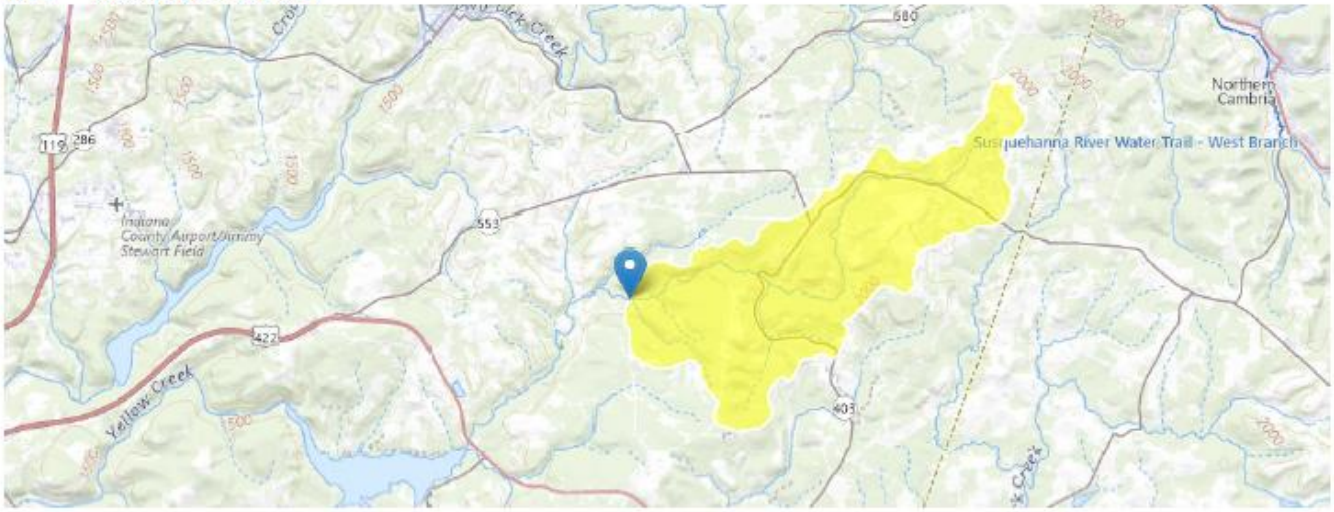
Low-Flow Statistics Citations

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/)

Application Version: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20250511024947149000
Clicked Point (Latitude, Longitude): 40.61232, -78.95908
Time: 2025-05-10 22:50:13 -0400



Heilwood WWTP PA0218634 Modeling Point #2 May 2025

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	10.7	square miles
ELEV	Mean Basin Elevation	1784	feet
PRECIP	Mean Annual Precipitation	47	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	10.7	square miles	2.33	1720
ELEV	Mean Basin Elevation	1784	feet	898	2700
PRECIP	Mean Annual Precipitation	47	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.54	ft^3/s	43	43
30 Day 2 Year Low Flow	2.23	ft^3/s	38	38
7 Day 10 Year Low Flow	0.777	ft^3/s	54	54
30 Day 10 Year Low Flow	1.03	ft^3/s	49	49

Statistic	Value	Unit	SE	ASEp
90 Day 10 Year Low Flow	1.48	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/)

Application Version: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Modeling Input Values
WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet Output Values

WQM – Used Current Permits Limits for Discharge Concentration

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18D	44118	YELLOW CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
19.100	Heilwood WWTP	PA0218634	0.045	CBOD5	25		
				NH3-N	11	22	
				Dissolved Oxygen			4

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18D	44118	YELLOW 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
19.100	Heilwood WWTP	8.73	22	8.73	22	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
19.100	Heilwood WWTP	1.23	11	1.23	11	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)		
19.10	Heilwood WWTP	25	25	11	11	4	4	0	0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18D	44118	YELLOW CREEK	**19.100**	1495.00	7.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.066	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.60	7.40	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
Heilwood WWTP	PA0218634	0.0450	0.0450	0.0450	0.000	25.00	7.04

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	11.00	0.07	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
18D	44118	YELLOW CREEK	**16.840**	1410.00	10.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.073	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.60	7.40	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 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18D	44118	YELLOW CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
19.100	0.045	23.769	7.337
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
12.084	0.471	25.668	0.102
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.77	0.530	1.39	0.936
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.732	20.657	Owens	5
Reach Travel Time (days)			
1.360			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.136	4.38	1.22	7.70
0.272	4.02	1.08	7.70
0.408	3.69	0.95	7.70
0.544	3.39	0.83	7.70
0.680	3.11	0.73	7.70
0.816	2.85	0.65	7.70
0.952	2.62	0.57	7.70
1.088	2.40	0.50	7.70
1.224	2.21	0.44	7.70
1.360	2.03	0.39	7.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18D	44118	YELLOW 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												
19.100	0.51	0.00	0.51	.0696	0.00712	.471	12.08	25.67	0.10	1.360	23.77	7.34
Q1-10 Flow												
19.100	0.33	0.00	0.33	.0696	0.00712	NA	NA	NA	0.08	1.683	23.85	7.31
Q30-10 Flow												
19.100	0.81	0.00	0.81	.0696	0.00712	NA	NA	NA	0.13	1.073	23.71	7.36

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	1.6	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Heilwood WWTP** NPDES Permit No.: **PA0218634** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Sewage effluent**

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
0.045	100	7.05						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		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											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	mg/L	<	2									
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	mg/L	<	4									
	Total Lead	µg/L											
	Total Manganese	mg/L		0.11									
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Heilwood WWTP, NPDES Permit No. PA0218634, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Yellow 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	044118	19.1	1495	7.7			Yes
End of Reach 1	044118	16.84	1410	10.7			Yes

Q_{7-10}

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	19.1	0.0665										178	7.4		
End of Reach 1	16.84	0.0726										178	7.4		

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	19.1														
End of Reach 1	16.84														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Heilwood WWTP, NPDES Permit No. PA0218634, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All | ○ Inputs | ○ Results | ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 5.704 PMF: 1 Analysis Hardness (mg/l): 168.66 Analysis pH: 7.34

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	6,267	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 5.704 PMF: 1 Analysis Hardness (mg/l): 168.66 Analysis pH: 7.34

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	12,533	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 5.704 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	8,355	

☑ ***CRL*** CCT (min): 1.928 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	mg/L	4.02	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	mg/L	12.5	CFC	Discharge Conc > 10% WQBEL (no 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
Total Manganese	8.36	mg/L	Discharge Conc ≤ 10% WQBEL

Attachment C

DMR data for Aluminum, Iron, and Manganese

DMR Data for Aluminum, Iron, and Manganese

Monitoring Period Begin Date	Monitoring Period End Date	Monitoring Location	Parameter Name	DMR Value	Units	Statistical Base Code
01/01/2018	12/31/2018	Final Effluent	Aluminum, Total	< 0.1	mg/L	Daily Maximum
01/01/2019	12/31/2019	Final Effluent	Aluminum, Total	< 0.1	mg/L	Daily Maximum
01/01/2020	12/31/2020	Final Effluent	Aluminum, Total	< 2.0	mg/L	Daily Maximum
01/01/2021	12/31/2021	Final Effluent	Aluminum, Total	E	mg/L	Daily Maximum
01/01/2022	12/31/2022	Final Effluent	Aluminum, Total	< 0.1	mg/L	Daily Maximum
01/01/2023	12/31/2023	Final Effluent	Aluminum, Total	< 0.2	mg/L	Daily Maximum
01/01/2024	12/31/2024	Final Effluent	Aluminum, Total	< 0.1	mg/L	Daily Maximum
			Max	<2.0	mg/l	

Monitoring Period Begin Date	Monitoring Period End Date	Monitoring Location	Parameter Name	DMR Value	Units	Statistical Base Code
01/01/2018	12/31/2018	Final Effluent	Iron, Total	0.26	mg/L	Daily Maximum
01/01/2019	12/31/2019	Final Effluent	Iron, Total	< 0.2	mg/L	Daily Maximum
01/01/2020	12/31/2020	Final Effluent	Iron, Total	< 4.0	mg/L	Daily Maximum
01/01/2021	12/31/2021	Final Effluent	Iron, Total	E	mg/L	Daily Maximum
01/01/2022	12/31/2022	Final Effluent	Iron, Total	< 0.2	mg/L	Daily Maximum
01/01/2023	12/31/2023	Final Effluent	Iron, Total	< 0.2	mg/L	Daily Maximum
01/01/2024	12/31/2024	Final Effluent	Iron, Total	< 0.2	mg/L	Daily Maximum
			Max	<4.0	mg/l	

Monitoring Period Begin Date	Monitoring Period End Date	Monitoring Location	Parameter Name	DMR Value	Units	Statistical Base Code
01/01/2018	12/31/2018	Final Effluent	Manganese, Total	0.11	mg/L	Daily Maximum
01/01/2019	12/31/2019	Final Effluent	Manganese, Total	0.05	mg/L	Daily Maximum
01/01/2020	12/31/2020	Final Effluent	Manganese, Total	< 0.4	mg/L	Daily Maximum
01/01/2021	12/31/2021	Final Effluent	Manganese, Total	E	mg/L	Daily Maximum
01/01/2022	12/31/2022	Final Effluent	Manganese, Total	0.02	mg/L	Daily Maximum
01/01/2023	12/31/2023	Final Effluent	Manganese, Total	< 0.02	mg/L	Daily Maximum
01/01/2024	12/31/2024	Final Effluent	Manganese, Total	< 0.02	mg/L	Daily Maximum
			Max	0.11	mg/l	