Pennsylvania Department of Environmental Protection

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0020460**
Facility Type	**Municipal**	APS ID	**1122137**
Major / Minor	**Major**	Authorization ID	**1500337**

Applicant and Facility Information

Applicant Name	**Pennridge Wastewater Treatment Authority**	Facility Name	**Pennridge WWTP**
Applicant Address	180 Maple Avenue P O Box 31 Sellersville, PA 18960-0031	Facility Address	180 Maple Avenue P O Box 31 Sellersville, PA 18960-0031
Applicant Contact	Kevin Franks	Facility Contact	Kevin Franks
Applicant Phone	(215) 257-6355	Facility Phone	(215) 257-6355
Client ID	74734	Site ID	449655
Ch 94 Load Status	Not Overloaded	Municipality	West Rockhill Township
Connection Status	No Limitations	County	Bucks
Date Application Received	September 3, 2024	EPA Waived?	No
Date Application Accepted		If No, Reason	, DEP Discretion

Purpose of Application .

Summary of Review

Renewal application was received for the Pennridge WWTP NPDES permit to discharge an annual average flow of 4.325-MGD and a maximum monthly flow of 5.41-MGD of treated sewage to the East Branch Perkiomen Creek.

The treatment plant consists of a aerated grit removal chamber, 3 influent pumps, a Chemical addition unit, 2 flocculation tanks, 2 primary sedimentation tanks, 2 trickling filters, 3 aeration tanks, 3 secondary clarifiers and a Ultra-Violet disinfection unit. Sludge is gravity thickened, aerobically digested, dewatered by belt filter press, lime stabilized, and disposed off by private contractor by either land application or landfilling at Conestoga Landfill.

The treatment plant serves East Rockhill Township, Hilton Township, Perkasie Borough, Sellersville Borough, Silverdale Borough, and Telford Borough.

Changes to the permit:

Effluent limits for Free Cyanide and Zinc are included in this permit renewal.
Per analysis results from WQM 7.0, limits for CBOD5 and NH3-N were adjusted to 12 mg/L and 2.5 mg/L.
Please refer to the attached documents for additional details.
Per analysis result from TMS. Additional monitoring requirements for Total Boron, Dissolved Iron, Total Iron, and chloroform are being added to this renewal.
Monitoring for Total Nitrogen is being added per department requirements.
PFOA, PFOS, HFPO-DA and PFBS: a quarterly monitoring is being added per department requirements.

Approve	Deny	Signatures	Date
X		*Charley Yang* Charley Yang / Environmental Engineering Specialist	June 12, 2025
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	06/12/2025

Summary of Review

WET:

Due to the consecutive failed WET test for Ceri daphnia, Phase I TRE was triggered.
Per the provided TRE Phase 1 report. Initially, it seemed like Ammonia was causing the failure and Ceriodaphnia seemed to be under control with lowered Ammonia concentration. However, the latest (4th) test has failed, even with the relatively low concentration of Ammonia.
Phase II Toxicity Reduction Evaluation should be implemented.

The effluent limits developed and included in an NPDES permit may either be technology based, water quality based, applicable effluent standards from PA Code Title 25 regulations, applicable DRBC Water Quality Regulations, relevant planning aspects for this discharge, or a combination of any or all the above.

The NPDES permit amendment was issued on 12/21/2022 reflecting the change of organic loading from 6,670 lbs. BOD5/day to 9,018 lbs. BOD5/day. The amendment was a paper rerate without the need of any construction within the facility. Details of the organic rerate can be found in the Internal Review and Recommendation document that was prepared for WQM permit amendment. No changes were made to the permit other than the paper rerate.

Stormwater Monitoring

Outfall 002 will continue to have stormwater monitoring requirements as the existing permit.

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

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	4.325
Latitude	40Âº 21' 14.52"	Longitude	-75Âº 18' 47.85"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	East Branch Perkiomen Creek (TSF, MF)	Stream Code	01168
NHD Com ID	25999662	RMI	16.0300
Drainage Area	29.5	Yield (cfs/mi^2)	0.017
Q_{7-10} Flow (cfs)	10.5	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-E	Chapter 93 Class.	TSF, MF
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			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	40Âº 21' 14.56"	Longitude	-75Âº 18' 47.67"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	East Branch Perkiomen Creek (TSF, MF)	Stream Code	01168
NHD Com ID	25999662	RMI	16.0400
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-E	Chapter 93 Class.	TSF, MF
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			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Pennridge WWTP

WQM Permit No.	Issuance Date
0900421	12/19/2022

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia and Phosphorus	Trickling Filter with Settling	Ultraviolet	4.325

Hydraulic Capacity (MGD)	Organic Capacity (lbs./day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
5.41	9018	Not Overloaded		

Changes Since Last Permit Issuance: None

Other Comments: WQM amendment was issued on 12/19/2022

Compliance History	
Summary of DMRs:	
Summary of Inspections:	Overall, the site seems to be in good condition. There were Fecal I-Max exceedances. The facility is planning to install a new Wedco UV disinfection system. The facility may utilize Chlorine gas for disinfection since the UV unit is aging and in need of replacement. TRC is monitored in house when used onsite and the monitoring results submitted as a DMR attachment as per Part C,1,D of the NPDES Permit. As of May 2025, the operator is waiting for the shipment of the new system, and it is expected to be installed later this year.

Other Comments: **None**

Compliance History

DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	2.801	2.98	1.908	2.826	1.962	1.601	2.104	2.101	2.101	2.102	2.431	3.297
Flow (MGD) Daily Maximum	4.784	9.763	3.601	6.163	3.322	2.173	2.311	2.209	2.282	2.204	4.595	12.705
pH (S.U.) Instantaneous Minimum	6.6	6.6	6.6	6.5	6.7	6.7	6.6	6.8	6.7	6.8	6.8	6.8
pH (S.U.) Instantaneous Maximum	7.2	7.65	7.0	7.0	7.1	7.1	7.0	7.1	7.3	7.5	7.1	7.1
DO (mg/L) Instantaneous Minimum	8.4	8.1	8.4	7.1	6.8	6.6	6.4	6.3	6.2	7.0	7.4	7.7
CBOD5 (lbs/day) Average Monthly	142	< 64	82	107	< 42	< 42	< 66	< 61	< 60	105	< 65	< 109
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	3401	3074	3193	3818	3061	2807	3365	3705	3661	3315	3382	6750
CBOD5 (lbs/day) Weekly Average	158	< 108	114	153	< 53	< 66	78	93	< 81.0	148	115	313
CBOD5 (mg/L) Average Monthly	5.0	< 3.0	5.0	4.0	< 2.0	< 3.0	< 4.0	< 3.0	< 3.0	6.0	< 3.0	< 3.0
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	142.6	153.4	199.1	166.5	188	205	190	212	210	192	163.2	379.2
CBOD5 (mg/L) Weekly Average	7.0	< 3.0	8.0	5.0	4.0	< 4.0	4.0	5.0	< 5.0	8.0	4.0	5.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	3866	3460	3445	4176	4262	3285	4222	4655	3941	3544	3830	3597
BOD5 (mg/L) Raw Sewage Influent Average Monthly	158.6	172.6	216	182	243	235	239	267	226	206	183	179.6
TSS (lbs/day) Average Monthly	< 93	< 33.0	< 52	< 72	< 40	< 41	69	< 31	40	< 59	< 52	< 118

TSS (lbs/day) Raw Sewage Influent Average Monthly	3475	1858	2331	3463	2708	2458	3176	3237	2894	2292	1992	3072
TSS (lbs/day) Weekly Average	55	< 46.0	79	170	74	61	89	< 61	53	88	91	458
TSS (mg/L) Average Monthly	< 3.0	< 2.0	< 3.0	< 2.0	< 2.0	< 3.0	4.0	< 2.0	2.0	< 3.0	< 2.0	< 2.0
TSS (mg/L) Raw Sewage Influent Average Monthly	132	94	149	155	165	175	180	185	166	133	97.0	118
TSS (mg/L) Weekly Average	3.0	< 2.0	5.0	4.0	5.0	4.0	5.0	< 4.0	3.0	5.0	4.0	6.0
Total Dissolved Solids (mg/L) Average Quarterly	1088			967			948			808		
Fecal Coliform (No./100 ml) Geometric Mean	182	72	277	< 22	< 6.0	< 6.0	< 4.0	< 3.0	< 5.0	< 11.0	< 8.0	< 25
Fecal Coliform (No./100 ml) Instantaneous Maximum	2000	260	20000	143	30	60	118	15	4100	955	220	1203
UV Transmittance (%) Daily Minimum	75	75	75	75	75	75	75	75	75	75	75	75.0
Total Nitrogen (lbs/day) Average Monthly	231	276	327	< 321	< 304	< 482	< 541	< 438	< 293	300	343	311
Total Nitrogen (mg/L) Average Monthly	15.25	16.95	18.01	< 23.8	< 24	< 27.5	< 30.1	< 25.3	< 17	18.04	20.57	12.74
Ammonia (lbs/day) Average Monthly	100	100	42	58	64	40	15	27	26	39	97	82
Ammonia (mg/L) Average Monthly	3.5	4.6	2.7	1.8	3.9	3.1	0.9	1.6	1.5	2.2	5.0	4.2
Total Phosphorus (lbs/day) Average Monthly	33	11.0	13	20	25	14	23	13	20	17	18	14
Total Phosphorus (mg/L) Average Monthly	1.2	0.6	0.80	0.8	1.6	1.0	1.3	0.8	1.2	1.0	0.9	0.6
Total Copper (mg/L) Average Quarterly	0.010			0.005			0.012			0.010		
Free Cyanide (mg/L) Average Quarterly	0.004			< 0.001			0.003			0.001		

Total Zinc (mg/L) Average Quarterly	0.058			0.034			0.055			0.068		
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum	5.00			1.00			1.00			1.00		
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum	5.00			1.00			1.40			1.00		
Chronic WET - Pimephales Survival (TUc) Daily Maximum	1.00			1.00			1.00			1.00		
Chronic WET - Pimephales Growth (TUc) Daily Maximum	1.00			1.00			1.00			1.00		

DMR Data for Outfall 002 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
pH (S.U.) Daily Maximum				GG								
CBOD5 (mg/L) Daily Maximum				GG								
COD (mg/L) Daily Maximum				GG								
TSS (mg/L) Daily Maximum				GG								
Oil and Grease (mg/L) Daily Maximum				GG								
Fecal Coliform (No./100 ml) Daily Maximum				GG								
TKN (mg/L) Daily Maximum				GG								
Total Phosphorus (mg/L) Daily Maximum				GG								
Dissolved Iron (mg/L) Daily Maximum				GG								

Compliance History

Effluent Violations for Outfall 001, from: May 1, 2024 To: March 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	01/31/25	Geo Mean	277	No./100 ml	200	No./100 ml
Fecal Coliform	01/31/25	Geo Mean	277	No./100 ml	200	No./100 ml
Fecal Coliform	07/31/24	IMAX	4100	No./100 ml	1000	No./100 ml
Fecal Coliform	03/31/25	IMAX	2000	No./100 ml	1000	No./100 ml
Fecal Coliform	01/31/25	IMAX	20000	No./100 ml	1000	No./100 ml
Fecal Coliform	01/31/25	IMAX	20000	No./100 ml	1000	No./100 ml
Ammonia	05/31/24	Avg Mo	5.0	mg/L	3.0	mg/L
Ammonia	10/31/24	Avg Mo	3.1	mg/L	3.0	mg/L
Chronic WET - Ceriodaphnia Survival	03/31/25	Daily Max	5.00	TUc	2.56	TUc
Chronic WET - Ceriodaphnia Survival	03/31/25	Daily Max	5.00	TUc	2.56	TUc
Chronic WET - Ceriodaphnia Survival	03/31/25	Daily Max	5.00	TUc	2.56	TUc
Chronic WET - Ceriodaphnia Survival	03/31/25	Daily Max	5.00	TUc	2.56	TUc
Chronic WET - Ceriodaphnia Reproduction	03/31/25	Daily Max	5.00	TUc	2.56	TUc
Chronic WET - Ceriodaphnia Reproduction	03/31/25	Daily Max	5.00	TUc	2.56	TUc
Chronic WET - Ceriodaphnia Reproduction	03/31/25	Daily Max	5.00	TUc	2.56	TUc
Chronic WET - Ceriodaphnia Reproduction	03/31/25	Daily Max	5.00	TUc	2.56	TUc

Summary of Inspections:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 4.325
Latitude 40º 21' 15.00" **Longitude** -75º 18' 48.00"
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

PARAMETER	EFFLUENT LIMITS (AV. MO in Mg/l)	BASIS
CBOD5 (5/1 to 10/31)	12	WQM 7.0 Model
CBOD5 (11/1 to 4/30)	25	WQM 7.0 Model
Ammonia-Nitrogen (5/1 to 10/31)	2.5	WQM 7.0 Model
Ammonia-Nitrogen (11/1 to 4/30)	9.0	WQM 7.0 Model
Total Suspended Solids	20	25 Pa Code 92a.47
Dissolved Oxygen	5.0	WQM 7.0 Model
pH (S.U.)	6.0 to 9.0 SU	25 Pa Code 92a.47, 95.2
Fecal Coliform (#/100 ml)	200 (Geo Mean)	25 Pa Code 92a.47
Total Dissolved Solids	Report	25 Pa Code 95.10, and DRBC
UV Light Transmittance (%)	Report	25 Pa Code 92a.47-48
Total Phosphorus (5/1 to 10/31)	1.5	25 Pa Code 92a.61
Total Phosphorus (11/1 to 4/30)	2.0	25 Pa Code 92a.61
Total Hardness (as CaCO3)	Report	BPJ
Cyanide Free	0.006	TMS
Zinc	0.33	TMS
Chronic Toxicity (TUc)	2.56	1/TIWC
Total Nitrogen	Report	25 Pa Code 92a.61

Conventional Pollutants

The existing effluent limits for CBOD5 and Ammonia-Nitrogen are adjusted as they were verified using DEP's WQM 7.0. The existing limits and design flows were input into the model and confirm that the limits are protective of dissolved oxygen, but limits for CBOD5 and ammonia-nitrogen are being adjusted.

The Q7-10 flow used in the WQM model was 10.0-cfs and the discharge flow was 4.325-MGD. The Q7-10 flow represents the minimum flow required to be augmented from the Bradshaw Reservoir / Point Pleasant Pump Station diversion under the docket issued to EXELON by the Delaware River Basin Commission (DRBC). Should the augmented

stream flow cease, the Q7-10 at Pennridge WWTP reverts to 0.5-cfs and the modeled effluent limits are no longer valid. In such a situation, the permit would need to be amended to reflect limits based on 0.5-cfs.

Toxic Pollutants

Effluent limits for Zinc and Free Cyanide were calculated using TMS Model with same stream data used in the WQM 7.0 Model. TMS was run with the sampling results from eDMR per SOP.

The existing has quarterly monitoring requirement for Copper, Zinc, and Free Cyanide. Copper will continue to have quarterly monitoring requirement. Zinc and Free Cyanide will have monitoring limits based on TMS modeling.

Additional monitoring requirements for Total Boron, Dissolved Iron, Total Iron, and chloroform are being added to this renewal.

Phosphorus, total

The permit renewal will continue with total phosphorus limit of 1.5 mg/l (May – October) and 2.0 mg/l (November – April). Note that prior to the Point Pleasant Pump Station water diversion, the total phosphorus limit was 0.5 mg/l. Therefore, the total phosphorus limit is contingent on the continued augmentation to East Branch Perkiomen Creek of a minimum stream flow of 10-cfs. Otherwise, the Q7-10 design flow is 0.5-cfs, and the total phosphorus limit reverts to 0.5 mg/l.

Total Nitrogen

PADEP's SOP BCW-PMT-033 recommends monitoring for Total Nitrogen for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Monitoring for Total Nitrogen is being added.

PFOA, PFOS, HFPO-DA and PFBS

Per SOP BCW-PMT-03 (revised February 5, 2024), a quarterly monitoring will be added with the following footnote:

"The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs."

Whole Effluent Toxicity (WET)

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: **Annual**

The dilution series used for the tests was: 100%, 70%, 39%, 20%, and 10%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 39%.

Summary of Four Most Recent Test Results.

Whole Effluent Toxicity (WET) Testing Summary

Sample Date	Sample Type	WET Test Results (%) Pimephales promelas (NOEC) Survival	Pimephales promelas (NOEC) Growth	Ceriodaphnia dubia (NOEC) Survival	Ceriodaphnia dubia (NOEC) Repro.
16-May-17	Annual	100	100	Stopped: Excess Control Mortality	
19-Jun-17	Re-Test	Not Tested	Not Tested	39	< 10
8-Aug-17	Re-Test	Not Tested	Not Tested	100	< 39
13-Mar-18	Quarterly	100	100	39	20
1-May-18	Quarterly	100	100	100	70
31-Jul-18	Quarterly	100	100	100	70
30-Oct-18	Quarterly	100	100	20	20
5-Feb-19	Quarterly	100	100	100	70
7-May-19	Quarterly	100	100	100	100
23-Jul-19	Quarterly	100	100	100	100
13-Nov-19	Quarterly	100	100	100	100
13-Nov-20	Annual	100	100	100	39
19-Oct-21	Annual	100	100	100	100
20-Sep-22	Annual	100	100	100	39 *
22-Nov-22	Re-Test	Not Tested	Not Tested	100	100
27-Jul-23	Annual	100	100	100	20
14-Sep-23	Re-Test	Not Tested	Not Tested	100	10
10-Nov-23	Quarterly	100	100	100	70
1-Mar-24	Quarterly	100	100	39	20
17-Jun-24	Quarterly	100	100	100	100
20-Sep-24	Quarterly	100	100	100	70
6-Dec-24	Quarterly	100	100	100	100
14-Mar-25	Quarterly	100	100	20	20
NPDES Limits		**100**	**39**	**100**	**39**

Notes:
1. NPDES permit limits for WET are based on Chronic Toxic Units (TUc) = 2.56 Target Instream Wastestream Concentration (in %) = 100%/2.56 (TUc) = 39%
2. Values in RED indicate WET test failures.
   ***** - This value was considered a failure based on the underlying statistical data for this test

Results since last renewal:

NOEC/LC50 Data Analysis

Test Date	*Ceriodaphnia* Results (% Effluent)			*Pimephales* Results (% Effluent)			Pass? *
	NOEC Survival	NOEC Reproduction	LC50	NOEC Survival	NOEC Growth	LC50	
10/19/2021	100%	100%		100%	100%		Pass
11/22/2022	100%	100%		100%	100%		Pass
7/27/2023	100%	20%		100%	100%		Fail
1/19/2024	100%	70%		100%	100%		Pass
4/11/2024	39%	20%		100%	100%		Fail
6/17/2024	100%	100%		100%	100%		Pass

***** *A "passing" result is that which is greater than or equal to the TIWC value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Comments:

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

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1. **Determine IWC – Acute (IWCa)**:

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

   [(4.325 MGD x 1.547) / ((10.5 cfs x 1) + (4.325 MGD x 1.547))] x 100 = **39%**

   Is IWCa < 1%? ☐ **YES** ☒ **NO**

   Type of Test for Permit Renewal: Chronic

2. **Determine Target IWCc (If Chronic Tests Required)**

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

   [(4.325 MGD x 1.547) / ((10.5 cfs x 1) + (4.325 MGD x 1.547))] x 100 = **39%**

3. **Determine Dilution Series**

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

   Dilution Series = 100%, 70%, 39%, 20%, and 10%.

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).

Per WET spreadsheet.

Permit Recommendations		
Test Type	**Chronic**	
TIWC	**69**	% Effluent
Dilution Series	**17, 35, 69, 85, 100**	% Effluent
Permit Limit	**1.4**	TUc
Permit Limit Species	**Ceriodaphnia dubia**	

Anti-Backsliding

Anti-backsliding prohibition is justified in sections where an exception is justified for the affected pollutant(s). For remaining pollutants, this prohibition isn't applicable since the proposed limits are at least as stringent as were in current permit.

The permittee did phase I TIE/TRE, report is attached

WET-Ph1report.pdf

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia Nov 1 - Apr 30	325	XXX	XXX	9.0	XXX	18	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	108	XXX	XXX	3.0	XXX	6	2/week	24-Hr Composite
Free Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location:

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia Nov 1 - Apr 30	325	XXX	XXX	7.5	XXX	15	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	90	XXX	XXX	2.5	XXX	5	2/week	24-Hr Composite
Free Cyanide	XXX	XXX	XXX	0.006	0.010	0.014	1/month	24-Hr Composite
Total Zinc	XXX	XXX	XXX	0.33	0.56	0.82	1/month	24-Hr Composite

Compliance Sampling Location:

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 001, Effective Period: Permit Effective Date through 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	Daily Maximum	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	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	900	1440	XXX	25 Avg Mo	40	50	2/week	24-Hr Composite
CBOD5 Raw Sewage Influent	Report	XXX	XXX	12.0 Avg Mo	18.0	24	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	433	649	XXX	Report Avg Mo	XXX	XXX	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	24-Hr Composite
TSS	721	1082	XXX	20 Avg Mo	30	40	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000*	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
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

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	Daily Maximum	Weekly Average	Instant. Maximum		
Total Nitrogen	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	Calculation
Total Phosphorus Nov 1 - Apr 30	72	XXX	XXX	2.0 Avg Mo	XXX	4	2/week	24-Hr Composite
Total Phosphorus May 1 - Oct 31	54	XXX	XXX	1.5 Avg Mo	XXX	3	2/week	24-Hr Composite
Total Boron	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Copper	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Chloroform	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
PFOA (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
PFOS (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
PFBS (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
HFPO-DA (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	1.4	XXX	XXX	1/quarter	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	1.4	XXX	XXX	1/quarter	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite

*DRBC 10% rule applied
Compliance Sampling Location: Outfall 001

Other Comments: None

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 002, 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	Daily Maximum	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
COD	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
TSS	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
TKN	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	Upon Request	Grab

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	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:
☐	Other:

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03E	1168	EAST BRANCH PERKIOMEN CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
15.600	Pennridge WWT	11.31	6	11.31	6	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
15.600	Pennridge WWT	1.51	2.41	1.51	2.41	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)		
15.60	Pennridge WWTP	11.82	11.82	2.41	2.41	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
03E	1168	EAST BRANCH PERKIOMEN CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
15.600	4.325	23.474	7.067
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
40.986	0.730	56.116	0.322
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
8.82	1.060	1.67	0.915
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.990	5.070	Tsivoglou	5
Reach Travel Time (days)			
0.589			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.059	8.20	1.58	5.51
0.118	7.62	1.50	5.23
0.177	7.08	1.42	5.10
0.236	6.58	1.35	5.06
0.294	6.12	1.28	5.09
0.353	5.68	1.21	5.17
0.412	5.28	1.15	5.29
0.471	4.91	1.09	5.42
0.530	4.56	1.03	5.57
0.589	4.24	0.98	5.72

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03E	1168	EAST BRANCH PERKIOMEN CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
15.600	Pennridge WWTP	PA0020460	4.325	CBOD5	11.82		
				NH3-N	2.41	4.82	
				Dissolved Oxygen			5

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
03E	1168	EAST BRANCH PERKIOMEN CREEK	**15.600**	290.00	29.40	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	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Pennridge WWTP	PA0020460	4.3250	0.0000	0.0000	0.000	25.00	7.10

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	15.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	3.00	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
03E	1168	EAST BRANCH PERKIOMEN CREEK	**15.600**	290.00	29.40	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	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Pennridge WWTP	PA0020460	4.3250	0.0000	0.0000	0.000	25.00	7.10

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	15.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	3.00	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
03E	1168	EAST BRANCH PERKIOMEN CREEK	**15.600**	290.00	29.40	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	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Pennridge WWTP	PA0020460	4.3250	0.0000	0.0000	0.000	25.00	7.10

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	15.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	3.00	0.00	0.00	0.70

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		

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Pennridge Wastewater Treatment Authority** NPDES Permit No.: **PA0900421** 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
4.325	253	7.1						

					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	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		9									
	Total Antimony	µg/L		0.7									
	Total Arsenic	µg/L		1									
	Total Barium	µg/L		60									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		400									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		2.1									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.6									
	Total Copper	µg/L		13.9			0.27						
	Free Cyanide	µg/L		8.67			0.86						
	Total Cyanide	µg/L		17									
	Dissolved Iron	µg/L		60									
	Total Iron	µg/L		320									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		65									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		18.1									
	Total Phenols (Phenolics) (PWS)	µg/L		58									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.3									
	Total Zinc	µg/L		184.43			0.71						
	Total Molybdenum	µg/L		5									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									
	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									

Group 3	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L	<	2.2									
	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	<	5									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	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	<	5									
	2,4-Dichlorophenol	µg/L	<	5									
	2,4-Dimethylphenol	µg/L	<	5									
	4,6-Dinitro-o-Cresol	µg/L	<	5									
	2,4-Dinitrophenol	µg/L	<	10									
	2-Nitrophenol	µg/L	<	10									
	4-Nitrophenol	µg/L	<	5									
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<	10									
	Phenol	µg/L	<	5									
	2,4,6-Trichlorophenol	µg/L	<	5									
Group 5	Acenaphthene	µg/L	<	2.5									
	Acenaphthylene	µg/L	<	2.5									
	Anthracene	µg/L	<	2.5									
	Benzidine	µg/L	<	50									
	Benzo(a)Anthracene	µg/L	<	2.5									
	Benzo(a)Pyrene	µg/L	<	2.5									
	3,4-Benzofluoranthene	µg/L	<	2.5									
	Benzo(ghi)Perylene	µg/L	<	2.5									
	Benzo(k)Fluoranthene	µg/L	<	2.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	5									
	Bis(2-Chloroethyl)Ether	µg/L	<	5									
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5									
	4-Bromophenyl Phenyl Ether	µg/L	<	5									
	Butyl Benzyl Phthalate	µg/L	<	5									
	2-Chloronaphthalene	µg/L	<	5									
	4-Chlorophenyl Phenyl Ether	µg/L	<	5									
	Chrysene	µg/L	<	2.5									
	Dibenzo(a,h)Anthrancene	µg/L	<	2.5									
	1,2-Dichlorobenzene	µg/L	<	0.5									
	1,3-Dichlorobenzene	µg/L	<	0.5									
	1,4-Dichlorobenzene	µg/L	<	0.5									
	3,3-Dichlorobenzidine	µg/L	<	5									
	Diethyl Phthalate	µg/L	<	5									
	Dimethyl Phthalate	µg/L	<	2.5									
	Di-n-Butyl Phthalate	µg/L	<	5									
	2,4-Dinitrotoluene	µg/L	<	5									
	2,6-Dinitrotoluene	µg/L	<	5									
	Di-n-Octyl Phthalate	µg/L	<	5									
	1,2-Diphenylhydrazine	µg/L	<	5									
	Fluoranthene	µg/L	<	2.5									

	Fluorene	µg/L	<	2.5									
	Hexachlorobenzene	µg/L	<	5									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	5									
	Hexachloroethane	µg/L	<	2.5									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5									
	Isophorone	µg/L	<	5									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	5									
	n-Nitrosodimethylamine	µg/L	<	5									
	n-Nitrosodi-n-Propylamine	µg/L	<	5									
	n-Nitrosodiphenylamine	µg/L	<	5									
	Phenanthrene	µg/L	<	2.5									
	Pyrene	µg/L	<	2.5									
	1,2,4-Trichlorobenzene	µg/L	<	0.5									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Pennridge Wastewater Treatment Authority, NPDES Permit No. PA0900421, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **east branch perkionmen creek** 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	001168	15.6	290	29.4			Yes
End of Reach 1	001168	12.5	265	38.5			Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	15.6	0.1										355	7		
End of Reach 1	12.5	0.1													

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	15.6														
End of Reach 1	12.5														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Pennridge Wastewater Treatment Authority, NPDES Permit No. PA0900421, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 8.796 PMF: 1 Analysis Hardness (mg/l): 284.1 Analysis pH: 7.07

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	1,080	
Total Antimony	0	0		0	1,100	1,100	1,583	
Total Arsenic	0	0		0	340	340	489	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	30,228	
Total Boron	0	0		0	8,100	8,100	11,659	
Total Cadmium	0	0		0	5.552	6.17	8.88	Chem Translator of 0.9 applied
Total Chromium (III)	0	0		0	1340.092	4,241	6,104	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	23.5	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	137	
Total Copper	0	0		0	35.949	37.4	53.9	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	31.7	
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	197.089	309	444	Chem Translator of 0.639 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	2.37	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1132.792	1,135	1,634	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	19.386	22.8	32.8	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	93.6	
Total Zinc	0	0		0	283.877	290	418	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	4.32	
Acrylonitrile	0	0		0	650	650	936	
Benzene	0	0		0	640	640	921	
Bromoform	0	0		0	1,800	1,800	2,591	

Carbon Tetrachloride	0	0		0	2,800	2,800	4,030	
Chlorobenzene	0	0		0	1,200	1,200	1,727	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	25,909	
Chloroform	0	0		0	1,900	1,900	2,735	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	21,591	
1,1-Dichloroethylene	0	0		0	7,500	7,500	10,796	
1,2-Dichloropropane	0	0		0	11,000	11,000	15,834	
1,3-Dichloropropylene	0	0		0	310	310	446	
Ethylbenzene	0	0		0	2,900	2,900	4,174	
Methyl Bromide	0	0		0	550	550	792	
Methyl Chloride	0	0		0	28,000	28,000	40,304	
Methylene Chloride	0	0		0	12,000	12,000	17,273	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,439	
Tetrachloroethylene	0	0		0	700	700	1,008	
Toluene	0	0		0	1,700	1,700	2,447	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	9,788	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	4,318	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	4,894	
Trichloroethylene	0	0		0	2,300	2,300	3,311	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	806	
2,4-Dichlorophenol	0	0		0	1,700	1,700	2,447	
2,4-Dimethylphenol	0	0		0	660	660	950	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	115	
2,4-Dinitrophenol	0	0		0	660	660	950	
2-Nitrophenol	0	0		0	8,000	8,000	11,515	
4-Nitrophenol	0	0		0	2,300	2,300	3,311	
Pentachlorophenol	0	0		0	9.331	9.33	13.4	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	662	
Acenaphthene	0	0		0	83	83.0	119	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	432	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.72	
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	43,182	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	6,477	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	389	
Butyl Benzyl Phthalate	0	0		0	140	140	202	
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	1,180	

1,3-Dichlorobenzene	0	0		0	350	350	504	
1,4-Dichlorobenzene	0	0		0	730	730	1,051	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	5,758	
Dimethyl Phthalate	0	0		0	2,500	2,500	3,599	
Di-n-Butyl Phthalate	0	0		0	110	110	158	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	2,303	
2,6-Dinitrotoluene	0	0		0	990	990	1,425	
1,2-Diphenylhydrazine	0	0		0	15	15.0	21.6	
Fluoranthene	0	0		0	200	200	288	
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	14.4	
Hexachlorocyclopentadiene	0	0		0	5	5.0	7.2	
Hexachloroethane	0	0		0	60	60.0	86.4	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	14,394	
Naphthalene	0	0		0	140	140	202	
Nitrobenzene	0	0		0	4,000	4,000	5,758	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	24,470	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	432	
Phenanthrene	0	0		0	5	5.0	7.2	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	187	

☑ ***CFC*** CCT (min): 8.796 PMF: 1 Analysis Hardness (mg/l): 284.1 Analysis pH: 7.07

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	317	
Total Arsenic	0	0		0	150	150	216	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	5,902	
Total Boron	0	0		0	1,600	1,600	2,303	
Total Cadmium	0	0		0	0.508	0.59	0.84	Chem Translator of 0.865 applied
Total Chromium (III)	0	0		0	174.318	203	292	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	15.0	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	27.3	
Total Copper	0	0		0	21.860	22.8	32.8	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	7.48	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	2,159	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	7.680	12.0	17.3	Chem Translator of 0.639 applied

Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.3	Chem Translator of 0.85 applied
Total Nickel	0	0		0	125.818	126	182	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	7.18	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	18.7	
Total Zinc	0	0		0	286.199	290	418	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	4.32	
Acrylonitrile	0	0		0	130	130	187	
Benzene	0	0		0	130	130	187	
Bromoform	0	0		0	370	370	533	
Carbon Tetrachloride	0	0		0	560	560	806	
Chlorobenzene	0	0		0	240	240	345	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	5,038	
Chloroform	0	0		0	390	390	561	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	4,462	
1,1-Dichloroethylene	0	0		0	1,500	1,500	2,159	
1,2-Dichloropropane	0	0		0	2,200	2,200	3,167	
1,3-Dichloropropylene	0	0		0	61	61.0	87.8	
Ethylbenzene	0	0		0	580	580	835	
Methyl Bromide	0	0		0	110	110	158	
Methyl Chloride	0	0		0	5,500	5,500	7,917	
Methylene Chloride	0	0		0	2,400	2,400	3,455	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	302	
Tetrachloroethylene	0	0		0	140	140	202	
Toluene	0	0		0	330	330	475	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	2,015	
1,1,1-Trichloroethane	0	0		0	610	610	878	
1,1,2-Trichloroethane	0	0		0	680	680	979	
Trichloroethylene	0	0		0	450	450	648	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	158	
2,4-Dichlorophenol	0	0		0	340	340	489	
2,4-Dimethylphenol	0	0		0	130	130	187	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	23.0	
2,4-Dinitrophenol	0	0		0	130	130	187	
2-Nitrophenol	0	0		0	1,600	1,600	2,303	
4-Nitrophenol	0	0		0	470	470	677	
Pentachlorophenol	0	0		0	7.158	7.16	10.3	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	131	
Acenaphthene	0	0		0	17	17.0	24.5	
Anthracene	0	0		0	N/A	N/A	N/A	

Benzidine	0	0		0	59	59.0	84.9	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.14	
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	8,636	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,310	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	77.7	
Butyl Benzyl Phthalate	0	0		0	35	35.0	50.4	
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	230	
1,3-Dichlorobenzene	0	0		0	69	69.0	99.3	
1,4-Dichlorobenzene	0	0		0	150	150	216	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	1,152	
Dimethyl Phthalate	0	0		0	500	500	720	
Di-n-Butyl Phthalate	0	0		0	21	21.0	30.2	
2,4-Dinitrotoluene	0	0		0	320	320	461	
2,6-Dinitrotoluene	0	0		0	200	200	288	
1,2-Diphenylhydrazine	0	0		0	3	3.0	4.32	
Fluoranthene	0	0		0	40	40.0	57.6	
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	2.88	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.44	
Hexachloroethane	0	0		0	12	12.0	17.3	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	3,023	
Naphthalene	0	0		0	43	43.0	61.9	
Nitrobenzene	0	0		0	810	810	1,166	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	4,894	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	84.9	
Phenanthrene	0	0		0	1	1.0	1.44	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	37.4	

☑ ***THH*** CCT (min): 8.796 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments

Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	8.06	
Total Arsenic	0	0		0	10	10.0	14.4	
Total Barium	0	0		0	2,400	2,400	3,455	
Total Boron	0	0		0	3,100	3,100	4,462	
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	5.76	
Dissolved Iron	0	0		0	300	300	432	
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	1,439	
Total Mercury	0	0		0	0.050	0.05	0.072	
Total Nickel	0	0		0	610	610	878	
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	0.35	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	4.32	
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	144	
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	8.2	
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	47.5	
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	97.9	
Methyl Bromide	0	0		0	100	100.0	144	
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	82.0	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	144	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	14,394	
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	43.2	
2,4-Dichlorophenol	0	0		0	10	10.0	14.4	
2,4-Dimethylphenol	0	0		0	100	100.0	144	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.88	
2,4-Dinitrophenol	0	0		0	10	10.0	14.4	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	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	5,758	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	101	
Anthracene	0	0		0	300	300	432	
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-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	0.14	
2-Chloronaphthalene	0	0		0	800	800	1,152	
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	1,439	
1,3-Dichlorobenzene	0	0		0	7	7.0	10.1	
1,4-Dichlorobenzene	0	0		0	300	300	432	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	864	
Dimethyl Phthalate	0	0		0	2,000	2,000	2,879	
Di-n-Butyl Phthalate	0	0		0	20	20.0	28.8	
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	28.8	
Fluorene	0	0		0	50	50.0	72.0	
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	5.76	
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	48.9	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	14.4	

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	28.8	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.1	

☑ ***CRL*** CCT (min): 27.019 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total 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	0.23	
Benzene	0	0		0	0.58	0.58	2.23	
Bromoform	0	0		0	7	7.0	27.0	
Carbon Tetrachloride	0	0		0	0.4	0.4	1.54	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	3.08	
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	3.66	

1,2-Dichloroethane	0	0		0	9.9	9.9	38.1	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	3.47	
1,3-Dichloropropylene	0	0		0	0.27	0.27	1.04	
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	20	20.0	77.0	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.77	
Tetrachloroethylene	0	0		0	10	10.0	38.5	
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	2.12	
Trichloroethylene	0	0		0	0.6	0.6	2.31	
Vinyl Chloride	0	0		0	0.02	0.02	0.077	
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	
Pentachlorophenol	0	0		0	0.030	0.03	0.12	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	5.78	
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	0.0004	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.004	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0004	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.004	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.039	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.12	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1.23	
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	0.46	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0004	
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	0.19	
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	0.19	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.19	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.12	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0003	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.039	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.39	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.004	
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	0.003	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.019	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	12.7	
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
Total Boron	Report	Report	Report	Report	Report	µg/L	2,303	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	32.8	CFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	0.21	0.37	5.76	10.3	14.4	µg/L	5.76	THH	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	432	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	2,159	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	11.8	20.2	327	561	817	µg/L	327	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Chloroform	Report	Report	Report	Report	Report	µg/L	8.2	THH	Discharge Conc > 25% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing	Units	Comments

Pollutants	WQBEL	Units	Comments
Total Aluminum	750	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	8.06	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	14.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	3,455	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	292	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	N/A	N/A	Discharge Conc < TQL
Total Cobalt	27.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Lead	17.3	µg/L	Discharge Conc < TQL
Total Manganese	1,439	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.072	µg/L	Discharge Conc < TQL
Total Nickel	182	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	7.18	µg/L	Discharge Conc < TQL
Total Silver	22.8	µg/L	Discharge Conc < TQL
Total Thallium	0.35	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.23	µg/L	Discharge Conc < TQL
Benzene	2.23	µg/L	Discharge Conc < TQL
Bromoform	27.0	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1.54	µg/L	Discharge Conc < TQL
Chlorobenzene	144	µg/L	Discharge Conc < TQL
Chlorodibromomethane	3.08	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	5,038	µg/L	Discharge Conc < TQL
Dichlorobromomethane	3.66	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	38.1	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	47.5	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	3.47	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	1.04	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	97.9	µg/L	Discharge Conc < TQL
Methyl Bromide	144	µg/L	Discharge Conc < TQL
Methyl Chloride	7,917	µg/L	Discharge Conc < TQL
Methylene Chloride	77.0	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.77	µg/L	Discharge Conc < TQL
Tetrachloroethylene	38.5	µg/L	Discharge Conc < TQL
Toluene	82.0	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	144	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	878	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	2.12	µg/L	Discharge Conc < TQL

Trichloroethylene	2.31	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.077	µg/L	Discharge Conc < TQL
2-Chlorophenol	43.2	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	14.4	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	144	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.88	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	14.4	µg/L	Discharge Conc < TQL
2-Nitrophenol	2,303	µg/L	Discharge Conc < TQL
4-Nitrophenol	677	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.12	µg/L	Discharge Conc < TQL
Phenol	5,758	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	5.78	µg/L	Discharge Conc < TQL
Acenaphthene	24.5	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	432	µg/L	Discharge Conc < TQL
Benzidine	0.0004	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.004	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0004	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.004	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.039	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.12	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	1.23	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	77.7	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.14	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	1,152	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.46	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0004	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	230	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	10.1	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	216	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.19	µg/L	Discharge Conc < TQL
Diethyl Phthalate	864	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	720	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	28.8	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.19	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.19	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.12	µg/L	Discharge Conc < TQL
Fluoranthene	28.8	µg/L	Discharge Conc < TQL
Fluorene	72.0	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0003	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.039	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.44	µg/L	Discharge Conc < TQL

Hexachloroethane	0.39	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.004	µg/L	Discharge Conc < TQL
Isophorone	48.9	µg/L	Discharge Conc < TQL
Naphthalene	61.9	µg/L	Discharge Conc < TQL
Nitrobenzene	14.4	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.003	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.019	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	12.7	µg/L	Discharge Conc < TQL
Phenanthrene	1.44	µg/L	Discharge Conc < TQL
Pyrene	28.8	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.1	µg/L	Discharge Conc < TQL

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.39
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Pennridge WWTP

Permit No.: PA0020460

Test Completion Date: 9/24/2024

Replicate No.	Control	TIWC
1	0.482	0.562
2	0.451	0.543
3	0.548	0.478
4	0.476	0.44
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.489	0.506
Std Dev.	0.041	0.057
# Replicates	4	4

T-Test Result	4.2945
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 12/10/2024

Replicate No.	Control	TIWC
1	0.471	0.564
2	0.562	0.505
3	0.547	0.472
4	0.53	0.526
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.528	0.517
Std Dev.	0.040	0.039
# Replicates	4	4

T-Test Result	4.9652
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 3/18/2025

Replicate No.	Control	TIWC
1	0.426	0.48
2	0.356	0.364
3	0.43	0.399
4	0.436	0.448
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.412	0.423
Std Dev.	0.038	0.051
# Replicates	4	4

T-Test Result	3.8805
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 6/25/2024

Replicate No.	Control	TIWC
1	0.684	0.48
2	0.518	0.56
3	0.626	0.67
4	0.502	0.494
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.583	0.551
Std Dev.	0.087	0.087
# Replicates	4	4

T-Test Result	2.1019
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	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.39
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Pennridge WWTP

Permit No.: PA0020460

Test Completion Date: 9/23/2024

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

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: **PASS**

Test Completion Date: 12/10/2024

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

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: **PASS**

Test Completion Date: 3/17/2025

Replicate No.	Control	TIWC
1	1	0
2	1	1
3	1	1
4	1	0
5	1	0
6	1	0
7	1	0
8	1	0
9	1	0
10	1	0
11		
12		
13		
14		
15		
Mean	1.000	0.200
Std Dev.	0.000	0.422
# Replicates	10	10

T-Test Result
Deg. of Freedom

Test Completion Date: 6/24/2024

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	0	1
4	1	1
5	1	0
6	1	1
7	0	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.800	0.900
Std Dev.	0.422	0.316
# Replicates	10	10

T-Test Result
Deg. of Freedom

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.39
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Pennridge WWTP

Permit No.: PA0020460

Test Completion Date: 9/24/2024

Replicate No.	Control	TIWC
1	10	10
2	9	10
3	10	9
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	9.500
Std Dev.	0.500	0.577
# Replicates	4	4

T-Test Result	5.3848
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Test Completion Date: 12/10/2024

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	10.000
Std Dev.	0.000	0.000
# Replicates	4	4

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	**PASS**

Test Completion Date: 3/18/2025

Replicate No.	Control	TIWC
1	10	10
2	9	10
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.750	10.000
Std Dev.	0.500	0.000
# Replicates	4	4

T-Test Result	12.5523

Test Completion Date: 6/25/2024

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	10.000
Std Dev.	0.000	0.000
# Replicates	4	4

T-Test Result	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.39
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Pennridge WWTP

Permit No.: PA0020460

Replicate No.	Test Completion Date: 9/23/2024 Control	TIWC
1	32	16
2	32	30
3	2	27
4	31	27
5	33	22
6	27	27
7	31	34
8	27	28
9	37	26
10	30	37
11		
12		
13		
14		
15		
Mean	28.200	27.400
Std Dev.	9.647	5.816
# Replicates	10	10

T-Test Result	2.1291
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Replicate No.	Test Completion Date: 12/10/2024 Control	TIWC
1	23	25
2	18	26
3	23	26
4	20	21
5	28	30
6	22	23
7	26	23
8	23	22
9	21	30
10	24	27
11		
12		
13		
14		
15		
Mean	22.800	25.300
Std Dev.	2.860	3.129
# Replicates	10	10

T-Test Result	6.8360
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	PASS

Replicate No.	Test Completion Date: 3/17/2025 Control	TIWC
1	22	0
2	24	9
3	24	10
4	28	8
5	19	5
6	20	0
7	23	8
8	6	0
9	22	0
10	12	0
11		
12		
13		
14		
15		
Mean	20.000	4.000
Std Dev.	6.446	4.397
# Replicates	10	10

T-Test Result	-5.3228
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	FAIL

Replicate No.	Test Completion Date: 6/24/2024 Control	TIWC
1	37	30
2	41	36
3	0	30
4	30	31
5	33	0
6	36	34
7	6	34
8	32	35
9	31	27
10	33	33
11		
12		
13		
14		
15		
Mean	27.900	29.000
Std Dev.	13.585	10.551
# Replicates	10	10

T-Test Result	1.7409
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

WET Summary and Evaluation

Facility Name	Pennridge WWTP
Permit No.	PA0020460
Design Flow (MGD)	4.325
Q_{7-10} Flow (cfs)	2.94
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/24/24		3/18/25	6/25/24
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/23/24	12/10/24	3/17/25	6/24/24
Ceriodaphnia	Survival	PASS	PASS	FAIL	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/24/24	12/10/24	3/18/25	6/25/24
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/23/24		3/17/25	6/24/24
Ceriodaphnia	Reproduction	PASS	PASS	FAIL	PASS

Reasonable Potential? YES

Permit Recommendations

Test Type	**Chronic**	
TIWC	**69**	% Effluent
Dilution Series	**17, 35, 69, 85, 100**	% Effluent
Permit Limit	**1.4**	TUc
Permit Limit Species	**Ceriodaphnia dubia**	