Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0216071**
Facility Type	**Non-Municipal**	APS ID	**1108049**
Major / Minor	**Minor**	Authorization ID	**1474312**

Applicant and Facility Information

Applicant Name	**Univar Solutions USA LLC**	Facility Name	**Univar Solutions USA Bunola Branch**
Applicant Address	328 Bunola River Road	Facility Address	328 Bunola River Road
	Bunola, PA 15020		Bunola, PA 15020
Applicant Contact	Scott Heath	Facility Contact	Scott Heath
Applicant Phone	(215) 428-5511	Facility Phone	215-428-5511
Client ID	32864	Site ID	258699
Ch 94 Load Status	Not Overloaded	Municipality	Forward Township
Connection Status	No Limitations	County	Allegheny
Date Application Received	January 30, 2024	EPA Waived?	Yes
Date Application Accepted	May 14, 2024	If No, Reason	

Purpose of Application: Renewal of NPDES sewage permit

Summary of Review

The applicant has applied for the renewal of NPDES Permit PA0216071. The previous permit was issued on January 1, 2020 and expired on December 31, 2024.

Sewage from this plant is treated with a Wet Well, Pumps, Grinder, Aeration Tanks, Clarifier, Chlorinator, Contact Tank, Dechlor Feeder, RAS, Skimmer, Three Blowers, and a Sludge Holding Tank

The applicant is currently enrolled in and will continue to use eDMR.

The Act 14 notification letters were provided dated January 16, 2024 and no comments were received.

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.

Approve	Deny	Signatures	Date
X		Jordan T Coldsmith Jordan Coldsmith / Environmental Engineering Specialist	February 11, 2025
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	February 28, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.003
Latitude	40º 14' 15"	Longitude	-79º 56' 46"
Quad Name	Monongahela	Quad Code	40079B8
Wastewater Description:	Sewage Effluent		

Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408958	RMI	27.8
Drainage Area	5320	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	**550**	Q_{7-10} Basis	Army Corp of Engineers
Elevation (ft)	1826	Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
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	PA AMER WATER CO-PITTSBURGH		
PWS Waters	Monongahela River (WWF)	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	1.61

Changes Since Last Permit Issuance: None

Other Comments: N/A

Treatment Facility Summary

Treatment Facility Name: Bonola PA Facility

WQM Permit No.	Issuance Date
0294405	08/09/1994
0294405 A-1	06/07/2001
0294405 A-2	01/08/2003
0294405 A-3	03/01/2021
0294405 A-5	04/12/2024

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorine With Dechlorination	0.003

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.003		Not Overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: the current treatment process consists of:

- Wet Well
- Pumps
- Grinder
- Aeration Tanks
- Clarifier
- Chlorinator
- Contact Tank
- Dechlor Feeder
- RAS
- Skimmer
- Three Blowers
- Sludge Holding Tank

Compliance History

Operations Compliance Check Summary Report

Facility: UNIVAR SOLUTIONS USA BUNOLA BRANCH

NPDES Permit No.: PA0216071

Compliance Review Period: 2/1/20-2/20/25

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
08/31/2023	Compliance Evaluation	County Health Dept	Violation(s) Noted
07/27/2022	Compliance Evaluation	County Health Dept	Violation(s) Noted
06/23/2021	Compliance Evaluation	County Health Dept	Violation(s) Noted
07/16/2020	Incident- Response to Accident or Event	PA Dept of Environmental Protection	Administratively Closed
06/17/2020	Compliance Evaluation	County Health Dept	Violation(s) Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
08/31/2023	92A.44	NPDES - Violation of effluent limits in Part A of permit	09/12/2023
07/27/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit	08/19/2022
06/23/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit	01/26/2023
06/17/2020	92A.44	NPDES - Violation of effluent limits in Part A of permit	08/05/2020
06/17/2020	92A.61(C)	NPDES - Failure to monitor pollutants as required by the NPDES permit	08/05/2020

Open Violations by Client ID:

No open violations for Client ID 32864 with Clean Water Program. The following two open violations exist with Storage Tanks program in Southwest Region and Southeast Region.

FACILITY	INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION	INSP REGION
UNIVAR SOLUTIONS USA LLC BUNOLA BRANCH	Storage Tanks	02-32636	3918536	8217277	02/05/2025	245.533	Failure to meet aboveground storage tank system exterior coating requirements	SWRO
UNIVAR SOLUTIONS USA MV BRANCH	Storage Tanks	09-37816	3878730	8209856	12/04/2024	245.41(A)	Failure to register a storage tank and/or failure to pay the registration fee prior to registration certificate expiration	SERO

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	ENF FINAL STATUS	ENF CLOSED DATE
NOV	Notice of Violation	09/12/2023	92A.44	Administrative Close Out	09/12/2023
NOV	Notice of Violation	08/03/2022	92A.44	Administrative Close Out	01/02/2024
NOV	Notice of Violation	07/16/2021	92A.44	Administrative Close Out	01/02/2024
NOV	Notice of Violation	07/01/2020	92A.44; 92A.61(C)	Administrative Close Out	12/29/2023

Effluent Violation Summary:

MONPD	PARAMETER	REPORTED VALUE	PERMIT LIMIT	UNIT	STAT BASE CODE	FACILITY COMMENTS
May-24	Fecal Coliform	< 491	200	No./100 ml	Geometric Mean	High grab lab result increased monthly average.
May-24	Fecal Coliform	2420	1000	No./100 ml	Instantaneous Maximum	
Apr-24	pH	9.47	9.0	S.U.	Instantaneous Maximum	
Feb-24	pH	9.39	9.0	S.U.	Instantaneous Maximum	
Dec-23	Total Suspended Solids	42	30	mg/L	Average Monthly	
Jul-22	Fecal Coliform	< 393	200	No./100 ml	Geometric Mean	One high sample value raised average value.
Jul-22	Fecal Coliform	1554	1000	No./100 ml	Instantaneous Maximum	
May-22	Carbonaceous Biochemical Oxygen Demand (CBOD5)	70.8	50	mg/L	Instantaneous Maximum	
May-22	Fecal Coliform	< 606	200	No./100 ml	Geometric Mean	
May-22	Fecal Coliform	2420	1000	No./100 ml	Instantaneous Maximum	
Jul-21	Total Residual Chlorine (TRC)	2.1	1.6	mg/L	Instantaneous Maximum	equipment was adjusted when operator visited the facility to check on the system.
May-21	Fecal Coliform	< 339	200	No./100 ml	Geometric Mean	The increased fecal result happened in May. The operator has increase the chlorine dosage and all results have been below

						the effluent limitations since.
May-21	Fecal Coliform	1204	1000	No./100 ml	Instantaneous Maximum	The increased fecal result happened in May. The operator has increase the chlorine dosage and all results have been below the effluent limitations since.
Oct-20	Total Residual Chlorine (TRC)	1.66	1.6	mg/L	Instantaneous Maximum	
Sep-20	Total Residual Chlorine (TRC)	2.06	1.6	mg/L	Instantaneous Maximum	
Jul-20	Total Residual Chlorine (TRC)	2.2	1.6	mg/L	Instantaneous Maximum	
Jun-20	Total Residual Chlorine (TRC)	1.84	1.6	mg/L	Instantaneous Maximum	

Compliance Status: Facility is in general compliance; There are currently no open violations or pending enforcements for Clean Water Program in Southwest Region. Open violations exist with Storage Tanks Program in Southwest and Southeast Regions.

Completed by: Amanda Illar **Completed date:** 2/20/25

Compliance History

DMR Data for Outfall 001 (from January 1, 2024 to December 31, 2024)

Parameter	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24
Flow (MGD) Average Monthly	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.001
pH (S.U.) Instantaneous Minimum	6.88	7.09	7.15	7.21	6.92	7.08	7.02	7.01	7.11	7.2	6.81	7.2
pH (S.U.) Instantaneous Maximum	7.63	7.56	7.74	7.89	7.48	7.78	7.99	7.62	9.47	8.5	9.39	7.8
DO (mg/L) Instantaneous Minimum	9.87	8.75	8.358	8.122	8.2	8.07	8.49	8.16	9.7	10.0	10.41	9.87
TRC (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01
TRC (mg/L) Instantaneous Maximum	0.04	0.04	< 0.03	0.06	0.03	0.04	0.04	0.03	< 0.1	0.03	0.04	0.03
CBOD5 (mg/L) Average Monthly	6.3	< 3.0	< 3	< 3	< 3	< 4	< 3	< 3	5.6	3.9	< 4	< 4.2
CBOD5 (mg/L) Instantaneous Maximum	6.9	< 3.0	3	3	3	4	< 3	< 3	6.3	4.4	5	5.4
TSS (mg/L) Average Monthly	< 0.1	14	12	7	28	< 1	< 7	< 3	24	15	19	27
TSS (mg/L) Instantaneous Maximum	0.04	16	29	8	34	< 1	11	3	47	22	21	34
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	1	< 1	< 1	< 1	< 1	< 491	< 1	< 116	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	1	17	4	< 1	< 1	1	2420	< 1	462	921	2
Ammonia (mg/L) Average Monthly	0.41	< 0.6	< 0.10	< 0.10	< 0.1	0.33	0.36	< 0.93	2.21	1.52	< 2.24	2.94

Ammonia (mg/L) Instantaneous Maximum	1.54	2.15	< 0.10	0.30	< 0.1	0.56	0.56	1.76	2.96	2.72	4.38	3.38

Compliance History

Effluent Violations for Outfall 001, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
pH	04/30/24	IMAX	9.47	S.U.	9.0	S.U.
pH	02/29/24	IMAX	9.39	S.U.	9.0	S.U.
Fecal Coliform	05/31/24	Geo Mean	< 491	No./100 ml	200	No./100 ml
Fecal Coliform	05/31/24	IMAX	2420	No./100 ml	1000	No./100 ml

Summary of Inspections:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .003
Latitude 40º 14' 15.00" **Longitude** -79º 56' 46.00"
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)

Water Quality-Based Limitations

The discharge was evaluated using WQM7.0 to determine the $CBOD_5$, ammonia nitrogen, and dissolved oxygen parameters. The model results show the limits for CBOD5, ammonia and DO will not change.

TRC was calculated using the TRC Spreadsheet. The spreadsheet shows TRC will not change.

Parameter	Limit (mg/l)	SBC	Model
$CBOD_5$	25 50	Average Monthly IMAX	WQM7.0
Dissolved Oxygen	4	Minimum	WQM7.0
Ammonia-Nitrogen	25 50	Average Monthly IMAX	WQM7.0
TRC	0.5 1.6	Average Monthly IMAX	TRC Spreadsheet

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

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 - 0.05 MGD.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Department's "Technical Guidance for the Development and Specification of Effluent Limitations".

An annual sampling frequency for total phosphorus and total nitrogen will again be imposed per 25 PA Code §92a.61.

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	XXX	XXX	XXX	XXX	XXX	2/month	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
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
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	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	25	XXX	50	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

Other Comments: none

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Attachment 1
TRC Calculation

TRC_CALC (1)

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

550	= Q stream (cfs)	0.5	= CV Daily
0.003	= 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 =	37804.372	1.3.2.iii	WLA cfc =	#########
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	14086.811	5.1d	LTA_cfc =	#########

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)

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Attachment 2
Upstream USGS StreamStat

StreamStats Report

Region ID: PA
Workspace ID: PA20250224225121957000
Clicked Point (Latitude, Longitude): 40.24090, -79.94719
Time: 2025-02-24 17:51:52 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5320	square miles
ELEV	Mean Basin Elevation	1826	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	5320	square miles	2.26	1400
ELEV	Mean Basin Elevation	1826	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	700	ft^3/s
30 Day 2 Year Low Flow	928	ft^3/s
7 Day 10 Year Low Flow	410	ft^3/s
30 Day 10 Year Low Flow	478	ft^3/s
90 Day 10 Year Low Flow	709	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: 4.27.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

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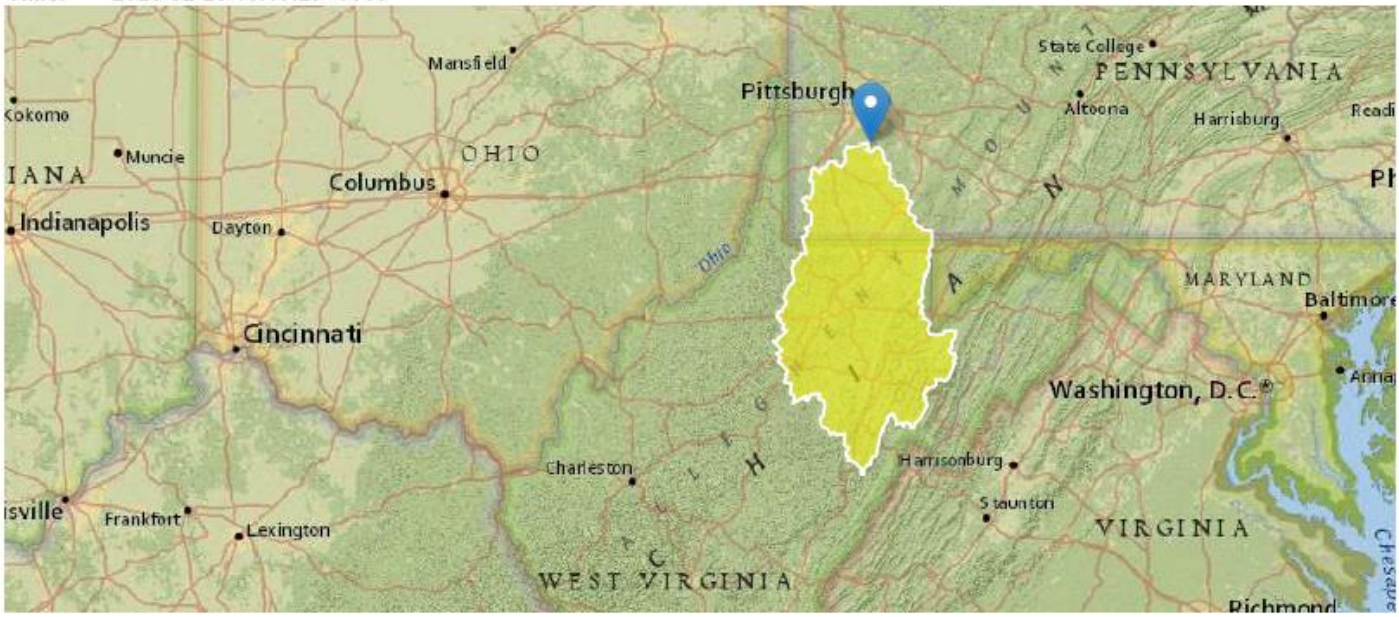
Attachment 3
Downstream USGS StreamStat

Pennsylvania Department of

StreamStats Report

Region ID: PA
Workspace ID: PA20250225151854410000
Clicked Point (Latitude, Longitude): 40.24485, -79.92601
Time: 2025-02-25 10:19:29 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5330	square miles
ELEV	Mean Basin Elevation	1826	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	5330	square miles	2.26	1400
ELEV	Mean Basin Elevation	1826	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	702	ft^3/s
30 Day 2 Year Low Flow	930	ft^3/s
7 Day 10 Year Low Flow	411	ft^3/s
30 Day 10 Year Low Flow	479	ft^3/s
90 Day 10 Year Low Flow	710	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: 4.27.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

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Attachment 4
Summer WQM7 Modeling

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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
19A	37185	MONONGAHELA RIVER	**27.800**	1826.00	5320.00	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	0.100	550.00	0.00	0.000	0.000	10.0	0.00	0.00	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
Univar Bunola	PA0216071	0.0030	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	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
19A	37185	MONONGAHELA 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												
27.800	550.00	0.00	550.00	.0046	0.00019	1.208	480.61	398.02	0.95	0.064	25.00	7.00
Q1-10 Flow												
27.800	352.00	0.00	352.00	.0046	0.00019	NA	NA	NA	0.74	0.083	25.00	7.00
Q30-10 Flow												
27.800	748.00	0.00	748.00	.0046	0.00019	NA	NA	NA	1.13	0.054	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
19A	37185	MONONGAHELA 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
27.800	Univar Bunola	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
27.800	Univar Bunola	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)		
27.80	Univar Bunola	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
27.800	0.003	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
480.612	1.208	398.022	0.948
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.00	0.000	0.00	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.243	0.943	Tsivoglou	5
Reach Travel Time (days)			
0.064			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.006	2.00	0.00	7.54
0.013	2.00	0.00	7.54
0.019	2.00	0.00	7.54
0.026	2.00	0.00	7.54
0.032	2.00	0.00	7.54
0.039	2.00	0.00	7.54
0.045	2.00	0.00	7.54
0.052	2.00	0.00	7.54
0.058	2.00	0.00	7.54
0.064	2.00	0.00	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA 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)
27.800	Univar Bunola	PA0216071	0.003	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Pennsylvania
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Attachment 5
Winter WQM7 Modeling

Pennsylvania
Department of
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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
19A	37185	MONONGAHELA RIVER	**27.800**	1826.00	5320.00	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	0.200	550.00	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
Univar Bunola	PA0216071	0.0030	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	12.51	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
19A	37185	MONONGAHELA 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												
27.800	550.00	0.00	550.00	.0046	0.00019	1.208	480.61	398.02	0.95	0.064	5.00	7.00
Q1-10 Flow												
27.800	352.00	0.00	352.00	.0046	0.00019	NA	NA	NA	0.74	0.083	5.00	7.00
Q30-10 Flow												
27.800	748.00	0.00	748.00	.0046	0.00019	NA	NA	NA	1.13	0.054	5.00	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
19A	37185	MONONGAHELA 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
27.800	Univar Bunola	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
27.800	Univar Bunola	4.36	25	4.36	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)		
27.80	Univar Bunola	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
27.800	0.003	5.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
480.612	1.208	398.022	0.948
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.00	0.000	0.00	0.221
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
12.510	0.587	Tsivoglou	5
Reach Travel Time (days)			
0.064			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.006	2.00	0.00	11.45
0.013	2.00	0.00	11.45
0.019	2.00	0.00	11.45
0.026	2.00	0.00	11.45
0.032	2.00	0.00	11.45
0.039	2.00	0.00	11.45
0.045	2.00	0.00	11.45
0.052	2.00	0.00	11.45
0.058	2.00	0.00	11.45
0.064	2.00	0.00	11.45

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA 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)
27.800	Univar Bunola	PA0216071	0.003	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4