pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0038792**
Facility Type	**Municipal**	APS ID	**1117088**
Major / Minor	**Minor**	Authorization ID	**1490950**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Forest Hills Municipal Authority**	Facility Name	**Village of Mine 42 STP**
Applicant Address	900 Locust Street PO Box 337	Facility Address	1190 Centennial Drive
	Saint Michael, PA 15951-2007		Windber, PA 15963
Applicant Contact	Matthew Roman	Facility Contact	Same as Applicant
Applicant Phone	(814) 495-5614	Facility Phone	Same as Applicant
Client ID	160	Site ID	271351
Ch 94 Load Status	Not Overloaded	Municipality	Adams Township
Connection Status	No Limitations	County	Cambria
Date Application Received	July 1, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Application for renewal of an NPDES Permit for treated sewage

Summary of Review

The Authority has applied for a renewal of NPDES Permit No. PA0038792, which was previously issued by the Department on December 02, 2019. That permit will expire on December 31, 2024. The renewal permit we will issue will not be effective until January 01, 2025.

WQM Permit No. 1172405 was issued on June 19, 1972, authorizing the construction of the STP with an Annual Average Flow/Design Hydraulic Capacity of 0.0296 MGD and an Organic Design Capacity of 50 lbs BOD_5 per day. A WQM Amendment Application was received by the Department on February 09, 2024, proposing installation of a UV disinfection system. The WQM amendment was issued on August 30, 2024.

The STP consists of bar screen, aeration tank, settling tank, chlorine contact tank (to be replaced with UV) and aerobic digester.

The receiving stream, UNT to Paint Creek, is currently classified as a CWF, located in State Watershed No. 18-E.

Changes since the last permit include:

- Addition of *E. coli* monitoring in accordance with 25 Pa. Code 93.7(a).
- New summer and winter ammonia-nitrogen limits.
- Interim and final limits/ monitoring for TRC and UV. The authority will have 1 year to complete UV installation.
- Removal of monitoring requirements for Iron, Manganese and Aluminum.

Approve	Deny	Signatures	Date
X		fahmida amin Fahmida Amin / Environmental Engineering Specialist Trainee	August 27, 2024
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	September 20, 2024

Summary of Review

Sludge use and disposal description and location(s): Application data indicates the facility produced 2.9 Dry Tons of Sludge in 2023. The facility received no hauled in waste and eventually Biosolids will be managed under beneficial use Permit Number PAG076105 (Facility is under Construction). Sewage Sludge is currently being processed at South Fork Wastewater Treatment Plant.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0296
Latitude	40º 14' 39.00"	Longitude	-78º 46' 32.00"
Quad Name	Windber	Quad Code	1715
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Paint Creek (CWF)	Stream Code	45262
NHD Com ID	123726559	RMI	0.12
Drainage Area	1.11	Yield (cfs/mi^2)	0.061
Q_{7-10} Flow (cfs)	0.0678	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1945	Slope (ft/ft)	0.03788
Watershed No.	18-E	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	none	Exceptions to Criteria	none
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, ORGANIC ENRICHMENT, PH		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE, MUNICIPAL POINT SOURCE DISCHARGES		
TMDL Status	Final	Name	Paint Creek

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		Buffalo Township Municipal Authority	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	29.4	Distance from Outfall (mi)	Greater than 50 miles

Changes Since Last Permit Issuance:

- Addition of *E. coli* monitoring in accordance with 25 Pa. Code 93.7(a).
- New summer and winter ammonia-nitrogen limits.
- Interim and final limits / monitoring for TRC and UV. The authority will have 1 year to complete UV installation.
- Removal of monitoring requirements for Iron, Manganese and Aluminum.

Other Comments:

The discharge is to an Unnamed Tributary to Paint Creek, which is part of the Paint Creek Watershed that has a Final TMDL and is impaired by metals and pH. This sewage discharge is not expected to contribute to the stream impairment for which abandoned mine drainage is source of such impairment. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants. Application data states that maximum concentration values for total aluminum, total Iron, and total manganese are <0.1 mg/L, <0.2 mg/L, and 0.0324 mg/L, which are below the criteria – based concentration values. Annual monitoring of these pollutants will remain in part A of the permit and will be re-evaluated during the next permit cycle to ensure they are not contributing to stream impairment.

Treatment Facility Summary

Treatment Facility Name: Village Of 42 STP

WQM Permit No.	Issuance Date
1172405	June 19, 1972
1172405 T-1 A-1	Pending Department Review

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Gas Chlorine, to be replaced with UV	0.0071(2023)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0296	50	Not Overloaded	aerobic digester	Other WWTP

Changes Since Last Permit Issuance:

Other Comments:

Compliance History

Operations Compliance Check Summary Report

Facility: Village of 42 STP

NPDES Permit No.: PA0038792

Compliance Review Period: 8/2019 – 8/2024

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC
3746880	04/11/2024	Compliance Evaluation	Violation(s) Noted
3747148	04/11/2024	Administrative/File Review	No Violations Noted
3633833	10/23/2023	Compliance Evaluation	No Violations Noted
3633861	10/23/2023	Administrative/File Review	No Violations Noted
3373098	06/03/2022	Routine/Partial Inspection	No Violations Noted
3348104	03/30/2022	Administrative/File Review	No Violations Noted
3348103	03/30/2022	Compliance Evaluation	Violation(s) Noted
3202357	05/27/2021	Administrative/File Review	No Violations Noted
3201979	05/27/2021	Administrative/File Review	No Violations Noted
3202356	05/27/2021	Administrative/File Review	No Violations Noted
3202340	05/27/2021	Compliance Evaluation	Violation(s) Noted
3012692	03/12/2020	Compliance Evaluation	No Violations Noted

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE DESC	RESOLVED DATE	INSP ID	INSPECTED DATE	VIOLATION COMMENT
8183487	04/11/2024	CSL - Failure to comply with terms and conditions of a WQM permit	08/01/2024	3746880	04/11/2024	Comminutor off-line. An amendment to the WQM permit to remove that unit has been submitted to the Department.
951672	03/30/2022	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	04/17/2022	3348103	03/30/2022	
919606	05/27/2021	NPDES - Violation of effluent limits in Part A of permit	10/29/2021	3202340	05/27/2021	Discharge Monitoring Reports (eDMRs) submitted by Village of 42 STP to the Department show the failure to comply with certain effluent limitations.

Open Violations by Client ID:

No open violations for Client ID 160

Enforcement Summary:

ENF ID	ENF TYPE	ENF CREATION DATE	VIOLATIONS	ENF FINAL STATUS	ENF CLOSED DATE
402813	NOV	04/17/2022	92A.41(A)5	Administrative Close Out	07/13/2022

DMR Violation Summary:

START	END	PARAMETER	SAMPLE	PERMIT	UNIT OF MEASURE	STATISTICAL BASE CODE
12/01/2023	12/31/2023	Fecal Coliform	2192	2000	No./100 ml	Geometric Mean
01/01/2023	01/31/2023	pH	4.89	6.0	S.U.	Instantaneous Minimum
09/01/2021	09/30/2021	Dissolved Oxygen	1.36	4.0	mg/L	Instantaneous Minimum
08/01/2021	08/31/2021	Total Residual Chlorine (TRC)	1.73	1.6	mg/L	Instantaneous Maximum
11/01/2020	11/30/2020	Dissolved Oxygen	2.3	4.0	mg/L	Instantaneous Minimum
08/01/2020	08/31/2020	Dissolved Oxygen	3.9	4.0	mg/L	Instantaneous Minimum
07/01/2020	07/31/2020	Fecal Coliform	217	200	No./100 ml	Geometric Mean
06/01/2020	06/30/2020	Dissolved Oxygen	3.0	4.0	mg/L	Instantaneous Minimum
06/01/2020	06/30/2020	Total Residual Chlorine (TRC)	3.5	3.3	mg/L	Instantaneous Maximum
05/01/2020	05/31/2020	Fecal Coliform	1300	1000	No./100 ml	Instantaneous Maximum

Compliance Status: No open violations, but Ops will consider enforcement action for DMR exceedances.

Completed by: John Murphy

Completed date: 8/1/2024

Compliance History

DMR Data for Outfall 001 (from July 1, 2023 to June 30, 2024)

Parameter	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23
Flow (MGD) Average Monthly	0.0079	0.0071	0.0096	0.0088	0.0077	0.0109	0.0069	0.0064	0.0059	0.0051	0.0054	0.0058
pH (S.U.) Instantaneous Minimum	7.45	7.47	7.45	7.35	7.86	7.84	7.75	7.55	7.48	7.36	7.24	7.25
pH (S.U.) Instantaneous Maximum	7.79	7.94	7.97	8.35	8.41	8.3	8.3	7.99	8.04	7.67	7.58	7.62
DO (mg/L) Instantaneous Minimum	5.22	5.51	6.03	6.84	7.44	6.1	6.24	6.49	5.42	4.89	4.93	5.0
TRC (mg/L) Average Monthly	0.18	0.28	0.22	0.23	0.18	0.228	0.19	0.27	0.32	0.24	0.25	0.35
TRC (mg/L) Instantaneous Maximum	0.38	0.76	0.59	1.05	0.37	0.69	0.32	0.5	0.64	0.45	0.41	0.75
CBOD5 (lbs/day) Average Monthly	< 0.2	0.3	< 0.2	0.5	< 0.2	< 0.4	0.2	< 0.2	0.3	< 0.1	< 0.2	< 0.1
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	13	31	14	11	20	31	11	9	11	9	9	8.0
CBOD5 (mg/L) Average Monthly	< 3.86	4.8	< 3	7.33	< 3.42	< 6.19	4.4	< 3.51	6.77	< 3.61	< 4.01	< 3.0
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	243	615	243	170	297	399	269	205	268	260	232	223
CBOD5 (mg/L) Instantaneous Maximum	4.72	6.48	< 3	8.52	3.84	9.37	4.93	4.01	7.14	4.21	5.02	< 3.0
TSS (lbs/day) Average Monthly	0.2	< 0.1	< 0.1	0.6	< 0.2	0.9	0.3	0.3	0.9	0.1	< 0.09	< 0.1
TSS (lbs/day) Raw Sewage Influent Average Monthly	4	27	5	6	33	22	12	5	11	2	10	4.0

TSS (mg/L) Average Monthly	4	< 2.8	< 1.8	10.2	< 3.3	13.5	6.7	7	21	4	< 2.34	< 3.0
TSS (mg/L) Raw Sewage Influent Average Monthly	71	555	89	100	465	255	298	116	258	65	255	107
TSS (mg/L) Instantaneous Maximum	6	4	< 2	11.2	4.5	22.5	8.8	8.4	23.2	6	< 2.67	< 4.0
Fecal Coliform (No./100 ml) Geometric Mean	< 4	6	< 4	1791	15	< 4	2192	283	40	14	< 8.0	< 6.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	4	8	< 4	1953.6	59.2	4	4813.2	646.4	129.2	16.4	16.4	8.0
Total Nitrogen (mg/L) Daily Maximum							16.51					
Ammonia (lbs/day) Average Monthly	< 0.005	< 0.005	< 0.05	< 0.006	< 0.004	0.2	< 0.004	0.5	0.008	< 0.003	0.2	0.03
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.97	< 0.1	< 0.0572	2.779	< 0.1	10.168	0.1902	< 0.1	3.9711	0.6685
Ammonia (mg/L) Instantaneous Maximum	< 0.1	< 0.1	1.839	< 0.1	0.1043	4.358	< 0.1	20.1	0.2015	< 0.1	7.501	1.179
Total Phosphorus (mg/L) Daily Maximum							5.72					
Total Aluminum (mg/L) Daily Maximum							< 0.1					
Total Iron (mg/L) Daily Maximum							< 0.2					
Total Manganese (mg/L) Daily Maximum							0.0324					

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0296
Latitude 40º 14' 39.00" **Longitude** -78º 46' 32.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Comments: Impose the above Technology-Based Limitations for CBOD*5*, TSS, pH, and Fecal Coliform.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen (May 1 to Oct 31)	5.63	Average monthly	WQM 7.0 Version 1.1
Ammonia-Nitrogen (Nov 1 to April 30)	17.04	Average monthly	See Comments below
TRC	0.2	Average Monthly	TRC_CALC

Comments: Since ammonia-nitrogen WQBELs are calculated for the summer period, winter limits are evaluated also. Pursuant to DEP's Ammonia Guidance, WQBELs for the winter period are set by multiplying the summer limits by three, unless modeling indicates that more stringent WQBELs are needed for winter.

For winter period modeling, the low-flow yield (representing Q7-10 flow) is doubled consistent with DEP's Ammonia Guidance. Default stream and discharge temperatures of 5°C and 15°C, respectively, also are assumed based on the Ammonia Guidance. The results of the modeling (Attachments) indicate that winter limits for ammonia-nitrogen calculated using a summer limit multiplier of three are more stringent than the winter modeling results. Therefore, WQBELs calculated for ammonia-nitrogen using the summer limit multiplier of 3 will apply from November through April.

DMR data confirms that the applicant can comply with the revised ammonia-nitrogen limits, which are based upon updated Ammonia criteria and Q7/10 flow.

DMR data indicates that the applicant cannot comply with the revised TRC limits. The existing TRC limit of 0.5 mg/l (average monthly) will be imposed for a 1-year interim period to allow for the installation of a UV disinfection system (WQM Permit 1172405 T-1 A-1). After a 1-year interim period, TRC limits will be replaced with UV Transmittance (%) monitoring.

Best Professional Judgment (BPJ) Limitations

Comments: A minimum Dissolved Oxygen (DO) limit of 4.0 mg/L will be established based on BPJ to ensure adequate operation and maintenance (Section I.A, Note 6, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

The facility is not seeking to revise the previously permitted effluent limits.

Additional Considerations

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document No. 386-0400-001).

Ultraviolet (UV) disinfection will replace the existing gaseous chlorine disinfection system. TRC limits are applicable for the first year of the permit and will then be replaced by final UV monitoring requirements. Part A will contain, at a minimum, routine monitoring of UV transmittance (%) at the same monitoring frequency that would be used for TRC per Section I.A, Note 4, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

For POTWs, mass loading limits will be established for CBOD5, TSS, NH3-N, and where necessary Total P and Total N. In general, average monthly mass loading limits will be established for CBOD5, TSS, NH3-N, and where necessary Total P and Total N, and average weekly mass loading limits will be established for CBOD5 and TSS (Section IV, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

For POTWs with design flows greater than 2,000 GPD and for non-municipal sewage facilities that service municipalities or portions thereof, the application manager will establish influent BOD5 and TSS monitoring in the permit using the same frequency and sample type as is used for other effluent parameters (Section IV.E.8, SOP No BCW-PWT-002, New and Reissuance Sewage Individual NPDES Permit Applications).

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/year for design flows of 0.002 and 0.05 MGD per 25 Pa. Code § 92a.061 and Section I.A, Note 12, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). The discharge is to waters not impaired for nutrients. A 1/year monitoring requirement for Total N & Total P has been added to the permit per Chapter 92a.61 and Section I.A, Note 7 & 8, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	6.0	XXX	XXX	25.0	XXX	50.0	2/month	Grab
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
TSS	7.0	XXX	XXX	30.0	XXX	60.0	2/month	Grab
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia - Nitrogen Nov 1 - Apr 30	4.20	XXX	XXX	17.04	XXX	34.08	2/month	Grab
Ammonia - Nitrogen May 1 - Oct 31	1.38	XXX	XXX	5.63	XXX	11.36	2/month	Grab
Total Phosphorus	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		
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

Compliance Sampling Location: 001

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: End of Interim Period 1 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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured

Compliance Sampling Location: Outfall 001

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through End of Interim Period 1.

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		
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab

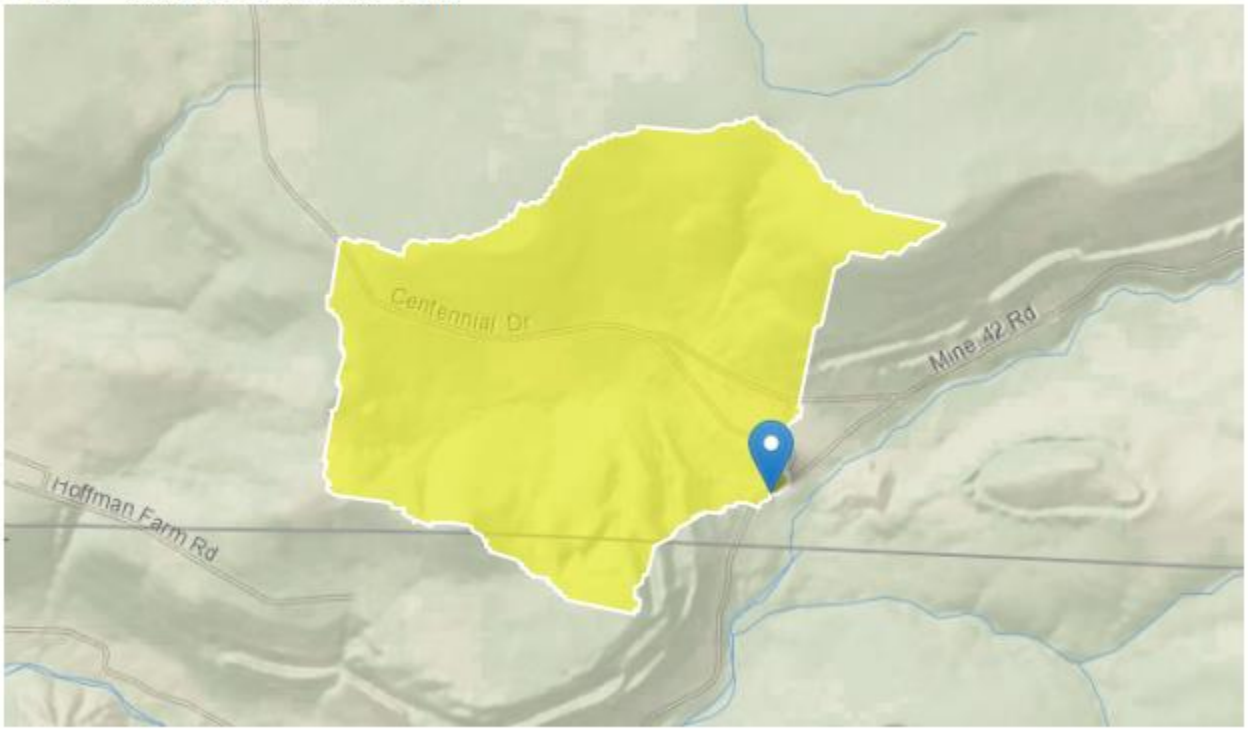
Compliance Sampling Location: Outfall 001

Other Comments:

Attachment 1 – USGS StreamStats Report

StreamStats Report _ PA0038792

Region ID: PA
Workspace ID: PA20240806160357896000
Clicked Point (Latitude, Longitude): 40.24560, -78.77556
Time: 2024-08-06 12:04:26 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.11	square miles
ELEV	Mean Basin Elevation	2161	feet
PRECIP	Mean Annual Precipitation	45	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	1.11	square miles	2.33	1720
ELEV	Mean Basin Elevation	2161	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.16	ft^3/s
30 Day 2 Year Low Flow	0.233	ft^3/s
7 Day 10 Year Low Flow	0.0678	ft^3/s
30 Day 10 Year Low Flow	0.0924	ft^3/s
90 Day 10 Year Low Flow	0.137	ft^3/s

Low-Flow Statistics Citations

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

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Application Version: 4.23.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 2 – WQM 7.0 Version 1.1 – Summer Period

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
18E	45262	Trib 45262 to Paint Creek	**0.120**	1945.00	1.11	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	0.061	0.00	0.00	0.000	0.000	10.0	0.00	0.00	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
Village 42 STP	PA0038792	0.0296	0.0000	0.0296	0.000	20.00	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	9.17	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
18E	45262	Trib 45262 to Paint Creek	**0.010**	1923.00	1.12	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	0.061	0.00	0.00	0.000	0.000	10.0	0.00	0.00	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
18E	45262	Trib 45262 to Paint 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												
0.120	0.07	0.00	0.07	.0458	0.03788	.37	4.27	11.52	0.07	0.094	20.00	7.00
Q1-10 Flow												
0.120	0.04	0.00	0.04	.0458	0.03788	NA	NA	NA	0.06	0.107	20.00	7.00
Q30-10 Flow												
0.120	0.09	0.00	0.09	.0458	0.03788	NA	NA	NA	0.08	0.084	20.00	7.00

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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18E	45262	Trib 45262 to Paint 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
0.120	Village 42 STP	16.76	32.62	16.76	32.62	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
0.120	Village 42 STP	1.89	5.68	1.89	5.68	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)		
0.12	Village 42 STP	25	25	5.68	5.68	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18E	45262	Trib 45262 to Paint Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.120	0.030	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.268	0.370	11.524	0.072
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
11.28	1.331	2.29	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.681	23.350	Owens	5
Reach Travel Time (days)			
0.094			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.009	11.14	2.28	6.92
0.019	11.00	2.26	7.11
0.028	10.87	2.25	7.27
0.037	10.73	2.23	7.40
0.047	10.60	2.22	7.51
0.056	10.47	2.20	7.59
0.066	10.34	2.19	7.67
0.075	10.21	2.18	7.73
0.084	10.08	2.16	7.78
0.094	9.96	2.15	7.83

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18E	45262	Trib 45262 to Paint 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)
0.120	Village 42 STP	PA0038792	0.030	CBOD5	25		
				NH3-N	5.68	11.36	
				Dissolved Oxygen			3

Attachment 3 – WQM 7.0 Version 1.1 – Winter Period

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
	18E	45262	Trib 45262 to Paint Creek	**0.120**	1945.00	1.11	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	0.122	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
Village 42 STP	PA0038792	0.0296	0.0000	0.0296	0.000	15.00	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	12.80	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
18E	45262	Trib 45262 to Paint Creek	**0.010**	1923.00	1.12	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	0.122	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
18E	45262	Trib 45262 to Paint 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												
0.120	0.14	0.00	0.14	.0458	0.03788	.401	4.84	12.08	0.09	0.072	7.53	7.00
Q1-10 Flow												
0.120	0.09	0.00	0.09	.0458	0.03788	NA	NA	NA	0.08	0.086	8.46	7.00
Q30-10 Flow												
0.120	0.18	0.00	0.18	.0458	0.03788	NA	NA	NA	0.11	0.063	6.99	7.00

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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18E	45262	Trib 45262 to Paint 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
0.120	Village 42 STP	24.1	50	24.1	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
0.120	Village 42 STP	4.36	21.91	4.36	21.91	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)		
0.12	Village 42 STP	25	25	21.91	21.91	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18E	45262	Trib 45262 to Paint Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.120	0.030	7.527	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.844	0.401	12.084	0.093
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.81	1.206	5.54	0.268
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
10.324	17.881	Owens	5
Reach Travel Time (days)			
0.072			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.007	7.77	5.53	10.42
0.014	7.74	5.52	10.50
0.022	7.70	5.50	10.58
0.029	7.66	5.49	10.65
0.036	7.62	5.48	10.70
0.043	7.59	5.47	10.75
0.050	7.55	5.46	10.75
0.058	7.51	5.45	10.75
0.065	7.48	5.44	10.75
0.072	7.44	5.43	10.75

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18E	45262	Trib 45262 to Paint 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)
0.120	Village 42 STP	PA0038792	0.030	CBOD5	25		
				NH3-N	21.91	43.82	
				Dissolved Oxygen			3

Attachment 4 – TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0678	= Q stream (cfs)	0.5	= CV Daily
0.0296	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.491	1.3.2.iii	WLA cfc =	0.471
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.183	5.1d	LTA_cfc =	0.274

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.225	AFC
		INST MAX LIMIT (mg/l) =	0.737	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)