Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0219321**
Facility Type	**Municipal**	APS ID	**1102535**
Major / Minor	**Minor**	Authorization ID	**1464820**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Shanksville Borough Somerset County**	Facility Name	**Shanksville Borough STP**
Applicant Address	PO Box 127	Facility Address	179 River Bank Road
	Shanksville, PA 15560-0127		Shanksville, PA 15560
Applicant Contact		Facility Contact	
Applicant Phone		Facility Phone	
Client ID	77869	Site ID	602108
Ch 94 Load Status	Not Overloaded	Municipality	Shanksville Borough
Connection Status	No Limitations	County	Somerset
Date Application Received	December 12, 2023	EPA Waived?	Yes
Date Application Accepted	December 213, 2023	If No, Reason	

Purpose of Application: Renewal of existing NPDES permit to discharge treated sewage effluent from a municipal STP.

Summary of Review

Shanksville Borough has applied for renewal of NPDES Permit No. Shanksville Borough STP.

Treatment at this facility consists of:

- Influent Grinder,
- Flow Equalization,
- Extended Aeration,
- Final Clarification,
- Chlorination,
- Dechlorination.

Sludge use and disposal description and location(s): Sludge is stored in sludge holding tanks. Sludge from the holding tanks is hauled to the Dornick Point WWTP in Johnstown for processing and disposal.

This facility discharges to Stony Creek (Cold Water Fishes) in the Conemaugh River Basin.

The limits in the Draft NPDES Permit were determined based on the following:

- SOP for Establishing Effluent Limitations for Individual Sewage Permits. (BCW-PMT-033, Revised February 5, 2024)
- The Permit Writer's Manual (386-0400-001, Revised June 28, 2023)
- An updated model in WQM 7.0 was performed.
- An updated model in the Toxics Management Spreadsheet was performed.
- An updated model in TRC_Calc was performed.

Approve	Deny	Signatures	Date
x		John Price Jack Price / Environmental Engineering Specialist	January 28, 2025
x		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	January 28, 2025

Summary of Review

Act 14 Notification was provided to Stoneycreek Township and Somerset County on November 20, 2023.

This Draft Permit proposes the following changes to effluent limitations:

- Quarterly *E. Coli* sampling is added.
- Weekly Ammonia-Nitrogen limits have been added.
- Year-round Ammonia-Nitrogen limits have been added.
- Weekly Sampling of Total Copper and Total Lead have been added.

Issuance of the Draft Permit is recommended.

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)	0.1
Latitude	40º 1' 13"	Longitude	-78º 54' 55"
Quad Name	Stoneytown	Quad Code	1814
Wastewater Description:	Sewage Effluent		
Receiving Waters	Stonycreek River (CWF)	Stream Code	45084
NHD Com ID	123724151	RMI	36.3
Drainage Area	60.3 mi^2	Yield (cfs/mi^2)	0.070
Q_{7-10} Flow (cfs)	4.18	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	2196	Slope (ft/ft)	0.001
Watershed No.	18-E	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, PH		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE		
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

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

Nearest Downstream Public Water Supply Intake		Hooversville Municipal Authority	
PWS Waters	Stonycreek River	Flow at Intake (cfs)	
PWS RMI	25.03	Distance from Outfall (mi)	8.05 Linear Miles

Changes Since Last Permit Issuance: No changes to the discharge have occurred since the previous permit, however the discharge was modelled for this new permit. These models have resulted in changes to effluent limitations.

- Quarterly *E. Coli* sampling is added per the SOP for Sewage Effluent Limitations.
- Weekly Ammonia-Nitrogen limits have been added based on the WQM 7.0 Model.
- Year-round Ammonia-Nitrogen limits have been added based on the WQM 7.0 Model.
- Weekly Sampling of Total Copper and Total Lead have been added based on the TMS Model.

Treatment Facility Summary

Treatment Facility Name: Shanksville Borough STP

WQM Permit No.	Issuance Date	Purpose
5603402	5/24/2004	Construction of original plant
5603402 A-1	12/16/2013	Expansion of plant from 50,000 gpd to 100,000 gpd.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorine With Dechlorination	0.1

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.1	171	Not Overloaded		

Changes Since Last Permit Issuance: None.

Operations Compliance Check Summary Report

Facility: Shanksville Borough STP

NPDES Permit No.: PA0219321

Compliance Review Period: 01/01/2020-01/01/2025

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
08/16/2023	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
08/16/2023	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted
11/03/2021	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
01/03/2023	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted
11/03/2021	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted
09/07/2022	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted
06/23/2020	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
11/03/2021	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
06/23/2020	92A.44	NPDES - Violation of effluent limits in Part A of permit	06/23/2020
11/03/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit	11/03/2021
09/07/2022	92A.62	NPDES - Failure to pay annual fee	09/26/2022
01/03/2023	302.202	Operator Certification - Failure to submit annual system fee	01/25/2023

Open Violations by Client ID:
No open violations for Client ID 77869.

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	AMOUNT RECEIVED	ENF FINALSTATUS	ENF CLOSED DATE
NOV	Notice of Violation	01/03/2023	302.202		Comply/Closed	01/25/2023
CACP	Consent Assessment of Civil Penalty	05/24/2022	92A.44	$2,000.00	Comply/Closed	05/24/2022
NOV	Notice of Violation	09/07/2022	92A.62		Comply/Closed	09/26/2022

Compliance Status: Facility does not currently have any open violations or pending enforcements.

Compliance History

DMR Data for Outfall 001 (from December 1, 2023 to November 30, 2024)

Parameter	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23
Flow (MGD) Average Monthly	0.029	0.023	0.026	0.029	0.024	0.026	0.078	0.048	0.038	0.033	0.081	0.033
Flow (MGD) Daily Maximum	0.048	0.034	0.067	0.087	0.041	0.040	0.300	0.172	0.077	0.045	0.690	0.044
pH (S.U.) Instantaneous Minimum	6.5	6.2	6.0	6.3	6.2	6.3	6.6	6.6	6.5	6.3	6.4	6.5
pH (S.U.) Instantaneous Maximum	7.7	7.4	7.7	7.1	7.2	7.7	7.5	7.6	7.8	7.4	7.6	7.7
DO (mg/L) Instantaneous Minimum	7.2	7.6	6.0	6.2	5.0	6.0	6.7	5.9	6.5	7.4	7.4	6.3
TRC (mg/L) Average Monthly	0.04	0.03	0.03	0.02	0.03	0.03	0.05	0.08	0.05	0.02	0.02	0.03
TRC (mg/L) Instantaneous Maximum	0.10	0.07	0.09	0.06	0.12	0.11	0.16	1.15	0.56	0.21	0.12	0.08
CBOD5 (lbs/day) Average Monthly	0.71	1.03	0.63	0.81	0.87	2.02	8.14	1.33	1.07	2.14	2.21	1.27
CBOD5 (lbs/day) Weekly Average	0.87	2.40	1.13	1.37	1.25	5.67	12.51	1.83	1.90	4.90	5.18	2.20
CBOD5 (mg/L) Average Monthly	3	4.6	2.62	3.5	4.2	4	2.95	4.2	3.25	7.5	5.4	4.25
CBOD5 (mg/L) Weekly Average	4	9	4	4.0	6	4	5	6	4	14	9	6
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	55.80	40.08	11.41	13.89	35.94	38.13	200.79	71.17	40.46	95.11	76.90	61.76
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	85.43	54.42	26.57	24.62	78.40	96.41	400.32	179.86	78.83	270.42	143.87	96.99
BOD5 (mg/L) Raw Sewage Influent Average Monthly	225	190.4	47.125	59	186.4	90.75	69.75	211.8	142.25	313.5	188	216.25
TSS (lbs/day) Average Monthly	2.89	0.42	1.14	0.76	1.15	1.33	8.80	0.73	1.31	0.52	2.43	2.26

TSS (lbs/day) Raw Sewage Influent Average Monthly	78.19	57.91	64.17	68.58	86.68	185.88	753.16	75.88	79.98	52.43	61.86	88.60
TSS (lbs/day) Raw Sewage Influent Daily Maximum	144.42	87.07	88.75	123.10	152.16	528.84	1200.96	173.51	102.66	77.76	165.96	104.58
TSS (lbs/day) Weekly Average	8.02	0.73	2.27	1.28	3.08	2.84	13.34	1.22	2.38	0.70	3.45	4.40
TSS (mg/L) Average Monthly	13	2	4.75	3.75	4.8	3.5	3	2.2	4	2	6.8	7
TSS (mg/L) Raw Sewage Influent Average Monthly	300.75	275.8	280	300	406.2	348.5	260.5	217.2	281.25	199.5	139	302.25
TSS (mg/L) Weekly Average	37	3	8	7.0	9	6	4	3	5	2	12	12
Fecal Coliform (No./100 ml) Geometric Mean	1	1	2.247	1	1.0	1	1	1.43	1	1	1	1
Fecal Coliform (No./100 ml) Instantaneous Maximum	1	1	8.5	1	1.0	1	1	6	1	1	1	1
Total Nitrogen (mg/L) Daily Maximum												30.2
Ammonia (lbs/day) Average Monthly	0.05	0.02	0.48	0.10	0.15	0.05	0.31	0.31	0.03	0.04	0.04	0.05
Ammonia (mg/L) Average Monthly	0.19	0.10	2.31	0.10	0.11	0.12	0.11	0.82	0.10	0.16	0.11	0.15
Ammonia (mg/L) Instantaneous Maximum	0.19							1.00	0.10	0.34	0.17	0.29
Total Phosphorus (mg/L) Daily Maximum												3.65
Total Aluminum (mg/L) Daily Maximum												< 0.1
Total Iron (mg/L) Daily Maximum												0.06
Total Manganese (mg/L) Daily Maximum												0.02

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.1
Latitude 40º 1' 13.00" **Longitude** -78º 54' 55.00"
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)
Ammonia-Nitrogen	25	Average Monthly	-	SOP BCW-PMT-033
Total Residual Chlorine (TRC)	0.5	Average Monthly	-	SOP BCW-PMT-033

Comments: The proposed discharge was evaluated using WQM 7.0 to evaluate CBOD5, Ammonia-Nitrogen, and Dissolved Oxygen Parameters; the discharge was also evaluated using TRC_Calc for Total Residual Chlorine.

The WQM 7.0 model demonstrates that the TBELs for Ammonia-Nitrogen and CBOD5 are sufficient year-round. A printout of the WQM 7.0 Report for Summer and Winter conditions may be found in Attachment 2.

The TRC_Calc model was used to determine whether the TBEL provides sufficient water quality protection. The model demonstrates that TRC TBELs are appropriate for this facility. The TRC_Calc Report is included in Attachment 4.

Water Quality-Based Limitations

A “Reasonable Potential Analysis” determined the following parameters were candidates for monitoring: Total Lead, and Total Copper. The Reasonable Potential Analysis was performed in DEP’s Toxics Management Spreadsheet. The TMS report is included in Attachment 3.

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

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	4.0 (min)	Average Monthly	WQM 7.0 Version 1.1
Total Copper	Report	Average Monthly	Toxics Management Spreadsheet 1.4
Total Lead	Report	Average Monthly	Toxics Management Spreadsheet 1.4

Comments:

Analyses for WQBELs were performed using the Q7-10 flow. The flow was obtained via USGS StreamStats. The USGS StreamStats Report is located in Attachment 1.

The reporting requirement for Total Copper and Total Lead were determined from the Toxics Management Spreadsheet Report. The analysis was run using the maximum concentration reported in the application. According to the SOP for WQBELs, monitoring is required when the concentration detected is between 10% and 50% of the WQBELs. Monitoring frequency is determined from Table 6-3 of the Permit Writer's Manual. The monitoring requirement may be revisited if the record of effluent data demonstrates the concentration of these parameters is no longer within this range without treatment. Proposed relaxation of monitoring requirements must fall under the backsliding exceptions under Section 402(o) of the Clean Water Act.

Aluminum, Iron, and Manganese monitoring requirements are based on the Kiski-Conemaugh River Basin TMDL and will be continued into the renewed permit. Additional information is included in the section below about the TMDL.

Best Professional Judgment (BPJ) Limitations

Comments: N/A

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. 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.

(40 CFR 122.44 (l)(2) Establishing limitations, standards, and other permit conditions., 40 CFR Ch. I (7-1-21 Edition))

No permits limits have been made less stringent in the renewal draft permit.

Chlorine Disinfection

Disinfection at this facility is provided by tablet chlorination. This facility dechlorinates prior to discharge. Per the SOP for effluent limitations and the recommendations from the TRC_Calc Model, a monthly limit of 0.5 mg/L and an instantaneous maximum of 1.6 mg/L is established.

(*Section I.A, Note 3, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

Mass Loadings

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for $CBOD_5$, TSS, and NH_3-N and average weekly mass loading limits be established for $CBOD_5$ and TSS.

Average monthly mass loading limits (lbs./day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

(*Section IV, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9*)

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/quarter for design flows ≥0.05 and <1 MGD.

(*Note 12 SOP-Establishing Effluent Limitations for Individual Sewage Permits Final November 9, 2012, Revised February 5, 2024, Version 2.0.* and *25 PA Code 92a.61(b).)*

Influent Monitoring

For POTWs with design flows greater than 2,000 GPD, influent BOD5 and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters. BOD5 and TSS influent loads will once again be reported for monthly average and daily maximum values in lbs/day and monthly average concentrations in mg/L.

(Section *IV.E.8. SOP – New and Reissuance Individual Sewage NPDES Permits Final November 9, 2012, Revised February 3, 2022, Version 2.0.)*

Kiskiminetas-Conemaugh River Watershed TMDL

A TMDL for the Kiskiminetas-Conemaugh River Watershed – of which Stonycreek River is a part – was completed on January 29, 2010 for the control of acid mine drainage pollutants: aluminum, iron, manganese, sediment, and pH. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by the EPA pursuant to 40 CFR § 130.7. The discharge was not assigned wasteload allocations for aluminum, iron and manganese by the Kiskiminetas-Conemaugh River Watershed TMDL (Appendix G) and is listed as a Negligible Discharge Facility (Appendix C).

Under 25 PA Code § 92a.61(b) Effluent concentrations of Total Aluminum, Total Iron, and Total Manganese will be reported at least once per year. The yearly sampling data will be used to determine if there is reasonable potential to cause or contribute to water quality excursions and will be re-evaluated in the next permit cycle.

Other Considerations

Nutrient monitoring is required by the SOP for Effluent Limitations for Individual Sewage Permits. Monitoring is included 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 receiving stream is not listed as impaired for nutrients, therefore at the discretion of the application manager, a monitoring frequency less than the equivalent of conventional pollutants in Table 6-3 of the Permit Writer's Manual has been selected.

(*Section I.A, Note 7 & 8, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

Rounding-Off Mathematical Values. Section 5 C.2. of the Permit Writers Manual contains general guidelines for rounding conventional and toxic pollutants, with instructions to round down to the nearest decimal place indicated. Nonconventional pollutants are rounded according to other guidance where applicable.

General Magnitude	Conventional Pollutants	Toxic Pollutants
<0.01	to nearest 0.001	to nearest 0.001
0.01 - 0.1	to nearest 0.01	to nearest 0.01
0.1 - 1.0	to nearest 0.1	to nearest 0.01
1.0 - 10.0	to nearest 0.5	to nearest 0.01
10.0 - 60.0	to nearest 1.0	to nearest 0.01
60.0 or greater	to nearest 5.0	to nearest 0.10

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Section 2.C of the Permit Writers Manual contains the procedure for converting average monthly effluent limitations to average weekly, maximum daily, and instantaneous maximum effluent limitations. The average monthly limit is multiplied according to the following chart:

Discharge Solution	Parameters	Average Weekly	Maximum Daily	Instantaneous Maximum Multiplier
Sewage	All	1.5		2.0
Industrial	All		2.0	2.5*

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Table 5-3: Methods of Expressing Effluent Limits for Sewage Discharges

Discharge Situation	Mass Loadings (lbs/day)			Concentrations (mg/L)				
	Average Monthly	Average Weekly[3]	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Instant Maximum[4]	Limit On Flow[6]
A. POTW DISCHARGES:								
1. Technology Based concentration limits	x	x[3]		x	x[3]		x	Yes
2. Water Quality Based limits	x	x[3]		x	x[3]		x	Yes
3. Water Quality Based limits (Toxics)	x		x	x		x		
B. NON-POTW DISCHARGES:								
1. Technology Based concentration limits	x[5]			x			x	Yes
2. Water Quality based limits	x[5]			x			x	Yes

1. This table is for all pollutants, conventional, non-conventional, toxic and all other pollutants that may be regulated by the permit. (Also refer to the toxics management strategy when specifying toxic WQBELs.)

2. X indicates need for an effluent limitation.

3. Only CBOD and TSS limitation.

4. Only include Instantaneous maximum limitations on the DMR forms if grab a sample is specified in the permit, otherwise do not include instantaneous maximum limitations on the DMR.

   Also, the permit page could include the following language for when composite samples are required "Instantaneous maximum limitations are imposed to allow for a grab sample to be collected by the appropriate regulatory agency to determine compliance. The permittee does not have to monitor for the instantaneous maximum limitations, however, if grab samples are collected by the permittee, the results must be reported."

5. This is for all sewage permits with design flow greater than 100,000 gpd since 25 Pa. Code § 94.13 requires flow monitoring.

6. The maximum monthly average flow limitation is the permitted flow that is to be placed in the NPDES permit. Generally, the annual average flow (AAF) is to be used for water quality modeling and to be used to determine the allowable mass loading in NPDES permits (i.e., AAF x 8.34 x mg/l = #/day) (Refer to the Domestic Wastewater Facilities Manual).

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers.

Table 6-3 – Self-Monitoring Requirements for SEWAGE Discharges

Plant Design Flow (MGD)	Flow Monitoring	C-BOD_5 or BOD_5	Suspended Solids	pH	Fecal Coliform	Chlorine Residual	NH_3-N	Phosphorus	DO	Toxics
Single Residence (Individual Permit)	2/year by estimate	2/year*	2/year*	1/month*	2/year*	1/month*	2/year*	2/year*	2/year*	N/A
.0005 to .002	weekly, using average pump rate or weir (a)	1/month*	1/month*	daily*	1/month*	daily*	1/month*	1/month*	daily*	N/A
.002 to .01	weekly, using average pump rate or weir (a)	2/month*	2/month*	daily*	2/month*	daily*	2/month*	2/month*	daily*	N/A
0.01 to 0.1	weekly, using average pump rate or weir (a)	2/month*	2/month*	daily*	2/month*	daily*	2/month*	2/month*	Daily*	1/week*
0.1 to 1.0	meter	1/week**	1/week**	daily*	1/week*	daily*	1/week**	1/week**	daily*	1/week****
1.0 to 5.0	meter	2/week***	2/week***	daily*	2/week*	daily*	2/week***	2/week***	daily*	1/week****
5.0 to 25.0	meter	daily***	daily***	daily*	daily*	1/shift*	daily***	daily***	daily*	1/week****
over 25.0	meter	daily***	daily***	1/shift*	daily*	1/shift*	1/shift***	1/shift***	1/shift*	1/week****

* Grab sample-these should be most representative of the effluent and are to be taken at a time when the normal daily maximum flow would reach the sampling point.

** 8-hour composite sample.

*** 24-hour composite sample.

**** Same sample type as for Industrial Process Wastewater (See Table 6-4).

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	XXX	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 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.63	1/day	Grab
CBOD5	20.0	33.0	XXX	25.0	40.0	50.0	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	1/week	Grab
TSS	25.0	37.0	XXX	30.0	45.0	60.0	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Ammonia-Nitrogen	20.8	31.2	XXX	25.0	37.5	50.0	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Aluminum	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Total Copper	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/week	8-Hr Composite
Total Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Total Lead	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/week	8-Hr Composite
Total Manganese	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite

Compliance Sampling Location: Outfall 001

Attachment 1-USGS StreamStats Report

StreamStats Report-Upstream

Region ID: PA
Workspace ID: PA20241112122058432000
Clicked Point (Latitude, Longitude): 40.02025, -78.91540
Time: 2024-11-12 07:21:21 -0500

PA0219312 Outlet Elevation: 2196.42'

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	60.3	square miles
ELEV	Mean Basin Elevation	2400	feet
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	-78142.6499	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	113661.0841	meters
PRECIP	Mean Annual Precipitation	42	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	60.3	square miles	2.33	1720
ELEV	Mean Basin Elevation	2400	feet	898	2700
PRECIP	Mean Annual Precipitation	42	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	8.67	ft^3/s	43	43
30 Day 2 Year Low Flow	11.5	ft^3/s	38	38
7 Day 10 Year Low Flow	4.18	ft^3/s	54	54
30 Day 10 Year Low Flow	5.26	ft^3/s	49	49
90 Day 10 Year Low Flow	7.59	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: 4.24.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report-Downstream

Region ID: PA
Workspace ID: PA20241112122508185000
Clicked Point (Latitude, Longitude): 40.02252, -78.91902
Time: 2024-11-12 07:25:31 -0500

PA0219321 Outlet Elevation: 2194.24'

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	64.4	square miles
ELEV	Mean Basin Elevation	2397	feet
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	-78451.3427	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	113921.3567	meters
PRECIP	Mean Annual Precipitation	42	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	64.4	square miles	2.33	1720
ELEV	Mean Basin Elevation	2397	feet	898	2700
PRECIP	Mean Annual Precipitation	42	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	9.26	ft^3/s	43	43
30 Day 2 Year Low Flow	12.3	ft^3/s	38	38
7 Day 10 Year Low Flow	4.48	ft^3/s	54	54
30 Day 10 Year Low Flow	5.64	ft^3/s	49	49
90 Day 10 Year Low Flow	8.12	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: 4.24.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 2-WQM 7.0 Model

Summer

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	45084	STONYCREEK RIVER	**36.300**	2196.42	60.30	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	0.070	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
Shanksville STP	PA0219321	0.1000	0.0000	0.0000	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	4.00	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	45084	STONYCREEK RIVER	**35.920**	2194.24	60.31	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	0.070	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	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.17	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Winter

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	45084	STONYCREEK RIVER	**36.300**	2196.42	60.30	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	0.139	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
Shanksville STP	PA0219321	0.1000	0.0000	0.0000	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	4.00	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	45084	STONYCREEK RIVER	**35.920**	2194.24	60.31	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	0.139	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	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.80	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	45084	STONYCREEK RIVER

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												
36.300	8.41	0.00	8.41	.1547	0.00109	1.851	18.51	10	0.25	0.093	5.18	7.00
Q1-10 Flow												
36.300	5.38	0.00	5.38	.1547	0.00109	NA	NA	NA	0.20	0.119	5.28	7.00
Q30-10 Flow												
36.300	11.43	0.00	11.43	.1547	0.00109	NA	NA	NA	0.30	0.078	5.13	7.00

Tuesday, November 12, 2024 Version 1.0b Page 1 of 1

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		

Tuesday, November 12, 2024 Version 1.0b Page 1 of 1

Attachment 3-TMS Model Report

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Shanksville Borough STP** NPDES Permit No.: **PA0219321** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated 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
0.1	100	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
					Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L	<	1									
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	mg/L		0.2									
	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	mg/L		0.03									
	Free Cyanide	mg/L		0.02									
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	mg/L		0.56									
	Total Lead	mg/L	<	0.02									
	Total Manganese	mg/L		1.06									
	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	mg/L		0.04									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Shanksville Borough STP, NPDES Permit No. PA0219321, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Stony Creek River**

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	045084	36.3	2196.42	60.3			Yes
End of Reach 1	045084	35.92	2194.24	60.31			Yes

$Q_{7\text{-}10}$

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	36.3	0.0697										100	7		
End of Reach 1	35.92	0.0697													

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	36.3														
End of Reach 1	35.92														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Shanksville Borough STP, NPDES Permit No. PA0219321, Outfall 001

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

☑ ***Hydrodynamics***

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
36.3	4.20		4.20	0.155	0.001	0.701	36.269	51.703	0.171	0.136	86.607
35.92	4.20		4.203607								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
36.3	26.06		26.06	0.155	0.001	1.545	36.269	23.476	0.468	0.05	28.15
35.92	26.064		26.06								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.416 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

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	9,230	
Total Copper	0	0		0	13.439	14.0	172	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	271	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	1,005	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	117.180	120	1,475	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 86.607 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

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 Copper	0	0		0	8.956	9.33	263	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	146	
Total Iron	0	0		0	1,500	1,500	42,252	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	89.6	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	118.139	120	3,375	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 86.607 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 Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	113	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	28,168	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 28.150 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 Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	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 Copper	Report	Report	Report	Report	Report	mg/L	0.11	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Lead	Report	Report	Report	Report	Report	mg/L	0.09	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
Bromide	N/A	N/A	No WQS
Total Aluminum	5.92	mg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	0.11	mg/L	Discharge Conc ≤ 25% WQBEL
Total Iron	42.3	mg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	28.2	mg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	0.95	mg/L	Discharge Conc ≤ 10% WQBEL

Attachment 4-TRC-Calc Report