Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0036609**
Facility Type	**Municipal**	APS ID	**1138714**
Major / Minor	**Minor**	Authorization ID	**1529583**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Borough of Conway**	Facility Name	**Conway Borough STP**
Applicant Address	801 1st Avenue	Facility Address	River Road
	Conway, PA 15027-1601		Conway, PA 15027
Applicant Contact	Margie Nelko	Facility Contact	Chad McCray
Applicant Phone	(724) 869-5550	Facility Phone	(724) 774-4054
Client ID	89964	Site ID	252190
Ch 94 Load Status	Not Overloaded	Municipality	Conway Borough
Connection Status		County	Beaver
Date Application Received	May 27, 2025	EPA Waived?	No
Date Application Accepted		If No, Reason	Pre-treatment

Purpose of Application: Draft NPDES permit application.

Summary of Review

The Pa Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from NIRA Consulting Engineers, Inc. (Consultant) on May 27, 2025 on behalf of Borough of Conway (Permittee), for Permittee's Conway Borough STP (facility). This is a minor sewage facility with a design flow of 0.5 MGD that discharges into Ohio River (WWF) in state watershed 20-G. The current permit expired on April 30, 2024 and was administratively extended since then. Renewal NPDES permit application under Clean Water Program are not covered by PADEP's PDG per 021-2100-001. This fact sheet is developed in accordance with 40 CFR §124.56.

Changes to existing permit: E. Coli monitoring, Total Mercury monitoring, and Total Copper monitoring added. TSS mass limit recalculated.

Sludge use and disposal description and location(s): Liquid sludge is hauled-off to New Castle STP for further treatment and ultimate disposal.

Public Participation

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

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, P.E. / Environmental Engineer	November 17, 2025
X		Pravin Patel Pravin Patel, P.E. / Environmental Engineer Manager	11/18/2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.5
Latitude	40º 39' 58"	Longitude	-80º 14' 58"
Quad Name	Baden	Quad Code	1304
Wastewater Description:	Sewage Effluent		
Receiving Waters	Ohio River (WWF)	Stream Code	32317
NHD Com ID	99680246	RMI	958.96
Drainage Area	19,564 mi^2	Yield (cfs/mi^2)	0.25
Q_{7-10} Flow (cfs)	4800	Q_{7-10} Basis	Previous fact sheet
Elevation (ft)	700	Slope (ft/ft)	
Watershed No.	20-G	Chapter 93 Class.	WWF
Existing Use	**WWF**	Existing Use Qualifier	
Exceptions to Use	Add N (Navigation)	Exceptions to Criteria	Subject to ORSANCO Standards
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake		Center Township Water Authority, Center TWP, Beaver	
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	5.18

Changes Since Last Permit Issuance: None

Streamflow:
Streamflow data was collected from previous fact sheet as StreamStats couldn't delineate the drainage area at the outfall 001.

PWS Intake:
The nearest downstream public water supply is Center Township Water Authority, on Ohio River at RMI 13.17. Its approximately 5.18 miles downstream of Outfall 001. Discharge from this facility is expected not to impact the PWS intake due to distance, larger dilution, and effluent limitations.

Wastewater Characteristics:
Discharge pH of 7.0 S.U., temperature of 25°C and hardness of 100 mg/l will be used for modeling, as appropriate.

Background data:
There's no nearby WQN station to collect the stream data from. In absence of site specific data, a default pH of 7.0, temperature of 25°C, and hardness of 100 mg/l will be used for modeling, as appropriate.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving streams are designated as Warm Water Fishes (WWF). No High-Quality stream or Exceptional Value water is impacted by this discharge; therefore, no Antidegradation Analysis is performed for the discharge.

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

Ohio River Chlordane and PCB TMDL:
The discharge from this facility is into a segment that is identified in the Ohio River TMDL for Chlordane and PCBs (Watershed 20-G). However, the TMDL stated that for PCBs, the former point sources identified in the Source Assessment Section have ceased operations, there are no known point source dischargers of PCBs. For Chlordane, because there are no known point sources to this segment of Ohio River, it is treated as a nonpoint source contaminant. All TMDL are assigned to Load Allocation (non-point sources). No monitoring or limits requirement will be placed in the permit during this permit term.

Biosolids management:
The settleable solids collected in both the Imhoff tanks and the clarigester undergo normal anaerobic digestion in the digester compartments of each tank. Sludge formed in these primary tanks is removed by pump truck and transported to other municipal wastewater plants for treatment.

Treatment Facility Summary

Treatment Facility Name: Conway Borough STP

WQM Permit No.	Issuance Date
8619	4/28/1955
366S005	6/20/1966
0472405	8/18/1972

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Attached Growth	Gas Chlorine	0.5

Hydraulic Capacity (MGD)	Organic Capacity (lbs./day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.5	850	Not Overloaded	Imhoff Tanks	Other WWTP

Changes Since Last Permit Issuance: None

Treatment Plant Description

Conway Borough owns and operates Conway Borough STP, located in Conway Borough, Beaver County. This is a minor sewage facility with a design flow of 0.5 MGD.

Flow enters the plant are directed to a bar screen and then passed through the comminutor to cut and shred large solids, rags, etc. enroute to the wet well. Flows are then pumped from the wet well by the raw sewage pumps. The raw sewage pumps discharge to the parshall flume where the flows are measured by an ultrasonic flow meter. After the flow pass through the parshall flume, a flow splitter proportionately directs flows to the Imhoff ranks and to the clarigester. In these tanks, primary treatment and sedimentation take place and grease, oils, and other floating matter are skimmed off. The settleable solids collected in both the Imhoff tanks and the clarigester undergo normal anaerobic digestion in the digester compartments of each tank. Sludge formed in these primary tanks is removed by pump truck and transported to other municipal plants for treatment and ultimate disposal.

After the flows leave the primary treatment and sedimentation tanks, they are conveyed to a secondary wet well, from which it is pumped to the trickling filter. Flows leaving the trickling filter are conveyed to one of two final clarifiers. Sludge

generated from this process is air-lifted back to the head works of the plant for recirculation. Upon leaving the final clarifiers the flows are conveyed to the chlorine contact tanks prior to discharging into Ohio River.

A discussion with the Consultant on October 3, 2025 indicated that the facility is in tract to connect with Baden (currently in design phase) with a tentative construction in 2026-27 with funding contingency. The facility continued accepting flows from Conway Railroad Yard.

The facility accepts flows from the following contributors:

TRIBUTARY INFORMATION				
		Type of Sewer System		
Municipalities Served	Flow Contribution (%)	Separate (%)	Combined (%)	Population
Conway Borough	92	100		2,172
Economy Borough	8	100		Commercial Users

Existing Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs./day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Average Monthly	Weekly Average	Maximum	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/week	Grab
TRC	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.6	1/day	Grab
CBOD5	104	167	25.0	40.0	XXX	50	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	Report	XXX	XXX	XXX	1/week	8-Hr Composite
TSS	152	188	30.0	45.0	XXX	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	Report	XXX	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Nov 1 - Mar 31	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) Apr 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	400	1/week	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Ammonia-Nitrogen	Report	XXX	XXX	Report Avg Mo	XXX	XXX	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite

Compliance History

DMR Data for Outfall 001 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
Flow (MGD) Average Monthly	0.419	0.339	0.3888	0.268	0.283	0.304	0.394	0.333	0.41	0.348	0.352	0.419
Flow (MGD) Daily Maximum	1.187	0.405	0.80	0.502	0.437	0.474	0.483	0.475	0.713	0.599	0.427	0.683
pH (S.U.) Instantaneous Minimum	7.2	7.2	7.4	7.3	7.4	7.2	7.2	7.2	7.3	7.3	7.2	7.2
pH (S.U.) Instantaneous Maximum	7.8	7.7	7.7	7.7	7.7	7.6	7.7	7.6	7.6	7.6	7.6	7.6
DO (mg/L) Instantaneous Minimum	4.2	5.0	4.4	5.2	4.2	4.6	4.8	4.4	5.1	4.8	4.4	4.4
TRC (mg/L) Average Monthly	0.38	0.41	0.39	0.35	0.38	0.33	0.44	0.38	0.37	0.41	0.34	0.33
TRC (mg/L) Instantaneous Maximum	0.9	0.50	0.80	1.0	0.9	0.8	0.90	1.1	0.50	1.0	0.80	0.40
CBOD5 (lbs./day) Average Monthly	61.0	43.0	30	32	37	30	39	36	< 34	24	28	33.00
CBOD5 (lbs./day) Weekly Average	69	67.0	34	44	41	37	55	54	54	29	35	54.0
CBOD5 (mg/L) Average Monthly	20.6	16.1	10.7	15.1	16.0	13.4	15.2	13.2	< 9.9	8.8	9.6	10.00
CBOD5 (mg/L) Weekly Average	25.0	23	13.4	23.0	19.0	16	21.0	19.4	19.00	11.0	11.00	17.0
BOD5 (lbs./day) Raw Sewage Influent Average Monthly	481	423	551	331	365	465	422	485	381	367	392	447
BOD5 (lbs./day) Raw Sewage Influent Daily Maximum	513	630	973	457	407	631	606	558	585	517	417	555
BOD5 (mg/L) Raw Sewage Influent Average Monthly	165	160	166	155	165	208	171	179	108	134	134	128
TSS (lbs./day) Average Monthly	18	19	< 14	14	20	17	14	14	< 15.00	< 12	24	< 0.32

TSS (lbs./day) Raw Sewage Influent Average Monthly	305	303	341	257	316	357	310	554	355	328	394	319
TSS (lbs./day) Raw Sewage Influent Daily Maximum	373	382	503	415	390	437	368	901	575	408	574	408
TSS (lbs./day) Weekly Average	19	36	21	17	23	20	21	19	20.0	21	36	76.00
TSS (mg/L) Average Monthly	6.0	7.0	< 5.0	6.00	9.0	7.0	5.0	5.0	< 4.0	< 5.0	9.0	< 10.00
TSS (mg/L) Raw Sewage Influent Average Monthly	103	118	110	119	142	158	124	207	98.0	120	137	91
TSS (mg/L) Weekly Average	7.0	12.0	7.0	8.00	9.0	9.0	6.0	7.0	7.0	8.0	14.00	26.00
Fecal Coliform (No./100 ml) Geometric Mean	< 2	< 1.0	< 1.0	< 1	< 2.0	< 1.0	< 2.0	< 3.0	7.0	< 2.0	< 2.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	15	1.0	4.0	1	8.0	2.0	7	43	67.00	7.0	5.0	< 1.0
Total Nitrogen (mg/L) Daily Maximum					11.1							
Ammonia (lbs./day) Average Monthly	22	29	27	18	22	18	17.0	20	20	18	16	13.00
Ammonia (mg/L) Average Monthly	7.49	10.62	8.46	8.51	9.56	7.83	6.76	7.18	5.79	6.6	5.54	4.02
Total Phosphorus (mg/L) Daily Maximum					1.42							

Compliance History

April 30, 2025: RTPT conducted. Violations noted including failure to report pollution incident or incorrect reporting, failure to submit or properly completing monitoring reports, violations of permit limits, SSO, failure to properly document monitoring activities and results, failure to use a format or process required by the PADEP for self-reporting results, failure to submit NPDES permit renewal application at least 180 days prior to expiration etc.

June 8, 2022: CEI conducted. No violation noted. The facility had exceeded permit limits 6 different occasions since last inspection. There have been 8 bypasses since last inspection in 2019.

July 8, 2019: CEI conducted. Violations noted including effluent violations and bypasses at the head of the plant. Recommendations made including treatment alternative for filter fly issue, to bring clarigestor online, proper WET testing, reporting of future bypasses and maximizing throughput treatment, and PPC plan.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .5
Latitude 40º 39' 58.00" **Longitude** -80º 14' 58.00"
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)
BOD5	45	Average Monthly		ORSANCO
BOD5	65	Weekly Average		ORSANCO
CBOD5	40	Average Monthly		ORSANCO
CBOD5	60	Weekly Average		ORSANCO
TSS	45	Average Monthly		ORSANCO
TSS	65	Weekly Average		ORSANCO
pH	6-9 S.U.	Min-Max		ORSANCO
Fecal Coliform	2,000/100 ml	Geo Mean		ORSANCO
E. Coli (4/1 – 10/31)	130/100 ml	90-days Geo Mean		ORSANCO
E. Coli	240/100 ml	<25%		ORSANCO

Comments: The above ORSANCO limits for BOD5 or CBOD5, and TSS are for trickling filter, such as this facility.

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

Water Quality based Effluent Limitations:

A WQM 7.0 modeling wasn't performed due to larger dilution at the Ohio River. The dilution ratio is 4800 cfs: (0.5 MGD * 1.547 cfs/MGD) or about 6,200:1. Secondary treatment requirements for CBOD5, DO, and Ammonia-N should be protective. The existing limits for these pollutants will be carried over.

ORSANCO Compact Pollution Control Standards:

The previous table lists ORSANCO Compact's 2019 revised requirements for BOD5/CBOD5, TSS, Fecal Coliform, and E. Coli. CBOD5 and TSS limits are less stringent than State/Federal requirements. More stringent limits will be applied. pH limits are the same as State/Federal limits. The previous renewal provided the following explanation showing how Fecal Coliform limits satisfied ORSANCO's E. Coli requirements:

The following correlation analysis was made to show that extending the warmer period Fecal Coliform limits to include the month of April will be adequate to meet the above E. coli limit. ORSANCO has not objected to the use of this analysis:

The equations below are taken from the Ohio Environmental Protection Agency:

Current Warmer Period Avg. Monthly limit for Fecal Coliform (FC) = 200/100 ml

Using the equation for NE area of Ohio, E. coli = 0.667 x (FC)^1.034 = 159.73/100 ml

Using the equation for rest of Ohio, E. Coli = 0.403 x (FC)^1.028 = 93.49/100 ml

Average of two values = (159.73 + 93.49)/2 = 126.61/100 ml < 130/100 ml

In summary, the discharge meets the ORSANCO E. coli effluent standard of 130/100 ml by maintaining an effluent Fecal Coliform Avg. Monthly limit of 200/100 ml from April through October, which becomes the new recreational season period. Using the same equations for a maximum Fecal Coliform count of 400/100 ml at 10% of the time exceedance is more restrictive than the 25% exceedance at 240/100 ml E. coli.

PADEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised February 5, 2024)" footnote 11 (page 3) states "Ohio River Basin: For any discharge not direct to the Ohio River main stem, apply the fecal coliform limits as presented in the table above. If the discharge is directly to the Ohio River, modify the fecal coliform limits as follows: May through October – 200 geometric mean, 400 IMAX, and November through April – 2,000 geometric mean, 10,000 IMAX." This recommendation supports previous determination. Existing Fecal Coliform limits will be continued. It should be noted that per the previous SOP and under the authority of Pa Code 25 § 92a. 61, **a quarterly E. Coli monitoring** will be added in this renewal for sewage facilities with design flow between 0.05 MGD and 1 MGD.

Toxics Management Spreadsheet (TMS)

Based on the available data, PADEP utilizes Toxics Management Spreadsheet (TMS) to (1) evaluate reasonable potential for toxic pollutants to cause or contribute to an excursion above the water quality standards and (2) develop WQBELs for those such toxic pollutants (i.e., 40 CFR § 122.44(d)(1)(i)). It is noteworthy that some of these pollutants that may be reported as "non-detect", but still exceeded the criteria, were determined to be candidates for modeling because the method detection levels used to analyze those pollutants were higher than target QLs and/or the most stringent Chapter 93 criteria. The model then recommended the appropriate action for the Pollutants of Concerns based on the following logic as stated in PADEP's SOP titled *"Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers (DEP SOP No.: BCW-PMT-037, Revised May 20, 2021)"*:

1. In general, establish limits in the draft permit where the effluent concentration determined in B.1 or B.2 equals or exceeds 50% of the WQBEL (i.e., RP is demonstrated). Use the average monthly, maximum daily and instantaneous maximum (IMAX) limits for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).

2. For non-conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 25% - 50% of the WQBEL.

3. For conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 10% - 50% of the WQBEL.

NOTE 4 – If the effluent concentration determined in B.1 or B.2 is "non-detect" at or below the target quantitation limit (TQL) for the pollutant as specified in the TMS and permit application, the pollutant may be eliminated as a candidate for WQBELs or monitoring requirements unless 1) a more sensitive analytical method is available for the pollutant under 40 CFR Part 136 where the quantitation limit for the method is less than the applicable water quality criterion and 2) a detection at the more sensitive method may lead to a determination that an effluent limitation is necessary, considering available dilution at design conditions.

NOTE 5 – If the effluent concentration determined in B.1 or B.2 is a detection below the TQL but above or equal to the applicable water quality criterion, WQBELs or monitoring may be established for the pollutant.

4. Application managers may, on a site- and pollutant-specific basis, deviate from these guidelines where there is specific rationale that is documented in the fact sheet.

The toxic pollutants are modeled through TMS and the output is provided below:

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	mg/L	0.092	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Mercury	Report	Report	Report	Report	Report	mg/L	0.003	THH	Discharge Conc > 10% WQBEL (no RP)

Total Copper: The model input for Total Copper was 0.03 mg/l (application data). A quarterly monitoring will be added.

Total Mercury: The model input was 0.001 mg/l (average sample results from July 2019 through September 2020). Quarterly monitoring will be continued for this permit term.

Other Requirements:

Nutrients monitoring:
PADEP's SOP BCW-PMT-033 recommends monitoring for Total Nitrogen and Total Phosphorus for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Current monitoring requirement will be continued.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
The existing limits of 30 mg/L average monthly, 45 mg/l average weekly, and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The mass based average monthly and weekly average limits are recalculated to be 125 lbs./day and 188 lbs./day respectively. Apparently, the average monthly mass limit in current permit was a typo (152 instead of 125), which will be corrected in this renewal.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that a water quality limit of 0.5 mg/l would be needed to prevent toxicity concerns at the discharge point for Outfall 001. The recommended IMAX limit is 1.6 mg/l. These are the existing limits and will be carried over.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Flow and Influent BOD_5 and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

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.

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: **Annually**

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: 2%.

Summary of Four Most Recent Test Results

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
3/19/2021	Pass	Pass	Pass	Pass
3/25/2023	Pass	Pass	Pass	Pass
3/22/2024	Pass	Pass	Pass	Pass
3/23/2025	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t 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: None

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

Acute Partial Mix Factor (PMFa): **0.113** Chronic Partial Mix Factor (PMFc): **0.785**

1. **Determine IWC – Acute (IWCa)**:

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

   [(0.5 MGD x 1.547) / ((4799 cfs x 0.113) + (0.5 MGD x 1.547))] x 100 = **0.14%**

   Is IWCa < 1%? ☒ **YES** ☐ **NO**

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

   N/A

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

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

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

[(0.5 MGD x 1.547) / ((4799 cfs x 0.785) + (0.5 MGD x 1.547))] x 100 = **0.02%**

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%.
TIWC = 1%

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

Development of Effluent Limitations			
Outfall No.	010	**Design Flow (MGD)**	0
Latitude	40º 39' 58.00"	**Longitude**	-80º 14' 58.00"
Wastewater Description:	Stormwater		

Outfall 010 is a stormwater outfall which comingles with treated sewage from Outfall 001 and the combined effluent is discharges into Ohio River via a single outfall pipe. The STP effluent samples are collected at the effluent weir of the chlorine contact tank which is well before the point where the two pipes connect. Stormwater sampling are not required for minor sewage facilities.

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	Average Monthly	Weekly Average	Daily Maximum	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/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5 Avg Mo	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	104	167	25.0	40.0	XXX	50	1/week	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	Report	XXX	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	125	188	30.0	45.0	XXX	60	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	Report	XXX	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Nov 1 - Mar 31	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) Apr 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	400	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Ammonia-Nitrogen	Report	XXX	XXX	Report Avg Mo	XXX	XXX	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite

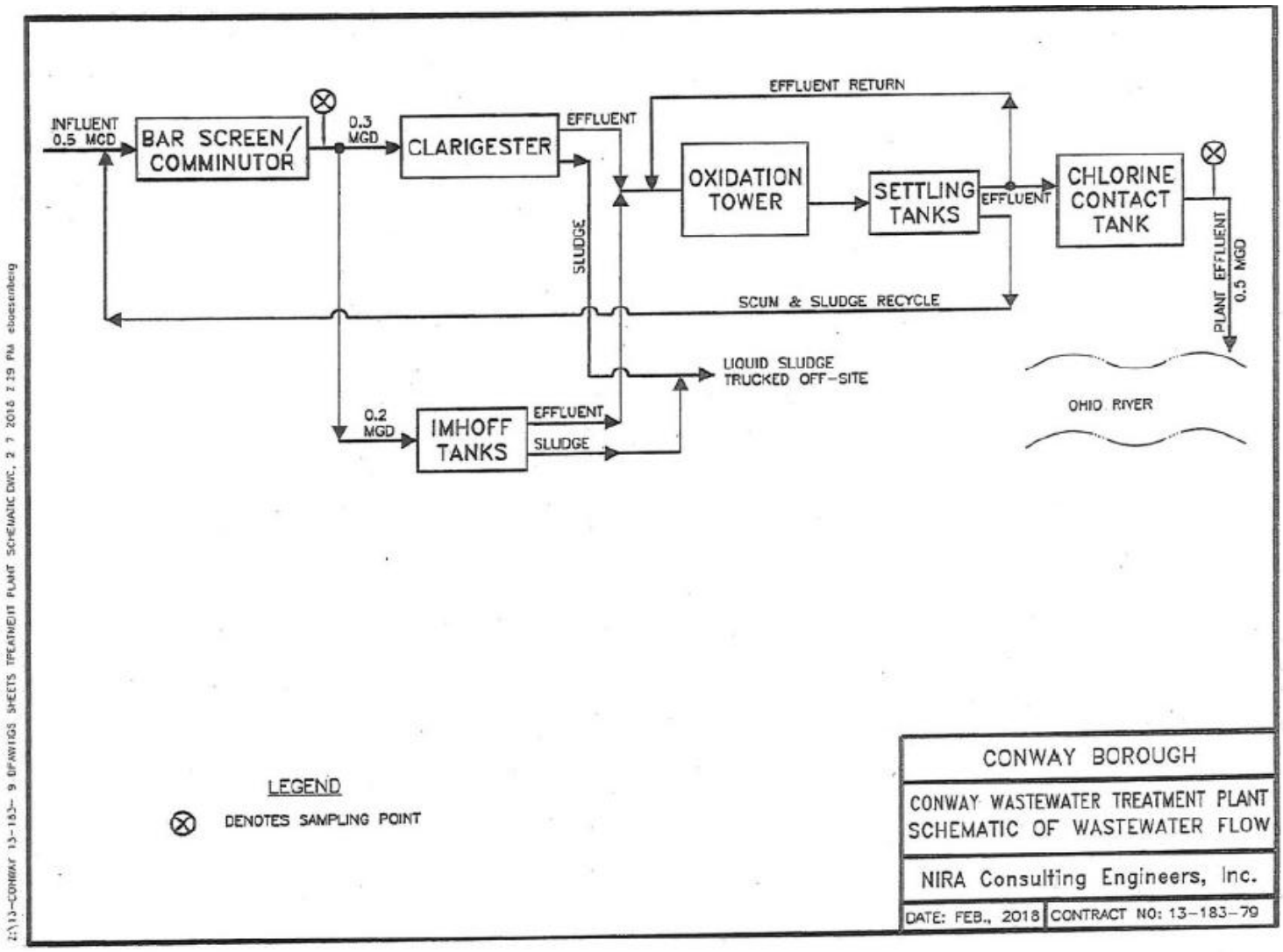
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Average Monthly	Weekly Average	Daily Maximum	Instant. Maximum		
Copper, Total	XXX	XXX	XXX	Report Avg Qrtly	Report	XXX	1/quarter	8-Hr Composite
Mercury, Total	XXX	XXX	XXX	Report Avg Qrtly	Report	XXX	1/quarter	8-Hr Composite

Compliance Sampling Location: at Outfall Pipe 001 Prior to where Storm Water Outfall 010 connects to Outfall 001.

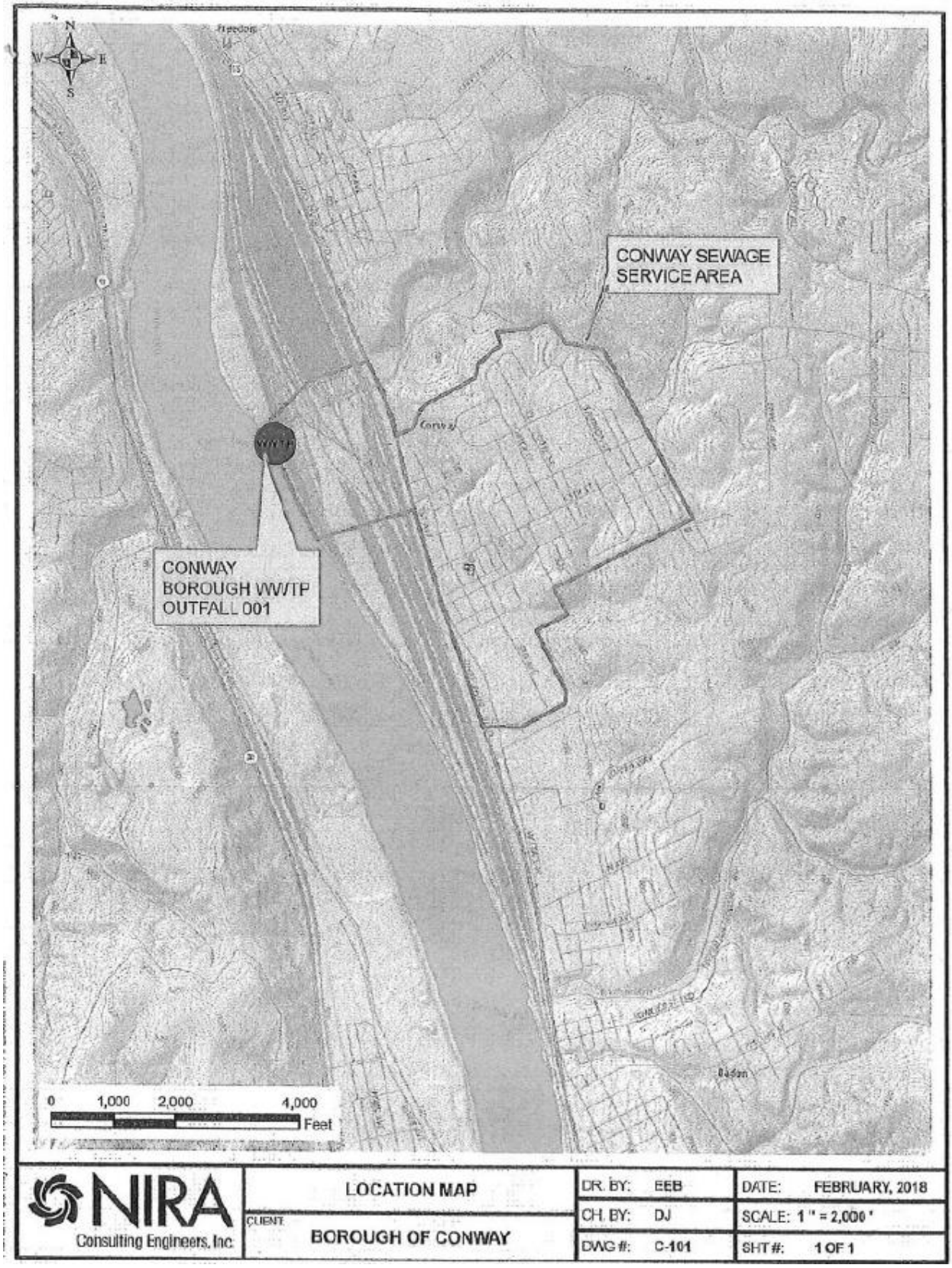
Other Comments:

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:

Process Flow Diagram



Location map and service area



TMS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Conway Borough STP NPDES Permit No.: PA0036609 Outfall No.: 001

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.5	100	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L		0.03									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	mg/L		0.09									
	Total Iron	mg/L		0.28									
	Total Lead	mg/L	<	0.003									
	Total Manganese	µg/L											
	Total Mercury	mg/L		0.001									
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.06									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

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

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

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Ohio River

No. Reaches to Model: 1

◉ Statewide Criteria
○ Great Lakes Criteria
○ ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	032317	958.96	700	19564			Yes
End of Reach 1	032317	958.46	699	19570			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	958.96	0.2453										100	7		
End of Reach 1	958.46	0.2453										100	7		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	958.96														
End of Reach 1	958.46														

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.001 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	13.439	14.0	144	Chem Translator of 0.96 applied
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	64.581	81.6	839	Chem Translator of 0.791 applied
Total Mercury	0	0		0	1.400	1.65	16.9	Chem Translator of 0.85 applied
Total Zinc	0	0		0	117.180	120	1,231	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.010 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	8.956	9.33	609	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	9,307,995	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	208	Chem Translator of 0.791 applied
Total Mercury	0	0		0	0.770	0.91	59.1	Chem Translator of 0.85 applied
Total Zinc	0	0		0	118.139	120	7,821	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.010 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	19,583	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.050	0.05	3.26	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.014 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	
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 Mercury	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	mg/L	0.092	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Mercury	Report	Report	Report	Report	Report	mg/L	0.003	THH	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Dissolved Iron	19.6	mg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	9,308	mg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	0.21	mg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	0.79	mg/L	Discharge Conc ≤ 10% WQBEL

TRC

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

4799	= Q stream (cfs)	0.5	= CV Daily
0.5	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	1979.180	1.3.2.iii	WLA cfc =	1929.538
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	737.490	5.1d	LTA_cfc =	1121.743

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)