pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0216089**
Facility Type	**Municipal**	APS ID	**1057284**
Major / Minor	**Minor**	Authorization ID	**1385922**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Municipal Authority of Westmoreland County**	Facility Name	**I-70 Industrial Park STP**
Applicant Address	124 Park and Pool Road New Stanton, PA 15672	Facility Address	Glacier Drive Smithton, PA 15479
Applicant Contact	Mr. Norman Stout	Facility Contact	Same as Applicant
Applicant Phone	(724) 640-7403	Facility Phone	Same as Applicant
Client ID	64197	Site ID	240119
Ch 94 Load Status	Not Overloaded	Municipality	South Huntingdon Township
Connection Status		County	Westmoreland
Date Application Received	February 18, 2022	EPA Waived?	No
Date Application Accepted		If No, Reason	DEP Discretion – EPA POTW Pretreatment Program Implementation

Purpose of Application: Application for the Renewal of a NPDES permit for the discharge of treated Sewage.

Summary of Review

The Authority has applied for a renewal of NPDES Permit No. PA0216089, which was previously issued by the Department on August 15, 2017. That permit expired on August 31, 2022.

WQM Permit No. 6594401 was issued on October 26, 1994, authorizing the construction of an STP to treat an average design flow of 0.05 MGD with a design organic loading of 85 lbs/day. The permit was later amended on March 29, 2018, authorizing installation of a UV disinfection system.

The STP consists of a comminutor, 2 aerated lagoons (operated in series), and a UV disinfection system. Please note that the existing chlorine contact tank, tablet chlorinator, and dichlorination system remains as a backup method of disinfection.

Application data indicates that there are 10 industrial/commercial users in the system and the Authority owns multiple WWTPs with a combined design flow greater than 5.0 MGD. Part C.II, POTW Pretreatment Program Implementation has been added to the permit. Since the WWTP does not receive flow from any Significant Industrial Users (SIUs), Part C.II.E Headworks Analysis has been modified to state that "Prior to accepting discharges from any user that meets the definition of significant industrial user in 40 CFR 403.3(v)(1), the permittee shall obtain approval from EPA of a reevaluation of its local limits based on a headworks analysis of its treatment plant."

The receiving stream, Youghiogheny River, is currently classified as a WWF, located in State Watershed No. 19-D.

The Authority has complied with Act 14 Notifications and no comments were received.

Approve	Deny	Signatures	Date
X		William C. Mitchell, E.I.T. / Environmental Engineering Specialist	July 29, 2024
X		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	July 31, 2024

Summary of Review

Sludge use and disposal description and location(s): Application data indicates that a total of 0 dry tons of sewage sludge/biosolids have been produced/wasted in the past year. They also indicated that the facility did not receive additional sludge from other sources and that none of sewage sludge/biosolids produced by this facility is not being managed under a beneficial use permit. The authority will be asked during the draft permit comment period to update the Department on the status of sludge use and disposal.

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)	0.05
Latitude	40º 11' 14.00"	Longitude	-79º 45' 41.00"
Quad Name	Donora	Quad Code	1707
Wastewater Description:	Sewage Effluent		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69913901	RMI	21.0
Drainage Area	1530.0	Yield (cfs/mi^2)	0.300
Q_{7-10} Flow (cfs)	460	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	747.0	Slope (ft/ft)	0.001
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County - McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.3	Distance from Outfall (mi)	19.7

Changes Since Last Permit Issuance: NONE

Other Comments: N/A

Treatment Facility Summary

Treatment Facility Name: I 70 Ind Park STP

WQM Permit No.	Issuance Date
6594401	10/26/1994
6594401 A-1	3/29/2018

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Aerated Lagoon	UV Disinfection (Chlorine with Dechlorination remains for backup purposes)	0.05

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.05	85	Not Overloaded	N/A	Hauled to Other Regional WWTP

Changes Since Last Permit Issuance: UV Disinfection added under WQM Permit No. 6594401 A-1.

Other Comments: N/A

Compliance History

Operations Compliance Check Summary Report

Facility: I-70 Industrial Park STP

NPDES Permit No.: PA0216089

Compliance Review Period: 6/1/19-6/6/24

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	INSPECTION COMMENT
08/23/2022	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted	
08/22/2022	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	An administrative review from 9/21/19 to 8/22/22 revealed one effluent violation for TSS 72 > 60 mg/L on 4/30/22 which has been notated on the 8/23/22 CEI report.
09/20/2019	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted	

Violation Summary:

No violations noted during review period

Open Violations by Client ID:

No open violations for Client ID 64197 with Clean Water Program. The following open violations exist for the Safe Drinking Water Program:

INSP ID	VIOLATION ID	INSPECTION CATEGORY	VIOLATION DATE	VIOLATION CODE	VIOLATION
3636509	8163423	PF	10/17/2023	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
3636509	8163424	PF	10/17/2023	C2D	FAILURE TO CALIBRATE TURBIDIMETERS USED FOR COMPLIANCE MONITORING
3636509	8163425	PF	10/17/2023	B5A	FAILURE OF A PUBLIC WATER SYSTEM TO OBTAIN A PERMIT
3570352	998599	PF	06/15/2023	C4A	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM
3570352	998600	PF	06/15/2023	C4A	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM
3570352	998601	PF	06/15/2023	C4A	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM

3570352	998602	PF	06/15/2023	C4A	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM

Enforcement Summary:

No enforcements executed during review period

Effluent Violation Summary:

MON_PD	PARAMETER	SAMPLE	PERMIT_VALUE	UNIT	STAT_BASE_CODE
4/1/2022	Total Suspended Solids	72	60.0	mg/L	Instantaneous Maximum

Compliance Status:

Facility is generally in compliance with no open violations or pending enforcements with Clean Water Program.

Completed by: Amanda Illar **Completed date:** 6/7/24

Compliance History

DMR Data for Outfall 001 (from June 1, 2023 to May 31, 2024)

Parameter	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23
Flow (MGD) Average Monthly	0.0054	0.0177	0.0191	0.0124	0.0226	0.0109	0.0093	0.0073	0.0056	0.0079	0.0064	0.007
pH (S.U.) Instantaneous Minimum	7.3	7.3	7.0	7.2	7.2	7.2	7.2	7.4	7.6	7.5	7.2	7.3
pH (S.U.) Instantaneous Maximum	7.6	7.7	7.4	7.6	7.7	7.7	8.0	8.0	8.0	7.9	8.0	8.0
DO (mg/L) Instantaneous Minimum	9.4	9	9	9.6	8.4	9.8	9.1	7.6	6.85	6.2	6.6	7.2
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (mg/L) Average Monthly	4.8	3.5	3.8	< 2.0	2.3	3.1	< 2.2	3.3	< 2.9	3.6	< 3.0	2.4
CBOD5 (mg/L) Instantaneous Maximum	5.9	4.4	4.6	< 2.0	2.4	3.3	2.4	3.7	3.8	3.7	4.0	2.8
TSS (mg/L) Average Monthly	3.5	4.5	2.5	1.1	2.0	< 0.6	< 1.1	2.0	2.0	5.5	< 5.0	< 2.0
TSS (mg/L) Instantaneous Maximum	5.0	5.0	4.0	2.0	3.0	1.0	2.0	3.0	3.0	7.0	< 5.0	< 2.0
Fecal Coliform (No./100 ml) Geometric Mean	< 2.0	< 2	< 2.0	< 2.0	< 2.0	< 2	< 2	< 2	< 2	< 2	< 2	< 2.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 2.0	< 2	< 2.0	< 2.0	< 2.0	< 2	< 2	< 2	< 2	2	< 2	< 2.0
UV Transmittance (%) Average Monthly	61.4	66.0	62.4	64.8	58	74.9	63.9	60.5	61.9	55.1	54.6	56.8
Total Nitrogen (mg/L) Daily Maximum						17.6						

Ammonia (mg/L) Average Monthly	1.16	2.92	5.63	6.68	2.36	1.1	0.69	0.11	0.33	2.27	6.59	1.72
Ammonia (mg/L) Instantaneous Maximum	1.69	4.53	5.77	6.88	3.64	1.12	0.86	0.12	0.41	2.55	6.89	2.62
Total Phosphorus (mg/L) Daily Maximum						5.0						

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.05
Latitude 40º 11 14.00" **Longitude** -79º 45 41.00"
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: The discharge was evaluated using WQM 7.0 Version 1.1 (Attachment 2) to evaluate $CBOD_5$, Ammonia Nitrogen, and Dissolved Oxygen. The modeling results show the above technology based effluent limitations are appropriate.

For existing discharges, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/L (ammonia-nitrogen) is acceptable, the application manager will generally establish a year-round monitoring requirement for ammonia-nitrogen (Section I.A, Note 5, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

Water Quality-Based Limitations

Comments: Based upon module output files (WQM 7.0, TMS, and TRC_CALC), no WQBELs will be established at this time for this facility (Attachments 2, 3, & 4).

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 is used, TRC limits are still applicable (TRC remains for backup purposes), but the limits table(s) in Part A will generally contain, at a minimum, routine monitoring of UV transmittance (%), UV dosage (µWs/cm2 or mWs/cm2 or mjoules/cm2) or UV intensity (µW/cm2 or mW/cm2) 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 $CBOD_5$, TSS, NH_3-N, and where necessary Total P and Total N. In general, average monthly mass loading limits will be established for $CBOD_5$, TSS, NH_3-N, and where necessary Total P and Total N, and average weekly mass loading limits will be established for $CBOD_5$ 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 BOD_5 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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	10.0	XXX	XXX	25.0	XXX	50.0	2/month	Grab
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
TSS	12.0	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
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia	Report	XXX	XXX	Report	XXX	Report	2/month	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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

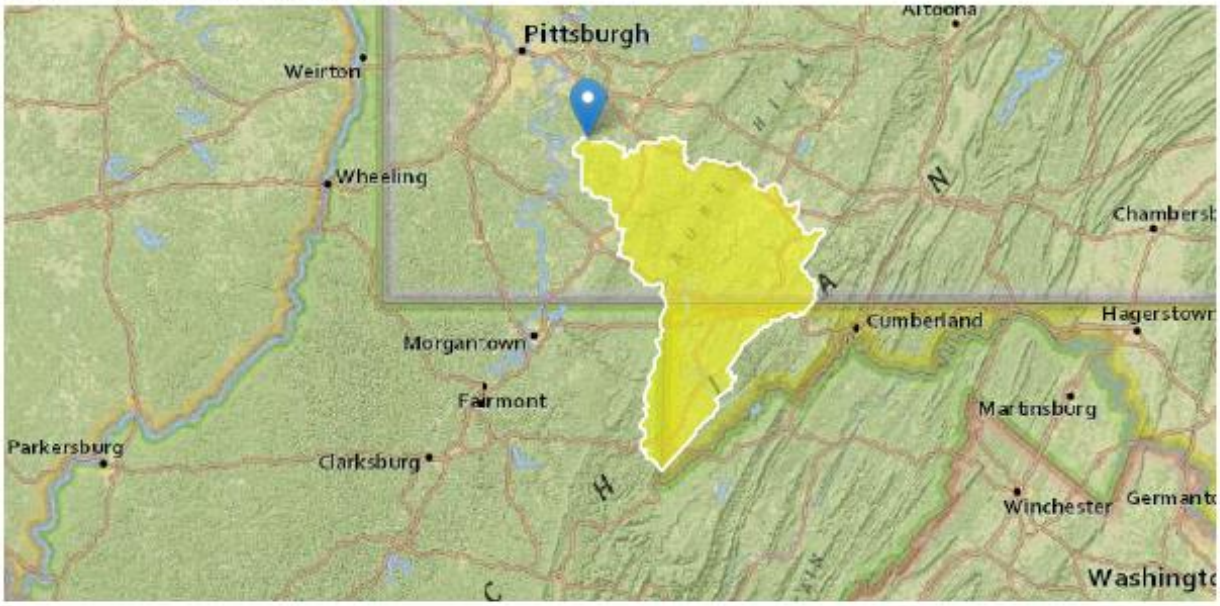
Compliance Sampling Location: Outfall 001

Other Comments: N/A

Attachment 1 – USGS StreamStats Report

PA0216089 - StreamStats Report

Region ID: PA
Workspace ID: PA20240624184628906000
Clicked Point (Latitude, Longitude): 40.18814, -79.76055
Time: 2024-06-24 14:47:01 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1530	square miles
ELEV	Mean Basin Elevation	2128	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1530	square miles	2.26	1400
ELEV	Mean Basin Elevation	2128	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	192	ft^3/s
30 Day 2 Year Low Flow	273	ft^3/s
7 Day 10 Year Low Flow	96	ft^3/s
30 Day 10 Year Low Flow	125	ft^3/s
90 Day 10 Year Low Flow	203	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/)

Application Version: 4.20.1
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
19D	37456	YOUGHIOGHENY RIVER	21.000	747.00	1530.00	0.00100	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	0.300	460.00	0.00	0.000	0.000	0.0	316.30	7.50	25.00	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
I-70 IP STP	PA0216089	0.0500	0.0500	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	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19D	37456	YOUGHIOGHENY RIVER	20.700	746.00	1531.00	0.00100	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	0.300	0.00	0.00	0.000	0.000	0.0	195.50	7.50	25.00	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	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
19D	37456	YOUGHIOGHENY 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												
21.000	460.00	0.00	460.00	.0773	0.00100	7.5	316.3	42.17	0.19	0.095	25.00	7.00
Q1-10 Flow												
21.000	294.40	0.00	294.40	.0773	0.00100	NA	NA	NA	0.12	0.148	25.00	7.00
Q30-10 Flow												
21.000	625.60	0.00	625.60	.0773	0.00100	NA	NA	NA	0.26	0.070	25.00	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
19D	37456	YOUGHIOGHENY RIVER

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
21.000	I-70 IP STP	11.07	50	11.07	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
21.000	I-70 IP STP	1.37	25	1.37	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
21.00	I-70 IP STP	25	25	25	25	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37456	YOUGHIOGHENY RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
21.000	0.050	24.999	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
316.300	7.500	42.173	0.194
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.00	0.003	0.00	1.028
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.242	0.311	O'Connor	5
Reach Travel Time (days)			
0.095			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.009	2.00	0.00	7.54
0.019	2.00	0.00	7.54
0.028	2.00	0.00	7.54
0.038	2.00	0.00	7.54
0.047	2.00	0.00	7.54
0.057	2.00	0.00	7.54
0.066	2.00	0.00	7.54
0.076	2.00	0.00	7.54
0.085	2.00	0.00	7.54
0.095	2.00	0.00	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	37456	YOUGHIOGHENY RIVER

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)
21.000	I-70 IP STP	PA0216089	0.050	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

Attachment 3 – TMS Version 1.4

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **I-70 Ind. Park STP** NPDES Permit No.: **PA0216089** Outfall No.: **001**

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

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
0.05	100	7.72						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc		0.5 if left blank: Daily CV	Hourly CV	0 if left blank: Strea m CV	Fate Coeff	FOS	1 if left blank: Criteri a 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	µg/L											
	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	<	0.005									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	mg/L	<	0.001									
	Total Manganese	µg/L											
	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	<	0.01									
	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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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

I-70 Ind. Park STP, NPDES Permit No. PA0216089, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Youghiogheny River**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037456	21	747	1530	0.001		Yes
End of Reach 1	037456	20.7	746	1531	0.001		Yes

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

Location	RMI	LFY (cfs/mi²)*	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	21	0.3	460			316.3	7.5					100	7		
End of Reach 1	20.7	0.3				195.5	7.5								

Q_h

Location	RMI	LFY (cfs/mi²)	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	21														
End of Reach 1	20.7														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

I-70 Ind. Park STP, NPDES Permit No. PA0216089, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.267 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 Copper	0	0		0	13.439	14.0	22,209	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	129,525	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	190,081	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): ###### 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 Copper	0	0		0	8.956	9.33	55,488	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	18,924	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	712,667	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): ###### 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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 93.564 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 Copper	0	0		0	N/A	N/A	N/A	

Total Lead	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

☑ ***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 Copper	14.2	mg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	122	mg/L	Discharge Conc ≤ 10% WQBEL

Attachment 3 – TRC_CALC

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

460	= Q stream (cfs)	0.5	= CV Daily
0.05	= 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 = 1897.110	1.3.2.iii	WLA cfc = 1849.526
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 706.908	5.1d	LTA_cfc = 1075.228

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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)

Page 1