Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0091782**
Facility Type	**Municipal**	APS ID	**1102772**
Major / Minor	**Major**	Authorization ID	**1465303**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**West Hills Area Water Poll Control Authority**	Facility Name	**West Hills Area Water Poll Control Authority STP**
Applicant Address	257 Linde Road	Facility Address	257 Linde Road
	Kittanning, PA 16201-4719		Kittanning, PA 16201-4719
Applicant Contact	Joshua Mull	Facility Contact	
Applicant Phone	(724) 545-9126	Facility Phone	
Client ID	43725	Site ID	263588
Ch 94 Load Status	Not Overloaded	Municipality	North Buffalo Township
Connection Status	Dept. Imposed Connection Prohibitions	County	Armstrong
Date Application Received	December 5, 2023	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility

Purpose of Application: Renewal of NPDES permit for discharge of treated sewage

Summary of Review

1.0 General Discussions

This factsheet supports the renewal of an existing NPDES permit for discharge of treated domestic wastewater from West Hills Area Water Poll Control Authority STP. The West Hills Area Water Pollution Control Authority owns and operates the sewage treatment plant in North Buffalo Township, Armstrong County. Sewage is collected from East Franklin Township, West Kittanning Borough, North Buffalo Township, and Applewood Borough. The treatment system consists of flow equalization, aeration, clarification and chlorine disinfection before discharging to the Allegheny River through outfall 001. Allegheny River is classified for Warm Water Fishes (WWF). The existing NPDES permit was issued on May 13, 2019, with an effective date of June 1, 2019, and expiration date of May 31, 2024. The permit was amended on April 06, 2020, to add UV dosage monitoring. The applicant submitted a timely NPDES permit renewal application to the Department and is currently operating under the terms and conditions in the existing permit. A topographic map showing discharge location is presented in attachment A.

1.1 Sludge use and disposal description and location(s):

Sludge is aerobically digested and dewatered with a belt filter press before being landfilled at the Seneca Landfill.

1.2 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

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P. E. / Environmental Engineer	November 21, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	January 23, 2026

Summary of Review
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.

1.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.3
Latitude	40º 48' 3.12"	Longitude	-79º 30' 57.86"
Quad Name	Kittanning	Quad Code	1209
Wastewater Description:	Sewage Effluent		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	134403860	RMI	44.2
Drainage Area	8590	Yield (cfs/mi^2)	0.091
Q_{7-10} Flow (cfs)	814.45	Q_{7-10} Basis	USGS Gage Station
Elevation (ft)	770	Slope (ft/ft)	
Watershed No.	17-E	Chapter 93 Class.	WWF
Existing Use	Add N	Existing Use Qualifier	
Exceptions to Use	none	Exceptions to Criteria	none
Assessment Status	Impaired		
Cause(s) of Impairment	PCB		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)	25	Default for WWF
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake		North Buffalo Township	
PWS Waters	Allegheny River	Flow at Intake (cfs)	
PWS RMI	29.3	Distance from Outfall (mi)	15.0

1.3.1 Water Supply Intake

The nearest downstream potable water supply is the North Buffalo Township on the Allegheny River, located approximately 15 miles below the point of discharge. Due to the distance and dilution, no impact is expected from this discharge on the intake.

2.0 Treatment Facility Summary

Treatment Facility Name: West Hills Area Wpca STP

WQM Permit No.	Issuance Date
0379404	3/12/1980
0379404	8/19/2015

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Hypochlorite/UV	1.3

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.3	2210	Not Overloaded	Belt Filtration	Landfill

Changes Since Last Permit Issuance: N/A

2.1 Treatment System

Treatment system consists of a mechanical bar screen/grit removal, aeration tanks, 2 clarifiers., UV and/or Chlorine disinfection with chlorine contact tank. Solids handling consists of sludge thickening, aerobic digestion, and dewatering with belt filter press.

3.0 Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Average Monthly	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
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	271.0	406.0	XXX	25.0	37.5	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	Report	Report Wkly Avg	XXX	XXX	2/week	24-Hr Composite
TSS	325.0	488.0	XXX	30.0	45.0	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Total Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia	271.0	XXX	XXX	25.0	XXX	50	2/week	24-Hr Composite
Total Phosphorus	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
UV Dosage (mjoules/cm²)	XXX	XXX	Report Daily Min	Report	XXX	XXX	1/day	Visual

3.1 Compliance History

3.1.1 DMR Data for Outfall 001 (from September 1, 2024 to August 31, 2025)

Parameter	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24
Flow (MGD) Average Monthly	0.49	0.55	0.78	0.82	0.80	0.64	1.00	0.65	0.61	0.57	0.55	0.54
Flow (MGD) Daily Maximum	0.64	0.79	1.64	2.10	2.04	0.94	3.02	0.91	1.11	0.97	0.75	0.75
pH (S.U.) Instantaneous Minimum	6.47	6.55	6.87	6.58	6.59	6.86	7.00	6.71	6.42	6.08	6.03	6.02
pH (S.U.) Instantaneous Maximum	7.05	7.55	7.44	7.13	7.14	7.31	7.24	7.22	6.97	6.63	6.56	6.65
DO (mg/L) Instantaneous Minimum	4.36	4.53	4.01	4.71	4.01	4.14	4.45	4.45	5.01	4.04	4.02	4.14
TRC (mg/L) Average Monthly	0.40	0.16	0.11	0.21	0.14	0.06	0.02	0.28	0.07	0.15	0.11	0.18
TRC (mg/L) Instantaneous Maximum	0.81	0.53	0.54	0.95	0.53	0.22	1.40	1.40	0.88	0.52	0.24	0.38
CBOD5 (lbs/day) Average Monthly	22	22	112	49	45	65	137	60	47	35	30	30
CBOD5 (lbs/day) Weekly Average	29	33	138	207	113	135	187	123	107	54	39	32
CBOD5 (mg/L) Average Monthly	5.0	5.0	7.0	7.0	8.0	13.0	16.0	11.0	8.0	7.0	7.0	5.0
CBOD5 (mg/L) Weekly Average	8.0	6.0	20.0	22.0	20.0	25.0	23.0	23.0	18.0	10.0	8.0	7.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	901	703	646	643	753	564	892	882.0	704	734	617	699
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	1510	1039	750	372	946	692	1491	1076.0	1407	1259	761	818
BOD5 (mg/L) Raw Sewage Influent Average Monthly	206	144	116	103	137	114	103	167.0	129	148	133	125
BOD5 (mg/L) Raw Sewage Influent Weekly Average	282	204	176	166	185	171	202	214.0	175	263	184	172
TSS (lbs/day) Average Monthly	87	37.0	91	143	77	208	115.0	192.0	160	45.00	36	29.0

TSS (lbs/day) Raw Sewage Influent Average Monthly	813	766	588	579	588	486	632.00	781.0	697	45	617	538
TSS (lbs/day) Raw Sewage Influent Weekly Average	1478	1086	809	1166	852	630	841	1064.0	1379	73	761	818
TSS (lbs/day) Weekly Average	269	88.0	446	787	158	517	148.0	827.0	476	73.00	82	53.0
TSS (mg/L) Average Monthly	22.0	8.0	10.0	17.0	13.0	39.0	14.0	34.0	34.0	9.00	8.0	7.0
TSS (mg/L) Raw Sewage Influent Average Monthly	187	155.0	105	94	107	96.0	76.0	148.0	129	9	102	74
TSS (mg/L) Raw Sewage Influent Weekly Average	322	196.0	150	176	180	128.0	118.0	184.0	189	14	169	135
TSS (mg/L) Weekly Average	76.0	18.0	34.0	85.0	28.0	100.0	17.0	143.0	114.0	14.00	16.0	13.0
Fecal Coliform (No./100 ml) Geometric Mean	881	526	1590	542	265	2420	771	771	1376	505	818	94
Fecal Coliform (No./100 ml) Instantaneous Maximum	2420	2420	2420	2420	2420	2420	2420	2420	2420	2420	2420	2420
Total Nitrogen (lbs/day) Daily Maximum			65			77			0.5			143
Total Nitrogen (mg/L) Daily Maximum			14.2			15.7			0.13			33
Ammonia (lbs/day) Average Monthly	18	71.0	113	83.0	74	102	139	96.0	160	20	15.0	8.0
Ammonia (mg/L) Average Monthly	3.94	136.0	19.6	13.83	13.53	20.0	16.39	18.20	3.32	3.95	2.96	1.68
Total Phosphorus (lbs/day) Daily Maximum			6			6			8			17
Total Phosphorus (mg/L) Daily Maximum			1.38			1.16			2.25			3.97

3.1.1 Effluent Violations for Outfall 001, from: October 1, 2024 To: August 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	05/31/25	Wkly Avg	787	lbs/day	488	lbs/day
TSS	03/31/25	Wkly Avg	517	lbs/day	488	lbs/day
TSS	01/31/25	Wkly Avg	827.0	lbs/day	488	lbs/day
TSS	12/31/24	Avg Mo	34.0	mg/L	30.0	mg/L
TSS	01/31/25	Avg Mo	34.0	mg/L	30.0	mg/L
TSS	03/31/25	Avg Mo	39.0	mg/L	30.0	mg/L
TSS	08/31/25	Wkly Avg	76.0	mg/L	45.0	mg/L
TSS	01/31/25	Wkly Avg	143.0	mg/L	45.0	mg/L
TSS	05/31/25	Wkly Avg	85.0	mg/L	45.0	mg/L
TSS	12/31/24	Wkly Avg	114.0	mg/L	45.0	mg/L
TSS	03/31/25	Wkly Avg	100.0	mg/L	45.0	mg/L
TSS	01/31/25	Wkly Avg	143.0	mg/L	45.0	mg/L
Fecal Coliform	03/31/25	Geo Mean	2420	No./100 ml	2000	No./100 ml
Fecal Coliform	07/31/25	Geo Mean	526	No./100 ml	200	No./100 ml
Fecal Coliform	06/30/25	Geo Mean	1590	No./100 ml	200	No./100 ml
Fecal Coliform	08/31/25	Geo Mean	881	No./100 ml	200	No./100 ml
Fecal Coliform	05/31/25	Geo Mean	542	No./100 ml	200	No./100 ml
Fecal Coliform	05/31/25	IMAX	2420	No./100 ml	1000	No./100 ml
Fecal Coliform	06/30/25	IMAX	2420	No./100 ml	1000	No./100 ml
Fecal Coliform	07/31/25	IMAX	2420	No./100 ml	1000	No./100 ml

Fecal Coliform	08/31/25	IMAX	2420	No./100 ml	1000	No./100 ml
Ammonia	07/31/25	Avg Mo	136.0	mg/L	25.0	mg/L

3.1.2 Summary of DMRs:

DMRs reviewed for the facility for the last 12 months of operation, presented on the table above in section 3.1.1 indicates permit limits have not been met consistently. TSS, Fecal Coliform and Ammonia effluent violations were noted during the period reviewed and presented in section 3.1.2. There is no open violation for the facility in eFACTS, but the facility should address the violations noted on the DRMs.

3.1.3 Summary of Inspections:

The facility has been inspected a couple of times during the previous permit cycle. No effluent violations were noted during plant inspects.

4.0 Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.3
Latitude 40º 48' 5.00" **Longitude** -79º 31' 2.00"
Wastewater Description: Sewage Effluent

4.1 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)

4.2 Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows: Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

4.3 Water Quality-Based Limitations

4.3.1 WQM 7.0 Stream Model

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for $CBOD_5$, NH_3-N and DO in permits. The model simulates mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria and also simulates mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits

4.3.2 Stream flows

The stream flows are based on USGS Gage Station #03036500 on Allegheny River at Kittanning, PA. The modelled yield is 0.091-cfs per square mile based on gage station Q_{7-10} of 814cfs and drainage area of 8973 square miles. The drainage area at the discharge point taken from the previous factsheet = 8950mi^2. The resulting streamflows at the point of discharge are as follows:

Q_{7-10} = 8950mi^2 x 0.091 cfs/mi^2 = 814.45 cfs
Q_{30-10}/ Q_{7-10} = 1.36
Q_{1-10}/ Q_{7-10} = 0.6

4.3.3 Input for WQM and TMS Models

The following data were used in the WQM and TMS models for water quality analysis of the stream

- Discharge pH = 6.03 (DMR median)
- Discharge Temperature = 25 ^{o} C (Default)
- Discharge Hardness = 100 mg/l (Default)

4.3.4 $CBOD_5$

The attached results of WQM 7.0 stream model (attachment B) indicates a monthly average limit (AML) of 25mg/L CBOD5 is required to protect the water quality of the stream. The recommended limit is consistent with the existing permit limit and the facility is meeting the limits. Therefore, the existing AML of 25 mg/L, weekly average limit (AWL) of 37.5mg/L and instantaneous maximum (IMAX) of 50mg/L will remain with 2/week sampling frequency. Mass limits are calculated for AMLs and AWLs following the formula listed in section 4.2 above.

4.3.5 NH_3-N

The attached results of the WQM 7.0 stream model (attachment B) also indicate AML of mg/l 25 NH_3-N and IMAX of 50 mg/L are necessary to protect the aquatic life from toxicity effects. These limits are consistent with the existing limits, and will remain with 2/week sampling frequency. Associated mass limits are calculated following the formula listed in section 4.2 above.

4.3.6 Total Suspended Solids (TSS):

There is no water quality criteria for TSS. The existing limit of 30 mg/l AML based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 PA § 92a.47(a)(1) and an AWL of 45mg/L per 40CFR 133.102(b)(2) and 25 PA § 92a.47(a)(2) with their associated mass limit will remain in the permit with the existing sampling frequency of 2/week.

4.3.7 Toxics

A reasonable potential (RP) analysis was done for pollutant groups 1-6 provided in the application. DEP's Toxics Management Spreadsheet (TMS)(Version 1.4). was used to calculate water quality-based effluent limits (WQBELs). WQBELs recommended by the TMS are presented in attachment C. No limitation or monitoring is recommended. The recommended limits follow the logic presented in DEPs SOP, to establish limits in the permit where the maximum reported concentration exceeds 50% of the WQBEL, or for non-conservative pollutants to establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL, or to establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% - 50% of the WQBEL.

4.3.8 Total Residual Chlorine and Ultraviolet (UV) Light.

The attached TRC calculation results utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The results presented in attachment D indicates AML of 0.5 mg/L and IMAX of 1.6 mg/L would be needed to prevent toxicity concerns. The recommended limitation is consistent with existing permit limit and will remain. The facility has a UV system as well for disinfection but not using it currently. UV dosage monitoring is required for the UV system.

4.3.9 Fecal Coliform and E. Coli

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD and 1/year for design flows of 0.002 and < 0.05 MGD. Your discharge of 1.3 MGD requires 1/month monitoring as included in the permit.

4.3.10 Best Professional Judgment (BPJ) Limitations

The existing daily minimum dissolved oxygen limit of 4.0 mg/l, and quarterly monitoring for total nitrogen and total phosphorus and daily UV dosage monitoring will remain in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits".

4.3.11 Influent BOD and TSS Monitoring

The existing influent BOD5 and TSS monitoring at the same frequency as is done for effluent will remain in order to implement Chapter 94.12 and assess percent removal requirements.

4.3.12 Pretreatment Requirements

The design annual average flow of the treatment plant is 1.3 MGD and the facility receives flow from no significant Industrial users. There is no approved pretreatment program for the facility, however, the permit contains standard conditions requiring the permittee to monitor and control industrial users if applicable.

5.0 Other Considerations and Requirements

5.1 Flow Monitoring

The requirement to monitor the volume of effluent will remain in the permit per 40 CFR § 122.44(i)(1)(ii).

5.2 The permit contains the following special conditions:

1. Stormwater Prohibition. 2. Approval Contingencies, 3. Proper Waste/solids Management, 4. Restriction on receipt of hauled in waste under certain conditions. 5. Chlorine minimization.

5.3 Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge

5.4 Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

5.5 303d Listed Streams

The discharge is located on a 303d listed stream segment as impaired for fish consumption by PCB caused unknown. TMDL development is pending, therefore no further action is warranted at this time.

6.0 Whole Effluent Toxicity (WET)

6.1 For Outfall 001, ☐ Acute ☒ Chronic WET Testing was completed:

☒ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☐ Other:

The dilution series used for the tests was: 100%, 60%, 30%, 2%, and 1%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is 1% according to the current permit, but 2% was used instead by the lab because the current permit was not shared with the lab. The error was not discovered until permit renewal. DEP determined that since the TIWC used was greater than the TIWC in the permit, it is acceptable and considered passed. The renewed permit will use the correct TIWC for analysis.

6.2 Summary of Four Most Recent Test Results

6.2.1 TST Data Analysis

WET Summary and Evaluation

Facility Name	West Hills Area Water Poll Cont
Permit No.	PA00091287
Design Flow (MGD)	1.3
Q_{7-10} Flow (cfs)	814.45
PMF_a	0.035
PMF_c	0.245

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/26/20	5/30/22	5/30/23	5/28/24
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/28/20	5/30/22	5/30/23	5/28/24
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/26/20	5/31/22	5/30/23	5/28/24
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/26/20	5/31/22	5/30/23	5/28/24
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**	
TIWC	**1**	% Effluent
Dilution Series	**1, 2, 30, 60, 100**	% Effluent
Permit Limit	**None**	
Permit Limit Species		

See attachment E for additional results of DEP WET Analysis Spreadsheet

6.3 Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.035** Chronic Partial Mix Factor (PMFc): **0.245**

6.3.1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(1.3 MGD x 1.547) / ((814.45cfs x 0.035) + (1.3 MGD x 1.547))] x 100 = **6.6%**

Is IWCa < 1%? ☐ **YES** ☒ **NO (YES - Acute Tests Required OR NO - Chronic Tests Required)**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

Type of Test for Permit Renewal: **Chronic**

6.3.2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = IWCa / 0.3 = **%**

6.3.2b. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(1.3 MGD x 1.547) / ((814.45cfs x 0.245) + (1.3 MGD x 1.547))] x 100 = **1%**

6.3.3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 60%, 30%, 2%, and 1%.

6.4 WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

If WET limits will be established, identify the species and the limit values for the permit (TU).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

7.0 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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	271.0	406.0	XXX	25.0	37.5	50	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Total Suspended Solids	325.0	488.0	XXX	30.0	45.0	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen	271.0	XXX	XXX	25.0	XXX	50	2/week	24-Hr Composite

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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ultraviolet light dosage (mjoules/cm²)	XXX	XXX	Report	Report	XXX	XXX	1/day	Visual

Compliance Sampling Location: At outfall 001

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

Attachments

A. Topographical Map

B. WQM Model Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18A	42122	ALLEGHENY 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)
44.200	West Hills Area	PA0091782	1.300	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

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
18A	42122	ALLEGHENY RIVER	44.200	770.00	89500.00	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	0.091	0.00	0.00	0.000	0.000	0.0	10.00	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
West Hills Area	PA0091782	1.3000	1.3000	1.3000	0.000	25.00	6.03

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

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
18A	42122	ALLEGHENY RIVER	**40.500**	754.00	95500.00	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	0.091	0.00	0.00	0.000	0.000	0.0	10.00	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
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18A	42122	ALLEGHENY 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												
44.200	8144.50	0.00	8144.50	2.0111	0.00082	267.707	10	.04	3.04	0.074	25.00	7.00
Q1-10 Flow												
44.200	5212.48	0.00	5212.48	2.0111	0.00082	NA	NA	NA	2.37	0.095	25.00	7.00
Q30-10 Flow												
44.200	11076.52	0.00	11076.52	2.0111	0.00082	NA	NA	NA	3.61	0.063	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
18A	42122	ALLEGHENY 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
44.200	West Hills Area	11.09	50	11.09	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
44.200	West Hills Area	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)		
44.20	West Hills Area	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18A	42122	ALLEGHENY RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
44.200	1.300	25.000	6.999
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
10.000	267.707	0.037	3.043
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.01	0.004	0.01	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.242	0.006	O'Connor	5
Reach Travel Time (days)			
0.074			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.007	2.01	0.01	7.54
0.015	2.01	0.01	7.54
0.022	2.01	0.01	7.54
0.030	2.01	0.01	7.54
0.037	2.01	0.01	7.54
0.045	2.01	0.01	7.54
0.052	2.01	0.01	7.54
0.059	2.01	0.01	7.54
0.067	2.00	0.01	7.54
0.074	2.00	0.01	7.54

C. TMS Results

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **West Hills Area Water Poll Control Auth** NPDES Permit No.: **PA0091782** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **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
1.3	132	6.03						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		364									
	Chloride (PWS)	mg/L		87.8									
	Bromide	mg/L	<	1									
	Sulfate (PWS)	mg/L		49.9									
	Fluoride (PWS)	mg/L	<										
Group 2	Total Aluminum	µg/L		79.8									
	Total Antimony	µg/L	<	0.3									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		36.6									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		220									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L		2.47									
	Total Copper	µg/L		10									
	Free Cyanide	µg/L	<	10									
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		60									
	Total Iron	µg/L		140									
	Total Lead	µg/L		2.05									
	Total Manganese	µg/L		28.4									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L	<	5.59									
	Total Phenols (Phenolics) (PWS)	µg/L		0.6									
	Total Selenium	µg/L	<	0.005									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	µg/L		65.9									
	Total Molybdenum	µg/L		2									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L		0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									
	Chloroform	µg/L		0.579									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	0.1									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	1.07									
	Methylene Chloride	µg/L	<	1.07									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L		0.578									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	0.21									
	2,4-Dichlorophenol	µg/L	<	0.21									
	2,4-Dimethylphenol	µg/L	<	0.21									
	4,6-Dinitro-o-Cresol	µg/L	<	0.5									
	2,4-Dinitrophenol	µg/L	<	1.04									
	2-Nitrophenol	µg/L	<	0.52									
	4-Nitrophenol	µg/L	<	0.52									
	p-Chloro-m-Cresol	µg/L	<	0.1									
	Pentachlorophenol	µg/L	<	0.52									
	Phenol	µg/L	<	0.6									
	2,4,6-Trichlorophenol	µg/L	<	0.21									
Group 5	Acenaphthene	µg/L	<	0.1									
	Acenaphthylene	µg/L	<	0.1									
	Anthracene	µg/L	<	0.1									
	Benzidine	µg/L	<	0.52									
	Benzo(a)Anthracene	µg/L	<	0.1									
	Benzo(a)Pyrene	µg/L	<	0.1									
	3,4-Benzofluoranthene	µg/L	<	0.1									
	Benzo(ghi)Perylene	µg/L	<	0.1									
	Benzo(k)Fluoranthene	µg/L	<	0.1									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.1									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.1									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.1									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.08									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.1									
	Butyl Benzyl Phthalate	µg/L		1.04									
	2-Chloronaphthalene	µg/L		0.1									
	4-Chlorophenyl Phenyl Ether	µg/L		0.1									
	Chrysene	µg/L		0.1									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.1									
	1,2-Dichlorobenzene	µg/L	<	0.1									
	1,3-Dichlorobenzene	µg/L	<	0.1									
	1,4-Dichlorobenzene	µg/L	<	0.1									
	3,3-Dichlorobenzidine	µg/L	<	0.52									
	Diethyl Phthalate	µg/L	<	1.04									
	Dimethyl Phthalate	µg/L	<	1.04									
	Di-n-Butyl Phthalate	µg/L	<	1.04									
	2,4-Dinitrotoluene	µg/L	<	0.21									

	2,6-Dinitrotoluene	µg/L	<	0.21									
	Di-n-Octyl Phthalate	µg/L	<	1.04									
	1,2-Diphenylhydrazine	µg/L	<	0.1									
	Fluoranthene	µg/L	<	0.1									
	Fluorene	µg/L	<	0.1									
	Hexachlorobenzene	µg/L	<	0.1									
	Hexachlorobutadiene	µg/L	<	0.1									
	Hexachlorocyclopentadiene	µg/L	<	0.52									
	Hexachloroethane	µg/L	<	0.1									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.1									
	Isophorone	µg/L	<	0.21									
	Naphthalene	µg/L	<	0.1									
	Nitrobenzene	µg/L	<	0.1									
	n-Nitrosodimethylamine	µg/L	<	0.1									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.1									
	n-Nitrosodiphenylamine	µg/L	<	0.1									
	Phenanthrene	µg/L	<	0.1									
	Pyrene	µg/L	<	0.1									
	1,2,4-Trichlorobenzene	µg/L	<	0.1									
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											
	Acenaphthene												

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

West Hills Area Water Poll Control Auth, NPDES Permit No. PA0091782, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Allegheny 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	042122	44.2	770	8950			Yes
End of Reach 1	042122	43.2	764.72	9500			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	44.2	0.091										100	7		
End of Reach 1	43.2	0.091													

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	44.2														
End of Reach 1	43.2														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

West Hills Area Water Poll Control Auth, NPDES Permit No. PA0091782, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.035 Analysis Hardness (mg/l): 102.09 Analysis pH: 6.81

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	11,505	
Total Antimony	0	0		0	1,100	1,100	16,874	
Total Arsenic	0	0		0	340	340	5,215	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	322,131	
Total Boron	0	0		0	8,100	8,100	124,251	
Total Cadmium	0	0		0	2.055	2.18	33.4	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	579.480	1,834	28,130	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	15.730	16.0	246	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,457	
Total Copper	0	0		0	13.703	14.3	219	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	337	
Dissolved Iron	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	66.049	83.8	1,286	Chem Translator of 0.788 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	25.3	Chem Translator of 0.85 applied
Total Nickel	0	0		0	476.486	477	7,324	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.333	3.92	60.1	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	997	
Total Zinc	0	0		0	119.248	122	1,870	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	46.0	

Acrylonitrile	0	0		0	650	650	9,971	
Benzene	0	0		0	640	640	9,817	
Bromoform	0	0		0	1,800	1,800	27,611	
Carbon Tetrachloride	0	0		0	2,800	2,800	42,951	
Chlorobenzene	0	0		0	1,200	1,200	18,407	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	276,112	
Chloroform	0	0		0	1,900	1,900	29,145	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	230,094	
1,1-Dichloroethylene	0	0		0	7,500	7,500	115,047	
1,2-Dichloropropane	0	0		0	11,000	11,000	168,735	
1,3-Dichloropropylene	0	0		0	310	310	4,755	
Ethylbenzene	0	0		0	2,900	2,900	44,485	
Methyl Bromide	0	0		0	550	550	8,437	
Methyl Chloride	0	0		0	28,000	28,000	429,508	
Methylene Chloride	0	0		0	12,000	12,000	184,075	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	15,340	
Tetrachloroethylene	0	0		0	700	700	10,738	
Toluene	0	0		0	1,700	1,700	26,077	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	104,309	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	46,019	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	52,155	
Trichloroethylene	0	0		0	2,300	2,300	35,281	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	8,590	
2,4-Dichlorophenol	0	0		0	1,700	1,700	26,077	
2,4-Dimethylphenol	0	0		0	660	660	10,124	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	1,227	
2,4-Dinitrophenol	0	0		0	660	660	10,124	
2-Nitrophenol	0	0		0	8,000	8,000	122,717	
4-Nitrophenol	0	0		0	2,300	2,300	35,281	
p-Chloro-m-Cresol	0	0		0	160	160	2,454	
Pentachlorophenol	0	0		0	7.218	7.22	111	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	7,056	
Acenaphthene	0	0		0	83	83.0	1,273	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	4,602	
Benzo(a)Anthracene	0	0		0	0.5	0.5	7.67	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	460,187	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	69,028	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	4,142	
Butyl Benzyl Phthalate	0	0		0	140	140	2,148	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	12,578	
1,3-Dichlorobenzene	0	0		0	350	350	5,369	
1,4-Dichlorobenzene	0	0		0	730	730	11,198	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	61,358	
Dimethyl Phthalate	0	0		0	2,500	2,500	38,349	
Di-n-Butyl Phthalate	0	0		0	110	110	1,687	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	24,543	
2,6-Dinitrotoluene	0	0		0	990	990	15,186	
1,2-Diphenylhydrazine	0	0		0	15	15.0	230	
Fluoranthene	0	0		0	200	200	3,068	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	153	
Hexachlorocyclopentadiene	0	0		0	5	5.0	76.7	
Hexachloroethane	0	0		0	60	60.0	920	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	153,396	
Naphthalene	0	0		0	140	140	2,148	
Nitrobenzene	0	0		0	4,000	4,000	61,358	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	260,773	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	4,602	
Phenanthrene	0	0		0	5	5.0	76.7	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	1,994	

☑ ***CFC*** CCT (min): 720 PMF: 0.245 Analysis Hardness (mg/l): 100.32 Analysis pH: 6.97

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	22,076	
Total Arsenic	0	0		0	148	148	14,851	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	411,425	
Total Boron	0	0		0	1,600	1,600	160,556	
Total Cadmium	0	0		0	0.247	0.27	27.2	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.308	86.4	8,670	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	1,043	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	1,907	

Total Copper	0	0		0	8.980	9.35	939	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	522	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	608,966	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.525	3.19	321	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	90.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.147	52.3	5,249	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	501	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	1,305	
Total Zinc	0	0		0	118.458	120	12,056	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	301	
Acrylonitrile	0	0		0	130	130	13,045	
Benzene	0	0		0	130	130	13,045	
Bromoform	0	0		0	370	370	37,129	
Carbon Tetrachloride	0	0		0	560	560	56,195	
Chlorobenzene	0	0		0	240	240	24,083	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	351,216	
Chloroform	0	0		0	390	390	39,136	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	311,077	
1,1-Dichloroethylene	0	0		0	1,500	1,500	150,521	
1,2-Dichloropropane	0	0		0	2,200	2,200	220,764	
1,3-Dichloropropylene	0	0		0	61	61.0	6,121	
Ethylbenzene	0	0		0	580	580	58,202	
Methyl Bromide	0	0		0	110	110	11,038	
Methyl Chloride	0	0		0	5,500	5,500	551,911	
Methylene Chloride	0	0		0	2,400	2,400	240,834	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	21,073	
Tetrachloroethylene	0	0		0	140	140	14,049	
Toluene	0	0		0	330	330	33,115	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	140,486	
1,1,1-Trichloroethane	0	0		0	610	610	61,212	
1,1,2-Trichloroethane	0	0		0	680	680	68,236	
Trichloroethylene	0	0		0	450	450	45,156	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	11,038	
2,4-Dichlorophenol	0	0		0	340	340	34,118	
2,4-Dimethylphenol	0	0		0	130	130	13,045	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	1,606	
2,4-Dinitrophenol	0	0		0	130	130	13,045	
2-Nitrophenol	0	0		0	1,600	1,600	160,556	

4-Nitrophenol	0	0		0	470	470	47,163	
p-Chloro-m-Cresol	0	0		0	500	500	50,174	
Pentachlorophenol	0	0		0	5.538	5.54	556	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	9,132	
Acenaphthene	0	0		0	17	17.0	1,706	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	5,921	
Benzo(a)Anthracene	0	0		0	0.1	0.1	10.0	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	602,085	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	91,316	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	5,419	
Butyl Benzyl Phthalate	0	0		0	35	35.0	3,512	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	16,056	
1,3-Dichlorobenzene	0	0		0	69	69.0	6,924	
1,4-Dichlorobenzene	0	0		0	150	150	15,052	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	80,278	
Dimethyl Phthalate	0	0		0	500	500	50,174	
Di-n-Butyl Phthalate	0	0		0	21	21.0	2,107	
2,4-Dinitrotoluene	0	0		0	320	320	32,111	
2,6-Dinitrotoluene	0	0		0	200	200	20,069	
1,2-Diphenylhydrazine	0	0		0	3	3.0	301	
Fluoranthene	0	0		0	40	40.0	4,014	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	201	
Hexachlorocyclopentadiene	0	0		0	1	1.0	100	
Hexachloroethane	0	0		0	12	12.0	1,204	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	210,730	
Naphthalene	0	0		0	43	43.0	4,315	
Nitrobenzene	0	0		0	810	810	81,281	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	341,181	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	5,921	
Phenanthrene	0	0		0	1	1.0	100	
Pyrene	0	0		0	N/A	N/A	N/A	

1,2,4-Trichlorobenzene	0	0		0	26	26.0	2,609	

☑ ***THH*** CCT (min): 720 PMF: 0.245 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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	562	
Total Arsenic	0	0		0	10	10.0	1,003	
Total Barium	0	0		0	2,400	2,400	240,834	
Total Boron	0	0		0	3,100	3,100	311,077	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	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	401	
Dissolved Iron	0	0		0	300	300	30,104	
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	100,347	
Total Mercury	0	0		0	0.003	0.003	0.31	
Total Nickel	0	0		0	610	610	61,212	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	24.1	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	301	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	10,035	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	572	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	3,311	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	

1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	6,824	
Methyl Bromide	0	0		0	100	100.0	10,035	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	5,720	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	10,035	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	1,003,475	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	3,010	
2,4-Dichlorophenol	0	0		0	10	10.0	1,003	
2,4-Dimethylphenol	0	0		0	100	100.0	10,035	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	201	
2,4-Dinitrophenol	0	0		0	10	10.0	1,003	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	401,390	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	7,024	
Anthracene	0	0		0	300	300	30,104	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	20,069	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	10.0	
2-Chloronaphthalene	0	0		0	800	800	80,278	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	100,347	
1,3-Dichlorobenzene	0	0		0	7	7.0	702	
1,4-Dichlorobenzene	0	0		0	300	300	30,104	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	60,208	
Dimethyl Phthalate	0	0		0	2,000	2,000	200,695	

Di-n-Butyl Phthalate	0	0		0	20	20.0	2,007	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	2,007	
Fluorene	0	0		0	50	50.0	5,017	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	401	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	3,412	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	1,003	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	2,007	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	7.02	

☑ ***CRL*** CCT (min): 720 PMF: 0.359 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	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	
Dissolved Iron	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 Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	27.9	
Benzene	0	0		0	0.58	0.58	270	
Bromoform	0	0		0	7	7.0	3,257	
Carbon Tetrachloride	0	0		0	0.4	0.4	186	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	372	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	442	
1,2-Dichloroethane	0	0		0	9.9	9.9	4,606	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	419	
1,3-Dichloropropylene	0	0		0	0.27	0.27	126	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	4.7	4.7	2,187	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	93.1	
Tetrachloroethylene	0	0		0	10	10.0	4,653	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	256	
Trichloroethylene	0	0		0	0.6	0.6	279	
Vinyl Chloride	0	0		0	0.02	0.02	9.31	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	14.0	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	698	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	

Benzidine	0	0		0	0.0001	0.0001	0.047	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.47	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.047	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.47	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	4.65	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	14.0	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	149	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	55.8	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.047	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	23.3	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	23.3	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	23.3	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	14.0	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.000045	0.00005	0.021	
Hexachlorobutadiene	0	0		0	0.01	0.01	4.65	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	46.5	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.47	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.33	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	2.33	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	1,535	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	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 Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	7,374	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	206,473	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	79,640	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	21.4	µg/L	Discharge Conc < TQL
Total Chromium (III)	8,670	µg/L	Discharge Conc < TQL
Hexavalent Chromium	157	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	934	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	140	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	216	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	30,104	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	608,966	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	321	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	100,347	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.003	µg/L	Discharge Conc < TQL
Total Nickel	4,694	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	501	µg/L	Discharge Conc < TQL
Total Silver	38.6	µg/L	Discharge Conc < TQL
Total Thallium	24.1	µg/L	Discharge Conc < TQL
Total Zinc	1,199	µg/L	Discharge Conc ≤ 10% WQBEL

Total Molybdenum	N/A	N/A	No WQS
Acrolein	29.5	µg/L	Discharge Conc < TQL
Acrylonitrile	27.9	µg/L	Discharge Conc < TQL
Benzene	270	µg/L	Discharge Conc < TQL
Bromoform	3,257	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	186	µg/L	Discharge Conc < TQL
Chlorobenzene	10,035	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	372	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	176,977	µg/L	Discharge Conc < TQL
Chloroform	572	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	442	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	4,606	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	3,311	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	419	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	126	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	6,824	µg/L	Discharge Conc < TQL
Methyl Bromide	5,408	µg/L	Discharge Conc < TQL
Methyl Chloride	275,297	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	2,187	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	93.1	µg/L	Discharge Conc < TQL
Tetrachloroethylene	4,653	µg/L	Discharge Conc < TQL
Toluene	5,720	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	10,035	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	29,496	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	256	µg/L	Discharge Conc < TQL
Trichloroethylene	279	µg/L	Discharge Conc < TQL
Vinyl Chloride	9.31	µg/L	Discharge Conc < TQL
2-Chlorophenol	3,010	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	1,003	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	6,489	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	201	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	1,003	µg/L	Discharge Conc < TQL
2-Nitrophenol	78,656	µg/L	Discharge Conc < TQL
4-Nitrophenol	22,614	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	1,573	µg/L	Discharge Conc < TQL
Pentachlorophenol	14.0	µg/L	Discharge Conc < TQL
Phenol	401,390	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	698	µg/L	Discharge Conc < TQL
Acenaphthene	816	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	30,104	µg/L	Discharge Conc < TQL
Benzidine	0.047	µg/L	Discharge Conc < TQL

Benzo(a)Anthracene	0.47	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.047	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.47	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	4.65	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	14.0	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	20,069	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	149	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	2,655	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	10.0	µg/L	Discharge Conc ≤ 25% WQBEL
2-Chloronaphthalene	80,278	µg/L	Discharge Conc ≤ 25% WQBEL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	55.8	µg/L	Discharge Conc ≤ 25% WQBEL
Dibenzo(a,h)Anthrancene	0.047	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	8,062	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	702	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	7,177	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	23.3	µg/L	Discharge Conc < TQL
Diethyl Phthalate	39,328	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	24,580	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	1,082	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	23.3	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	23.3	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	14.0	µg/L	Discharge Conc < TQL
Fluoranthene	1,966	µg/L	Discharge Conc < TQL
Fluorene	5,017	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00005	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.01	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	49.2	µg/L	Discharge Conc < TQL
Hexachloroethane	46.5	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.47	µg/L	Discharge Conc < TQL
Isophorone	3,412	µg/L	Discharge Conc < TQL
Naphthalene	1,376	µg/L	Discharge Conc < TQL
Nitrobenzene	1,003	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.33	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	2.33	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	1,535	µg/L	Discharge Conc < TQL
Phenanthrene	49.2	µg/L	Discharge Conc < TQL
Pyrene	2,007	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	7.02	µg/L	Discharge Conc < TQL

D. TRC Calculation Results

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

814.45	= Q stream (cfs)	0.5	= CV Daily
1.3	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	0.035	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	0.245	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 4.541	1.3.2.iii	WLA cfc = 30.868
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.692	5.1d	LTA_cfc = 17.945

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)**

E. WET Testing Results

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: West Hills Area Water Poll Cont

Permit No.: PA00091287

Replicate No.	Test Completion Date 3/26/2020 Control	TIWC	Test Completion Date 5/30/2022 Control	TIWC
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11				
12				
13				
14				
15				
Mean	1.000	1.000	1.000	1.000
Std Dev.	0.000	0.000	0.000	0.000
# Replicates	10	10	10	10
T-Test Result				
Deg. of Freedom				
Critical T Value				
Pass or Fail	PASS		PASS	

Replicate No.	Test Completion Date 5/30/2023 Control	TIWC	Test Completion Date 5/28/2024 Control	TIWC
1	1	1	0	1
2	1	1	1	1
3	1	1	1	1
4	0	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11				
12				
13				
14				
15				
Mean	0.900	1.000	0.900	1.000
Std Dev.	0.316	0.000	0.316	0.000
# Replicates	10	10	10	10
T-Test Result	4.3333		4.3333	
Deg. of Freedom	9		9	
Critical T Value	0.8834		0.8834	
Pass or Fail	PASS		PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: West Hills Area Water Poll Cont

Permit No.: PA00091287

Test Completion Date: 5/28/2020

Replicate No.	Control	TIWC
1	33	32
2	26	34
3	33	4
4	26	32
5	24	30
6	28	34
7	30	30
8	31	33
9	31	33
10	23	32
11		
12		
13		
14		
15		
Mean	28.500	29.400
Std Dev.	3.629	9.033
# Replicates	10	10

T-Test Result	2.6899
Deg. of Freedom	12
Critical T Value	0.8726
Pass or Fail	PASS

Test Completion Date: 5/30/2022

Replicate No.	Control	TIWC
1	26	26
2	26	26
3	27	28
4	27	20
5	20	29
6	19	23
7	25	26
8	26	32
9	26	7
10	28	35
11		
12		
13		
14		
15		
Mean	25.000	25.200
Std Dev.	3.018	7.671
# Replicates	10	10

T-Test Result	2.5502
Deg. of Freedom	12
Critical T Value	0.8726
Pass or Fail	PASS

Test Completion Date: 5/30/2023

Replicate No.	Control	TIWC
1	21	20
2	29	23
3	17	17
4	0	26
5	18	18
6	32	33
7	22	25
8	9	29
9	22	20
10	25	23
11		
12		
13		
14		
15		
Mean	19.500	23.400
Std Dev.	9.372	5.016
# Replicates	10	10

T-Test Result	3.2136
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Test Completion Date: 5/28/2024

Replicate No.	Control	TIWC
1	4	26
2	24	29
3	11	33
4	22	23
5	24	23
6	24	26
7	24	27
8	20	22
9	20	26
10	24	24
11		
12		
13		
14		
15		
Mean	19.700	25.900
Std Dev.	6.832	3.281
# Replicates	10	10

T-Test Result	5.7818
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: West Hills Area Water Poll Cont

Permit No.: PA00091287

Test Completion Date: 5/26/2020

Replicate No.	Control	TIWC
1	0.8	1
2	0.9	1
3	0.9	0.9
4	0.9	0.9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.875	0.950
Std Dev.	0.050	0.058
# Replicates	4	4

T-Test Result	14.7686
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 5/31/2022

Replicate No.	Control	TIWC
1	1	1
2	1	0.8
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	0.950
Std Dev.	0.000	0.100
# Replicates	4	4

T-Test Result	8.1944
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Test Completion Date: 5/30/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	0.9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	0.975
Std Dev.	0.000	0.050
# Replicates	4	4

T-Test Result	17.8623
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Test Completion Date: 5/28/2024

Replicate No.	Control	TIWC
1	0.9	1
2	0.9	1
3	1	0.9
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.950	0.975
Std Dev.	0.058	0.050
# Replicates	4	4

T-Test Result	14.6365
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: West Hills Area Water Poll Cont

Permit No.: PA0091287

Test Completion Date: 5/26/2020

Replicate No.	Control	TIWC
1	0.296	0.418
2	0.363	0.373
3	0.298	0.4056
4	0.319	0.416
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.319	0.403
Std Dev.	0.031	0.021
# Replicates	4	4

T-Test Result	10.4796
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 5/31/2022

Replicate No.	Control	TIWC
1	0.353	0.38
2	0.357	0.305
3	0.288	0.352
4	0.356	0.371
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.339	0.352
Std Dev.	0.034	0.033
# Replicates	4	4

T-Test Result	4.6817
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 5/30/2023

Replicate No.	Control	TIWC
1	0.343	0.276
2	0.343	0.326
3	0.367	0.299
4	0.334	0.297
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.347	0.300
Std Dev.	0.014	0.021
# Replicates	4	4

T-Test Result	3.4165
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 5/28/2024

Replicate No.	Control	TIWC
1	0.321	0.276
2	0.272	0.32
3	0.287	0.303
4	0.379	0.386
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.315	0.321
Std Dev.	0.047	0.047
# Replicates	4	4

T-Test Result	2.8965
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS