pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0025941**
Facility Type	**Sewage**	APS ID	**862251**
Major / Minor	**Major**	Authorization ID	**1320263**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Canonsburg Houston Joint Authority**	Facility Name	**Canonsburg Houston Joint WWTP**
Applicant Address	68 E Pike Street	Facility Address	315 Curry Hill Road
	Canonsburg, PA 15317-1375		Canonsburg, PA 15317-1375
Applicant Contact	Allison Deater	Facility Contact	Rick Dodds
Applicant Phone	(724) 678-7773	Facility Phone	(814)-725-8659
Client ID	64436	Site ID	246449
SIC Code	4952	Municipality	Cecil Township
SIC Description	Trans. & Utilities - Sewerage Systems	County	Washington
Date Published in PA Bulletin	April 8, 2023	EPA Waived?	No
Comment Period End Date	May 8, 2023	If No, Reason	Major Facility, Pretreatment

Purpose of Application: Application for a renewal of an NPDES permit for discharge of treated Sewage

Internal Review and Recommendations

The Department of Environmental Protection (DEP) published notice of draft Authorization to discharge under the National Discharge Elimination System (NPDES) discharge requirements for treated sewage for Canonsburg Houston Joint WWTP in the *Pennsylvania Bulletin* on April 8, 2023 [53 Pa.B. 1950]. The bulletin notice is provided in Attachment A. A 30-day comment period was provided during which interested parties were directed to submit comments to DEP.

The purpose of this fact sheet is to document the comments received, the Department's formal response to said comments, and where applicable, the changes made to the draft permit.

Comments were received from the EPA as well as from Greenman-Pedersen, Inc. on behalf of Canonsburg Houston Joint Authority (CHJA). As a result of these comments the following changes are being made to the draft permit:

- The monitoring frequency for total manganese and total aluminum is changing to 1/quarter.
- The monitoring frequency for dichlorobromomethane, chlorodibromomethane, total iron, total boron, dissolved iron, and total zinc are changing to 2/month.
- The chloroform limit is being removed.
- The $CBOD_5$ mass limits are changing to reflect rounding to three significant figures.
- The $CBOD_5$ mass loading limits are changing to reflect rounding to four significant figures.

These changes are considered to be a major amendment, and therefore require the permit to be formally re-drafted.

Permit issuance is recommended.

Approve	Return	Deny	Signatures	Date
X			Stephanie Conrad / Environmental Engineering Specialist	June 12, 2023
x			Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	June 26, 2023

Internal Review and Recommendations

US EPA Region III sent the email provided in Attachment B on April 26, 2023. In the email they made the following statement:

According to the Memorandum of Agreement (MOA) between the U.S. Environmental Protection Agency Region III (EPA) and the Pennsylvania Department of Environmental Protection (PADEP), the EPA is reviewing a draft National Pollutant Discharge Elimination System (NPDES) permit for:

Draft Permit: Canonsburg Houston Joint WWTP
NPDES Number: PA0025941
EPA-received March 28, 2023
30-day Response: April 27, 2023

This is a major that discharges to the Chartiers Creek and is affected by the Chartiers Creek TMDL as well as the Chartiers Watershed TMDL. Therefore, EPA has performed a limited review of the draft permit based on the wasteload allocation (WLA) requirements of the approved Chartiers Creek and Chartiers Watershed TMDLs, Pretreatment requirements, as well as the Whole Effluent Toxicity (WET) testing requirements. Thank you for our April 14 correspondence and providing the WET Analysis Spreadsheets. EPA has completed its review and offers the following comment:

1. The Chartiers Watershed TMDL addresses aluminum, iron, and manganese impairment due to acid mine drainage. The previous permit imposed a monitoring and reporting requirement for these three parameters. Page 22 of the fact sheet indicates that these requirements will again be imposed quarterly for this permit term. However, on page 27 of the fact sheet, the proposed monitoring requirements for Total Aluminum and Total Manganese are each listed as having a minimum measurement frequency of 1/year and Total Iron is listed as requiring monitoring 1/week. The same requirements are listed on page 5 of the permit. Can you explain these discrepancies?

> **DEP's Response:** The monitoring frequency for total aluminum and total manganese were inadvertently imposed as 1/year in the draft permit. Monitoring frequency should be 1/quarter to be consistent with the previous permit. The monitoring frequency for these two parameters is being changed to 1/quarter in this draft permit.
>
> Based on WMS modeling, it was determined that that the input effluent concentration for total iron was greater than 10% of the theoretical WQBEL, therefore toxics monitoring is justifiable in accordance with the Department's SOP for *Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037].
>
> Monitoring frequency for toxic parameters are assigned based on Table 6-3 of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. Weekly monitoring frequency for total iron would be in accordance with this policy. Section IV. E.5 of the Department's *SOP for New and Reissuance of Sewage Individual NPDES Permit Applications* [SOP No. BCW-PMT-037] clarifies that when a new parameter is introduced into a renewal permit to verify reasonable potential, a monitoring frequency less than that required in Table 6-3 may be imposed. In accordance with this section, a monitoring frequency of 2/month will be imposed for total iron.
>
> The monitoring frequency dictated for total iron as a toxic parameter of concern is greater than the monitoring frequency dictated for total iron as parameter of concern in the TMDL. The more frequent of the two monitoring frequencies is being imposed.

In response to the draft permit, Diane Atland with Greenman-Pedersen, Inc. sent a formal letter dated May 1, 2023 on behalf of CHJA which contained comments regarding the facility's new total boron, total iron, dichlorobromomethane and chlorodibromomethane monitoring, the new chloroform limit, and the reduced $CBOD_5$ limit. The complete comment letter is provided in Attachment C.

1. CHJA finds the inclusion of both dichlorobromomethane and chlorodibromomethane for weekly sampling to be arbitrary. Little consideration was given to the fact that the Authority chlorine disinfection was replaced by ultraviolet (UV) for disinfection. There is no longer a justification for the Authority to continue to be subject to the expense associated with chlorine disinfection when the source of these two parameters has been discontinued.

Internal Review and Recommendations

DEP's Response: The Department justified the imposition of monitoring for dichlorobromomethane and chlorodibromomethane on page 20 and 21 of the draft fact sheet issued March 24, 2023. Based on the data submitted in the application package and with the pre-draft sampling, the Toxic Management Spreadsheet (TMS) model was run. In both cases, the input effluent concentration was compared to the calculated theoretical Water Quality Based Effluent Limit (WQBEL) and the effluent concentration was found to be greater than 25% of the WQBEL. Both pollutants are non-conservative, therefore, monitoring is justifiable in accordance with the Department's SOP for *Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037].

The Authority has postulated that switching from Chlorine disinfection to UV disinfection has mitigated the creation of dichlorobromomethane and chlorodibromomethane. The Department is requiring two years of monitoring data to prove that these parameters are not in the effluent and therefore a monitoring requirement is no longer justifiable.

Monitoring frequency for toxic parameters are assigned based on Table 6-3 of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. Section IV. E.5 of the Department's *SOP for New and Reissuance of Sewage Individual NPDES Permit Applications* [SOP No. BCW-PMT-037] clarifies that when a new parameter is introduced into a renewal permit to verify reasonable potential, a monitoring frequency less than that required in Table 6-3 may be imposed. In accordance with this section, a monitoring frequency of 2/month will be imposed for dichlorobromomethane and chlorodibromomethane Please note this condition only applies to the first permit cycle for which the pollutant of concern is imposed. If monitoring data confirms that continued monitoring should be imposed in the next permit cycle, then weekly monitoring will be imposed.

2. CHJA also questions the inclusion of chloroform limits in the draft permit since chloroform is considered to be a byproduct of chlorine disinfection. Similar to the chlorine byproducts that were collected on the same date that the Department discounted as suspected "outliers" the data from this date should have also been discarded from the data set.

   DEP's Response: PA DEP data analysis guidance and policies do not allow for data to be "discarded" for any data set.

   The EPA published *Guidance for Data Quality Assessment* (Data Quality Guidance) [EPA QA/G-9 QA00 Version]. Table 4.3 recommends us of the Extreme Value Test (Dixon's Test) for data sets where the sample size is less than 24 and normally distributed. The Chloroform data for this facility has a sample size of ten and is distributed delta lognormally. The chloroform data was transformed to a normal distribution and a Dixon Test was performed. The Dixon test statistic C was calculated to be 1, which is greater than the critical value of 0.47 for a 5% significance level, therefore, there is evidence that the sample value of 19.5 is an outlier at this significance level. The Dixon's Test excel file output is included in Attachment D.

   The Department's SOP for *Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037] states that when a sample size is greater than 10, if outliers are suspected, then the median value may be used as the input value for TMS model. A median value of 1.405 was therefore input into the TMS model. The input effluent concentration was compared to the calculated theoretical Water Quality Based Effluent Limit (WQBEL) and the effluent concentration was found to be less than 25% of the WQBEL. Chloroform is non-conservative; therefore, monitoring is no longer justifiable. The limit has been removed from the draft permit. This change is considered a major amendment and will require a re-draft of the permit. Output files for the updated TMS Spreadsheet Model are included in Attachment E.

3. The Authority disputes the perceived necessity to include either total boron or total iron sampling at the frequency of once per week. As with the other "monitor only" parameters, the Department should clearly specify directly that the removal of these requirements would be a minor amendment to the permit rather than a major amendment to the permit.

   DEP's Response: The department justified the imposition of sampling for total iron and total boron on pages 20 and 21 of the fact sheet issued on March 24, 2023. Based on data submitted in the application package and with the pre-draft sampling, the Toxic Management Spreadsheet (TMS) model was run. In both cases, the input effluent concentration was compared to the calculated theoretical Water Quality Based Effluent Concentration (WQBEL) and found to be greater than 10% of the WQBEL. Both pollutants are conservative, and monitoring is therefore justifiable in accordance

Internal Review and Recommendations

with the Department's SOP for *Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037].

Monitoring frequency for toxic parameters are assigned based on Table 6-3 of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. Weekly monitoring frequency for total iron and total boron parameters in in accordance with this policy. Section IV. E.5 of the Department's SOP for *New and Reissuance of Sewage Individual NPDES Permit Applications* [SOP No. BCW-PMT-037] clarifies that when a new parameter is introduced into a renewal permit to verify reasonable potential, a monitoring frequency less than that required in Table 6-3 may be imposed. In accordance with this section, a monitoring frequency of 2/month will be imposed for total iron and total boron. Please note this condition only applies to the first permit cycle for which the pollutant of concern is imposed. If monitoring data confirms that continued monitoring should be imposed in the next permit cycle, then weekly monitoring will be imposed.

Although not mentioned in the Authority's letter, the monitoring frequency of dissolved iron and total zinc are also being changed to 2/month for the same reason justified above.

25 PA code § 92.a2. and 40 CFR § 122.63 define the conditions which constitute a minor NPDES Permit amendment. Considering removal of a monitoring requirement is not included as minor amendment in either code, and therefore considering it a minor amendment would be contrary to Pennsylvania and Federal law.

4. The Authority continues to question the Department's changes in $CBOD_5$ discharge modeling was arbitrary.

   DEP's Response: Inputs for the WQM 7.0 model were based on current Pennsylvania guidance at the time of draft permit issuance. The authority has the opportunity to submit site specific data for any input they question the validity of. In the absence of site-specific data, model input sources were documented on page 19 of the draft fact sheet issued March 24, 2023.

5. The Department's new modeling for $CBOD_5$ indicates that the summer 30-day average permit limit should be set to 12.96 mg/L and winter 30-day average permit limit should be set at 21.2 mg/L.

   DEP Response: Rounding for conventional pollutants is based on Chapter 5 C.2. of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. For conventional pollutants with a general magnitude of 10.0-60.0, numeric limits are typically rounded down to the nearest one. The guidance does, however, allow that the rounding convention is guidance and that rounding is intended to reflect the accuracy and sensitivity of the analytical method used. CHJA submitted laboratory reports supporting that the laboratory who processes their $CBOD_5$ samples, CWM Environmental, is able to reliably measure $CBOD_5$ to the tenth of a mg/L. Based on this evidence, the average monthly permit concentration limits for $CBOD_5$ are being changed to 12.9 and 21.2 for summer and winter, respectively. DEP's policy to always round down for calculating limits remains in effect. Daily maximum and instantaneous maximum limits rounding are also changing to reflect three significant digits. In order to accommodate the additional significant figure, the mass loading limits are being rounded to four significant figures as opposed to the three significant figures used in the draft permit issued March 24, 2023.

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" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Three Years Following Permit Issue 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	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	313.1	469.7 Wkly Avg	XXX	4.47	6.70 Wkly Avg	8.94	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	151.3	226.9 Wkly Avg	XXX	2.16	3.24 Wkly Avg	4.32	1/week	24-Hr Composite
Total Copper (ug/L)	1.3	1.78	XXX	18.5	25.4	25.4	1/week	24-Hr Composite
Free Cyanide (ug/L)	0.32	0.59	XXX	4.62	8.49	11.5	1/week	24-Hr Composite
Total Mercury (ug/L)	0.004	0.007	XXX	0.058	0.11	0.14	1/week	24-Hr Composite

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" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Three Years Following Permit Issue Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	350.7	526.1 Wkly Avg	XXX	7.0	10.5 Wkly Avg	14	1/weekday	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	175.4	265.5 Wkly Avg	XXX	3.5	5.3 Wkly Avg	7	1/day	24-Hr Composite
Total Copper (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Free Cyanide (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Mercury (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

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" (362-0400-001), 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	Daily Maximum	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	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	1485	2227 Wkly Avg	XXX	21.2	31.8 Wkly Avg	42.4	1/day	24-Hr Composite
CBOD5 May 1 - Oct 31	903	1352 Wkly Avg	XXX	12.9	19.3 Wkly Avg	25.8	1/day	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/day	24-Hr Composite
TSS	2100.0	3150.0 Wkly Avg	XXX	30.0	45.0 Wkly Avg	60	1/day	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/day	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	1/month	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Boron (ug/L)	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Dissolved Iron (ug/L)	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Total Iron (ug/L)	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Total Manganese	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Zinc (ug/L)	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Chlorodibromo-methane (ug/L)	Report	Report	XXX	Report	Report	XXX	2/month	4 Grabs/24 Hours
Dichlorobromo-methane (ug/L)	Report	Report	XXX	Report	Report	XXX	2/month	4 Grabs/24 Hours

Compliance Sampling Location: Outfall 001

Other Comments: None

ATTACHMENT A

PA Bulletin Notice

Applications, Actions and Special Notices

APPLICATIONS

[53 Pa.B. 1950]
[Saturday, April 8, 2023]

THE PENNSYLVANIA CLEAN STREAMS LAW AND THE FEDERAL CLEAN WATER ACT

APPLICATIONS FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS AND WATER QUALITY MANAGEMENT (WQM) PERMITS UNDER THE CLEAN STREAMS LAW AND FEDERAL CLEAN WATER ACT

This notice provides information about persons who have applied to the Department of Environmental Protection (DEP) for a new, renewed, or amended NPDES or WQM permit, or a permit waiver for certain stormwater discharges, or have submitted a Notice of Intent (NOI) for coverage under a General Permit. The applications and NOIs concern, but are not limited to, effluent discharges from sewage treatment facilities and industrial facilities to surface waters or groundwater; stormwater discharges associated with industrial activity (industrial stormwater), construction activity (construction stormwater), and municipal separate storm sewer systems (MS4s); the application of pesticides; the operation of Concentrated Animal Feeding Operations (CAFOs); and the construction of sewage, industrial waste, and manure storage, collection and treatment facilities. This notice is provided in accordance with 25 Pa. Code Chapters 91 and 92a and 40 CFR Part 122, implementing The Clean Streams Law (35 P.S. §§ 691.1—691.1001) and the Federal Clean Water Act (33 U.S.C.A. §§ 1251—1376). More information on the types of NPDES and WQM permits that are available can be found on DEP's website (visit www.dep.pa.gov and select Businesses, Water, Bureau of Clean Water, Wastewater Management, and NPDES and WQM Permitting Programs).

PA0025941, Sewage, SIC Code 4952, **Canonsburg Houston Joint Authority**, 68 E Pike Street, Canonsburg, PA 15317-1375. Facility Name: Canonsburg Houston Joint WWTP. This existing facility is located in Cecil Township, **Washington County**.

Description of Existing Activity: The application is for a renewal of an NPDES permit for an existing discharge of treated sewage.

The receiving stream(s), Chartiers Creek (WWF), is located in State Water Plan watershed 20-F and is classified for Warm Water Fishes, aquatic life, water supply and recreation. The discharge is not expected to affect public water supplies.

The proposed effluent limits for Outfall 001 are based on a design flow of 8.4 MGD.—Interim Limits.

	Mass Units (lbs/day)			*Concentrations (mg/L)*		
Parameters	**Average Monthly**	***Daily Maximum***	***Minimum***	**Average Monthly**	***Daily Maximum***	***IMAX***
Ammonia-Nitrogen						
Nov 1 - Apr 30	350.7	526.1 Wkly Avg	XXX	7.0	10.5 Wkly Avg	14
May 1 - Oct 31	175.4	265.5 Wkly Avg	XXX	3.5	5.3 Wkly Avg	7
Copper, Total (ug/L)	Report	Report	XXX	Report	Report	XXX
Cyanide, Free (ug/L)	Report	Report	XXX	Report	Report	XXX
Mercury, Total (ug/L)	Report	Report	XXX	Report	Report	XXX
Chloroform	Report	Report	XXX	Report	Report	XXX

The proposed effluent limits for Outfall 001 are based on a design flow of 8.4 MGD.—Final Limits.

	Mass Units (lbs/day)			*Concentrations (mg/L)*		
Parameters	**Average Monthly**	***Daily Maximum***	***Minimum***	**Average Monthly**	***Daily Maximum***	***IMAX***
Ammonia-Nitrogen						
Nov 1 - Apr 30	313.1	469.7 Wkly Avg	XXX	4.47	6.70 Wkly Avg	8.94
May 1 - Oct 31	151.3	226.9 Wkly Avg	XXX	2.16	3.24 Wkly Avg	4.32
Copper, Total (ug/L)	1.3	1.78	XXX	18.5	25.4	25.4
Cyanide, Free (ug/L)	0.32	0.59	XXX	4.62	8.49	11.5
Mercury, Total (ug/L)	0.004	0.007	XXX	0.058	0.11	0.14
Chloroform (ug/L)	0.46	0.85	XXX	6.58	12.1	16.4

The proposed effluent limits for Outfall 001 are based on a design flow of 8.4 MGD.—Limits.

	Mass Units (lbs/day)		*Concentrations (mg/L)*			
Parameters	**Average Monthly**	*Daily Maximum*	*Daily Minimum*	**Average Monthly**	*Daily Maximum*	*IMAX*
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)						
Nov 1 - Apr 30	1,400	2,100 Wkly Avg	XXX	20.0	30.0 Wkly Avg	40
May 1 - Oct 31	840	1,260 Wkly Avg	XXX	12.0	18.0 Wkly Avg	24
Biochemical Oxygen Demand (BOD_5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX
Total Suspended Solids	2,100.0	3,150.0 Wkly Avg	XXX	30.0	45.0 Wkly Avg	60
Fecal Coliform (No./100 ml)						
Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000
May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000

E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX
Boron, Total (ug/L)	Report	Report	XXX	Report	Report	XXX
Iron, Dissolved (ug/L)	Report	Report	XXX	Report	Report	XXX
Iron, Total (ug/L)	Report	Report	XXX	Report	Report	XXX
Zinc, Total (ug/L)	Report	Report	XXX	Report	Report	XXX
Chlorodibromomethane (ug/L)	Report	Report	XXX	Report	Report	XXX
Dichlorobromomethane (ug/L)	Report	Report	XXX	Report	Report	XXX
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX
Manganese, Total	XXX	XXX	XXX	XXX	Report	XXX

Following major conditions have been added to the permit:

- A compliance schedule for ammonia-nitrogen in Part C.V.A.
- A compliance schedule for total copper, free cyanide, total mercury, and chloroform in Part C.IV.D.

You may make an appointment to review the DEP files on this case by calling the File Review Coordinator at 412-442-4000.

The EPA Waiver is not in effect.

ATTACHMENT B

EPA Comment Letter

Conrad, Stephanie

From: Fulton, Jennifer <Fulton.Jennifer@epa.gov>
Sent: Wednesday, April 26, 2023 4:17 PM
To: Conrad, Stephanie
Cc: Iasmin, Mahbuba; Furjanic, Sean; Schumack, Maria; Martinsen, Jessica; Hales, Dana; Martino, Leah
Subject: [External] Canonsburg Houston Joint WWTP

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown senders. To report suspicious email, use the Report Phishing button in Outlook.*

Hello Stephanie,

According to the Memorandum of Agreement (MOA) between the U.S. Environmental Protection Agency Region III (EPA) and the Pennsylvania Department of Environmental Protection (PADEP), the EPA is reviewing a draft National Pollutant Discharge Elimination System (NPDES) permit for:

Draft Permit: Canonsburg Houston Joint WWTP
NPDES Number: PA0025941
EPA-received: March 28, 2023
30-day Response: April 27, 2023

This is a major permit that discharges to the Chartiers Creek, and is affected by the Chartiers Creek TMDL as well as the Chartiers Watershed TMDL. Therefore, EPA has performed a limited review of the draft permit based on the wasteload allocation (WLA) requirements of the approved Chartiers Creek and Chartiers Watershed TMDLs, Pretreatment requirements, as well as the Whole Effluent Toxicity (WET) testing requirements. Thank you for our April 14 correspondence and providing the WET Analysis Spreadsheets. EPA has completed its review and offers the following comment:

> The Chartiers Watershed TMDL addresses aluminum, iron, and manganese impairment due to acid mine drainage. The previous permit imposed a monitoring and reporting requirement for these three parameters. Page 22 of the fact sheet indicates that these requirements will again be imposed quarterly for this permit term. However, on page 27 of the fact sheet, the proposed monitoring requirements for Total Aluminum and Total Manganese are each listed as having a minimum measurement frequency of 1/year and Total Iron is listed as requiring monitoring 1/week. The same requirements are listed on page 5 of the permit. Can you explain these discrepancies?

Please address the above and provide EPA with any changes to the draft permit and/or fact sheet, if necessary. Please contact Leah Martino on my staff by email at martino.leah@epa.gov and/or by phone at (215) 814-3262.

Thank you,
Jen Fulton

Jennifer Fulton (she/her)
Acting Chief, Clean Water Branch
US EPA Mid-Atlantic Region

1

ATTACHMENT C

CHJA Comment Letter

GPI

Engineering | Design | Planning | Construction Management

May 1, 2023

PA Department of Environmental Protection
Bureau of Water Management
400 Waterfront Drive
Pittsburgh, PA 15222-4745

Attention: Mahbuba Iasmin, PhD., P.E.

Reference: Canonsburg Houston Joint Authority's Wastewater Treatment Facility
NPDES Permit No. PA0025941
Canonsburg, Washington County, PA

Dear Dr. Iasmin:

On behalf of the Canonsburg Houston Joint Authority (CHJA or the Authority), we are offering comments on the Department's draft NPDES Permit No. PA0025941 for the Authority's discharge from their existing wastewater treatment facility:

1) CHJA finds the inclusion of both dichlorobromomethane and dibromochloromethane for weekly sampling to be arbitrary. On page 20 of the Department's NPDES Permit Fact Sheet, the Department stated that 9 out of ten samples were less than 0.5 ug/L (the Department's Limit of Quantification), and the only result above LOQ was suspected by the Department to be an "outlier". Unfortunately, the Department is requiring that the Authority collect an additional minimum of 104 samples (2 years of data) for each of these parameters before they can apply to be released from this burdensome and costly sampling. While the Department points out in the same section that these all these less than detect samples were collected from a system that was using chlorine disinfection, which was the source of these chlorine byproducts, little consideration was given to the fact that the Authority chlorine disinfection was replaced by ultra-violet (UV) for disinfection. There is no longer a justification for the Authority to continue to be subject to the expense associated with chlorine disinfection when the source of these two parameters has been discontinued.

2) CHJA also questions the inclusion of chloroform limits in the draft permit since chloroform is considered to be byproduct of chlorine disinfection in the family of VOCs as both dichlorobromomethane and dibromochloromethane. Similar to the chlorine byproducts that were collected on the same date that the Department discounted as suspected "outliers" (page 20 of the Department's NPDES Permit

Fact Sheet), the data from this date should have also been discarded from the data set. The TOXCONC_VER2.0 average of the nine (9) remaining samples was 1.78 ug/L (CV = 0.366), which is only 27 percent of the 6.58 ug/L AML, and should not require a limit. Especially when you consider that each of these samples were collected prior to the Authority discontinuing the use of chlorine for disinfection. The source of the potential to form chlorine byproducts, such as chloroform, has been removed.

While the PA DEP has mentioned in prior comments that chloroform should continue to be included as a sampling parameter since it was present in an influent sample in 2020, we find that justification does not carry much weight when you consider that chloroform is listed in the PA DEP's guidance document "Protocol for Estimating First Order Pollutant Fate Coefficients for Volatile Organic Substances" (391-2000-020) in Table 1 as being a "Highly Volatile Compound" and so is unlikely to be present throughout the highly turbulent vortex grit chamber, clarifiers (primary and final) and biotowers, before ever reaching the UV disinfection and discharge. The inclusion of chloroform limits and the high costs for sampling weekly should be reconsidered and removed. This permit limit is unnecessary and costly, since it would require a major permit amendment, and an additional $10,000 permit amendment fee to have it removed from the permit prior to the end of its five-year (plus) life span. It should also be pointed out that in the event that this limit does go forward and a permit amendment application will be necessary, it is often an additional year before the permit is actually amended and the limit based on one bad data point can be removed, incurring more unreasonable costs.

3) The Authority disputes the perceived necessity to include either total boron or total iron sampling at the sampling frequency of once per week, since the maximum concentrations in the permit application were 15 percent and 12 percent of their AMLs, respectively. Regardless of the SOP manual stipulation that sampling for these parameters should reflect the frequency of other parameters with permit limits, it is absurd to require the Authority to collect and analyze a total of 260 samples during the life of the Authority's permit for these parameters. It represents an unreasonable expense for the Authority with no reasonable potential to cause harm to the resource. As with other "monitor only" parameters, the Department should clearly specify directly that the removal of these requirements would be a minor amendment to the permit, rather than a major amendment to the permit which would require a $10,000 permit amendment fee.

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4) The Authority continues to question the Department's changes in $CBOD_5$ discharge modeling was arbitrary and may lead to significant future unnecessary compliance issues. Prior to undertaking our recent upgrades to our wastewater treatment facility, the Department was asked to provide preliminary discharge limits and these were provided by the Department in correspondence dated April 30, 2019. These preliminary limits were referred to and utilized in the subsequent WQM Permit 6374406 application submitted on October 25, 2019 and approved on January 27, 2020. In October 2022, the Department had completely revamped the modeling structure and data inputs to significantly reduce the projected $CBOD_5$ limits. Even though the changes in the modeling structure and inputs appears arbitrary on the Department's part, once these new limits are in place, it will take a permit amendment to have them changed back before the US EPA's anti-backsliding rule is engaged.

5) The Department's new modeling for CBOD5 indicates that the summer 30-day average permit limit should be set at 12.96 mg/L, and winter 30-day average permit limit should be set at 21.2 mg/L. Regardless of the Department's SOP language that fosters severely rounding down limits, the limit should be 12.9 mg/L and 21.2 mg/L, for summer and winter, respectively. The model results show that these are the lowest limits that are justifiable and defensible. While in the past, $CBOD_5$ results may have only been reported in whole numbers (so rounding down may have made sense numerically), the typical daily effluent samples for $CBOD_5$ results are reported to the tenth of a mg/L, the limit should be set to the appropriate limit backed by actual modeling results.

If you have any questions, please contact our office.

Sincerely,

GREENMAN-PEDERSEN, INC

Diane Altland

Diane Altland, P.E.

cc: Canonsburg Houston Joint Authority

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ATTACHMENT D

Dixon's Test Results

Date	Value	Translated Value	Data Point
08/27/20	0.5	3.16227766	1
09/21/20	0.5	3.16227766	2
05/09/22	0.67	4.677351413	3
04/11/22	1.3	19.95262315	4
04/18/22	1.4	25.11886432	5
04/25/22	1.41	25.70395783	6
03/28/22	1.81	64.5654229	7
05/02/22	2.12	131.8256739	8
04/04/22	2.15	141.2537545	9
09/09/20	19.5	3.16228E+19	10

Dixon's Test Statistic
1

TABLE A-3: CRITICAL VALUES FOR THE EXTREME VALUE TEST (DIXON'S TEST)

	Level of Significance α		
n	0.10	0.05	0.01
3	0.886	0.941	0.988
4	0.679	0.765	0.889
5	0.557	0.642	0.780
6	0.482	0.560	0.698
7	0.434	0.507	0.637
8	0.479	0.554	0.683
9	0.441	0.512	0.635
10	0.409	0.477	0.597
11	0.517	0.576	0.679
12	0.490	0.546	0.642
13	0.467	0.521	0.615
14	0.492	0.546	0.641
15	0.472	0.525	0.616
16	0.454	0.507	0.595
17	0.438	0.490	0.577
18	0.424	0.475	0.561
19	0.412	0.462	0.547
20	0.401	0.450	0.535
21	0.391	0.440	0.524
22	0.382	0.430	0.514
23	0.374	0.421	0.505
24	0.367	0.413	0.497
25	0.360	0.406	0.489

ATTACHMENT E

TMS Model Output

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Canonsburg Houston Joint WWTP** NPDES Permit No.: **PA0025941** Outfall No.: **001**

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
8.4	202	6.8	1	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		590									
	Chloride (PWS)	mg/L		101									
	Bromide	mg/L		0.15									
	Sulfate (PWS)	mg/L		137									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		24									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L		0.7									
	Total Barium	µg/L		46									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		280									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	4									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L		17.4167955			0.3735						
	Free Cyanide	µg/L		9.744722			1.069						
	Total Cyanide	µg/L		18									
	Dissolved Iron	µg/L		108.15643			0.2383						
	Total Iron	µg/L		210									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		26									
	Total Mercury	µg/L		2.2655801			1.248						
	Total Nickel	µg/L	<	4									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	µg/L		81.6087579			0.3171						
	Total Molybdenum	µg/L		8									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5										
	Chlorobenzene	µg/L	<	0.5										
	Chlorodibromomethane	µg/L		0.5										
	Chloroethane	µg/L	<	0.5										
	2-Chloroethyl Vinyl Ether	µg/L	<	5										
	Chloroform	µg/L		1.405										
	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	<	2										
	Ethylbenzene	µg/L	<	0.5										
	Methyl Bromide	µg/L	<	0.5										
	Methyl Chloride	µg/L	<	0.5										
	Methylene Chloride	µg/L		0.7										
	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	<	10										
	2,4-Dichlorophenol	µg/L	<	10										
	2,4-Dimethylphenol	µg/L	<	10										
	4,6-Dinitro-o-Cresol	µg/L	<	10										
	2,4-Dinitrophenol	µg/L	<	10										
	2-Nitrophenol	µg/L	<	10										
	4-Nitrophenol	µg/L	<	10										
	p-Chloro-m-Cresol	µg/L	<	10										
	Pentachlorophenol	µg/L	<	10										
	Phenol	µg/L	<	10										
	2,4,6-Trichlorophenol	µg/L	<	10										
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	<	5										
	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	<	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	<	10										
	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	<	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	<	0.02										
	alpha-BHC	µg/L	<	0.02										
	beta-BHC	µg/L	<	0.02										
	gamma-BHC	µg/L	<	0.02										
	delta BHC	µg/L	<	0.02										
	Chlordane	µg/L	<	0.5										
	4,4-DDT	µg/L	<	0.02										
	4,4-DDE	µg/L	<	0.02										
	4,4-DDD	µg/L	<	0.02										
	Dieldrin	µg/L	<	0.02										
	alpha-Endosulfan	µg/L	<	0.02										
	beta-Endosulfan	µg/L	<	0.02										
	Endosulfan Sulfate	µg/L	<	0.02										
	Endrin	µg/L	<	0.02										
	Endrin Aldehyde	µg/L	<	0.02										
	Heptachlor	µg/L	<	0.02										
	Heptachlor Epoxide	µg/L	<	0.02										
	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	<	0.5										
	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 1.3, March 2021

Stream / Surface Water Information

Canonsburg Houston Joint WWTP, NPDES Permit No. PA0025941, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Chartier's 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	036777	26.82	960	87.5			Yes
End of Reach 1	036777	24.17	948	139			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	26.82	0.0229				59.11	0.821	0.31				100	7		
End of Reach 1	24.17	0.0229													

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	26.82														
End of Reach 1	24.17														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Canonsburg Houston Joint WWTP, NPDES Permit No. PA0025941, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 3.923 PMF: 1 Analysis Hardness (mg/l): 188.37 Analysis pH: 6.82

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	866	
Total Antimony	0	0		0	1,100	1,100	1,270	
Total Arsenic	0	0		0	340	340	392	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	24,238	
Total Boron	0	0		0	8,100	8,100	9,349	
Total Cadmium	0	0		0	3.726	4.06	4.69	Chem Translator of 0.918 applied
Total Chromium (III)	0	0		0	957.051	3,029	3,496	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	18.8	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	110	
Total Copper	0	0		0	24.406	25.4	29.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	25.4	
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	127.743	183	211	Chem Translator of 0.699 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	800.075	802	925	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	9.560	11.2	13.0	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	75.0	
Total Zinc	0	0		0	200.391	205	236	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.46	

Acrylonitrile	0	0		0	650	650	750	
Benzene	0	0		0	640	640	739	
Bromoform	0	0		0	1,800	1,800	2,078	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,232	
Chlorobenzene	0	0		0	1,200	1,200	1,385	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	20,776	
Chloroform	0	0		0	1,900	1,900	2,193	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	17,313	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,656	
1,2-Dichloropropane	0	0		0	11,000	11,000	12,696	
1,3-Dichloropropylene	0	0		0	310	310	358	
Ethylbenzene	0	0		0	2,900	2,900	3,347	
Methyl Bromide	0	0		0	550	550	635	
Methyl Chloride	0	0		0	28,000	28,000	32,317	
Methylene Chloride	0	0		0	12,000	12,000	13,850	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,154	
Tetrachloroethylene	0	0		0	700	700	808	
Toluene	0	0		0	1,700	1,700	1,962	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,849	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,463	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,924	
Trichloroethylene	0	0		0	2,300	2,300	2,655	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	646	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,962	
2,4-Dimethylphenol	0	0		0	660	660	762	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	92.3	
2,4-Dinitrophenol	0	0		0	660	660	762	
2-Nitrophenol	0	0		0	8,000	8,000	9,234	
4-Nitrophenol	0	0		0	2,300	2,300	2,655	
p-Chloro-m-Cresol	0	0		0	160	160	185	
Pentachlorophenol	0	0		0	7.294	7.29	8.42	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	531	
Acenaphthene	0	0		0	83	83.0	95.8	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	346	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.58	
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	34,626	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,194	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	312	
Butyl Benzyl Phthalate	0	0		0	140	140	162	

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	946	
1,3-Dichlorobenzene	0	0		0	350	350	404	
1,4-Dichlorobenzene	0	0		0	730	730	843	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,617	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,885	
Di-n-Butyl Phthalate	0	0		0	110	110	127	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,847	
2,6-Dinitrotoluene	0	0		0	990	990	1,143	
1,2-Diphenylhydrazine	0	0		0	15	15.0	17.3	
Fluoranthene	0	0		0	200	200	231	
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	11.5	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.77	
Hexachloroethane	0	0		0	60	60.0	69.3	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	11,542	
Naphthalene	0	0		0	140	140	162	
Nitrobenzene	0	0		0	4,000	4,000	4,617	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	19,621	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	346	
Phenanthrene	0	0		0	5	5.0	5.77	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	150	
Aldrin	0	0		0	3	3.0	3.46	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	1.1	
Chlordane	0	0		0	2.4	2.4	2.77	
4,4-DDT	0	0		0	1.1	1.1	1.27	
4,4-DDE	0	0		0	1.1	1.1	1.27	
4,4-DDD	0	0		0	1.1	1.1	1.27	
Dieldrin	0	0		0	0.24	0.24	0.28	
alpha-Endosulfan	0	0		0	0.22	0.22	0.25	
beta-Endosulfan	0	0		0	0.22	0.22	0.25	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.099	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	0.6	
Heptachlor Epoxide	0	0		0	0.5	0.5	0.58	
Toxaphene	0	0		0	0.73	0.73	0.84	

☑ *CFC* CCT (min): 3.923 PMF: 1 Analysis Hardness (mg/l): 188.37 Analysis pH: 6.82

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	254	
Total Arsenic	0	0		0	150	150	173	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,732	
Total Boron	0	0		0	1,600	1,600	1,847	
Total Cadmium	0	0		0	0.382	0.43	0.5	Chem Translator of 0.883 applied
Total Chromium (III)	0	0		0	124.493	145	167	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	12.0	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	21.9	
Total Copper	0	0		0	15.385	16.0	18.5	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	6.0	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,731	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	4.978	7.12	8.22	Chem Translator of 0.699 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.05	Chem Translator of 0.85 applied
Total Nickel	0	0		0	88.864	89.1	103	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	5.76	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	15.0	
Total Zinc	0	0		0	202.030	205	236	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.46	
Acrylonitrile	0	0		0	130	130	150	
Benzene	0	0		0	130	130	150	
Bromoform	0	0		0	370	370	427	
Carbon Tetrachloride	0	0		0	560	560	646	
Chlorobenzene	0	0		0	240	240	277	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	4,040	
Chloroform	0	0		0	390	390	450	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,578	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,731	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,539	
1,3-Dichloropropylene	0	0		0	61	61.0	70.4	
Ethylbenzene	0	0		0	580	580	669	
Methyl Bromide	0	0		0	110	110	127	
Methyl Chloride	0	0		0	5,500	5,500	6,348	

Methylene Chloride	0	0		0	2,400	2,400	2,770	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	242	
Tetrachloroethylene	0	0		0	140	140	162	
Toluene	0	0		0	330	330	381	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,616	
1,1,1-Trichloroethane	0	0		0	610	610	704	
1,1,2-Trichloroethane	0	0		0	680	680	785	
Trichloroethylene	0	0		0	450	450	519	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	127	
2,4-Dichlorophenol	0	0		0	340	340	392	
2,4-Dimethylphenol	0	0		0	130	130	150	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	18.5	
2,4-Dinitrophenol	0	0		0	130	130	150	
2-Nitrophenol	0	0		0	1,600	1,600	1,847	
4-Nitrophenol	0	0		0	470	470	542	
p-Chloro-m-Cresol	0	0		0	500	500	577	
Pentachlorophenol	0	0		0	5.596	5.6	6.46	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	105	
Acenaphthene	0	0		0	17	17.0	19.6	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	68.1	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.12	
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	6,925	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,050	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	62.3	
Butyl Benzyl Phthalate	0	0		0	35	35.0	40.4	
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	185	
1,3-Dichlorobenzene	0	0		0	69	69.0	79.6	
1,4-Dichlorobenzene	0	0		0	150	150	173	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	923	
Dimethyl Phthalate	0	0		0	500	500	577	
Di-n-Butyl Phthalate	0	0		0	21	21.0	24.2	
2,4-Dinitrotoluene	0	0		0	320	320	369	
2,6-Dinitrotoluene	0	0		0	200	200	231	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.46	

Fluoranthene	0	0		0	40	40.0	46.2	
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	2.31	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.15	
Hexachloroethane	0	0		0	12	12.0	13.9	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,424	
Naphthalene	0	0		0	43	43.0	49.6	
Nitrobenzene	0	0		0	810	810	935	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,924	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	68.1	
Phenanthrene	0	0		0	1	1.0	1.15	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	30.0	
Aldrin	0	0		0	0.1	0.1	0.12	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	0.005	
4,4-DDT	0	0		0	0.001	0.001	0.001	
4,4-DDE	0	0		0	0.001	0.001	0.001	
4,4-DDD	0	0		0	0.001	0.001	0.001	
Dieldrin	0	0		0	0.056	0.056	0.065	
alpha-Endosulfan	0	0		0	0.056	0.056	0.065	
beta-Endosulfan	0	0		0	0.056	0.056	0.065	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	0.042	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.004	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.004	
Toxaphene	0	0		0	0.0002	0.0002	0.0002	

☑ ***THH*** CCT (min): 3.923 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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.46	
Total Arsenic	0	0		0	10	10.0	11.5	
Total Barium	0	0		0	2,400	2,400	2,770	

Total Boron	0	0		0	3,100	3,100	3,578	
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	4.62	
Dissolved Iron	0	0		0	300	300	346	
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	1,154	
Total Mercury	0	0		0	0.050	0.05	0.058	
Total Nickel	0	0		0	610	610	704	
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	0.28	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.46	
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	115	
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	6.58	
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	38.1	
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	78.5	
Methyl Bromide	0	0		0	100	100.0	115	
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	65.8	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	115	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	11,542	
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	34.6	

2,4-Dichlorophenol	0	0		0	10	10.0	11.5	
2,4-Dimethylphenol	0	0		0	100	100.0	115	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.31	
2,4-Dinitrophenol	0	0		0	10	10.0	11.5	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,617	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	80.8	
Anthracene	0	0		0	300	300	346	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	231	
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	0.12	
2-Chloronaphthalene	0	0		0	800	800	923	
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	1,154	
1,3-Dichlorobenzene	0	0		0	7	7.0	8.08	
1,4-Dichlorobenzene	0	0		0	300	300	346	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	693	
Dimethyl Phthalate	0	0		0	2,000	2,000	2,308	
Di-n-Butyl Phthalate	0	0		0	20	20.0	23.1	
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	23.1	
Fluorene	0	0		0	50	50.0	57.7	
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	4.62	
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	39.2	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	11.5	

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	23.1	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.081	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	4.85	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	23.1	
beta-Endosulfan	0	0		0	20	20.0	23.1	
Endosulfan Sulfate	0	0		0	20	20.0	23.1	
Endrin	0	0		0	0.03	0.03	0.035	
Endrin Aldehyde	0	0		0	1	1.0	1.15	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 39.464 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	

Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.12	
Benzene	0	0		0	0.58	0.58	1.19	
Bromoform	0	0		0	7	7.0	14.3	
Carbon Tetrachloride	0	0		0	0.4	0.4	0.82	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	1.64	
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	1.95	
1,2-Dichloroethane	0	0		0	9.9	9.9	20.3	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	1.84	
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.55	
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	41.0	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.41	
Tetrachloroethylene	0	0		0	10	10.0	20.5	
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	1.13	
Trichloroethylene	0	0		0	0.6	0.6	1.23	
Vinyl Chloride	0	0		0	0.02	0.02	0.041	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.061	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	3.07	

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	0.0002	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.002	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0002	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.002	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.02	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.061	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.66	
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	0.25	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0002	
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	0.1	
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	0.1	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.1	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.061	
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	0.0002	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.02	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.002	
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	0.001	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.01	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	6.76	
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	
Aldrin	0	0		0	0.0000008	8.00E-07	0.000002	
alpha-BHC	0	0		0	0.0004	0.0004	0.0008	
beta-BHC	0	0		0	0.008	0.008	0.016	
gamma-BHC	0	0		0	N/A	N/A	N/A	

Chlordane	0	0		0	0.0003	0.0003	0.0006	
4,4-DDT	0	0		0	0.00003	0.00003	0.00006	
4,4-DDE	0	0		0	0.00002	0.00002	0.00004	
4,4-DDD	0	0		0	0.0001	0.0001	0.0002	
Dieldrin	0	0		0	0.000001	0.000001	0.000002	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.00001	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.00006	
Toxaphene	0	0		0	0.0007	0.0007	0.001	

☑ ***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	1,847	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	1.3	1.78	18.5	25.4	25.4	µg/L	18.5	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Free Cyanide	0.32	0.59	4.62	8.49	11.5	µg/L	4.62	THH	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	346	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,731	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Mercury	0.004	0.007	0.058	0.11	0.14	µg/L	0.058	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	205	AFC	Discharge Conc > 10% WQBEL (no RP)
Chlorodibromomethane	Report	Report	Report	Report	Report	µg/L	1.64	CRL	Discharge Conc > 25% WQBEL (no RP)
Dichlorobromomethane	Report	Report	Report	Report	Report	µg/L	1.95	CRL	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 WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	750	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	11.5	µg/L	Discharge Conc ≤ 10% WQBEL

Total Barium	2,770	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	0.5	µg/L	Discharge Conc < TQL
Total Chromium (III)	167	µg/L	Discharge Conc < TQL
Hexavalent Chromium	12.0	µg/L	Discharge Conc < TQL
Total Cobalt	21.9	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Total Lead	8.22	µg/L	Discharge Conc < TQL
Total Manganese	1,154	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	103	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	5.76	µg/L	Discharge Conc < TQL
Total Silver	11.2	µg/L	Discharge Conc < TQL
Total Thallium	0.28	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.12	µg/L	Discharge Conc < TQL
Benzene	1.19	µg/L	Discharge Conc < TQL
Bromoform	14.3	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	0.82	µg/L	Discharge Conc < TQL
Chlorobenzene	115	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	4,040	µg/L	Discharge Conc < TQL
Chloroform	6.58	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	20.3	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	38.1	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	1.84	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.55	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	78.5	µg/L	Discharge Conc < TQL
Methyl Bromide	115	µg/L	Discharge Conc < TQL
Methyl Chloride	6,348	µg/L	Discharge Conc < TQL
Methylene Chloride	41.0	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	0.41	µg/L	Discharge Conc < TQL
Tetrachloroethylene	20.5	µg/L	Discharge Conc < TQL
Toluene	65.8	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	115	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	704	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	1.13	µg/L	Discharge Conc < TQL
Trichloroethylene	1.23	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.041	µg/L	Discharge Conc < TQL
2-Chlorophenol	34.6	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	11.5	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	115	µg/L	Discharge Conc < TQL

4,6-Dinitro-o-Cresol	2.31	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	11.5	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,847	µg/L	Discharge Conc < TQL
4-Nitrophenol	542	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.061	µg/L	Discharge Conc < TQL
Phenol	4,617	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	3.07	µg/L	Discharge Conc < TQL
Acenaphthene	19.6	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	346	µg/L	Discharge Conc < TQL
Benzidine	0.0002	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.002	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0002	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.002	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.02	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.061	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	231	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	0.66	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	62.3	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.12	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	923	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.25	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0002	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	185	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	8.08	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	173	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.1	µg/L	Discharge Conc < TQL
Diethyl Phthalate	693	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	577	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	23.1	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.1	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.1	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.061	µg/L	Discharge Conc < TQL
Fluoranthene	23.1	µg/L	Discharge Conc < TQL
Fluorene	57.7	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0002	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.02	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.15	µg/L	Discharge Conc < TQL
Hexachloroethane	0.2	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.002	µg/L	Discharge Conc < TQL

Isophorone	39.2	µg/L	Discharge Conc < TQL
Naphthalene	49.6	µg/L	Discharge Conc < TQL
Nitrobenzene	11.5	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.001	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.01	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	6.76	µg/L	Discharge Conc < TQL
Phenanthrene	1.15	µg/L	Discharge Conc < TQL
Pyrene	23.1	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.081	µg/L	Discharge Conc < TQL
Aldrin	0.000002	µg/L	Discharge Conc < TQL
alpha-BHC	0.0008	µg/L	Discharge Conc < TQL
beta-BHC	0.016	µg/L	Discharge Conc < TQL
gamma-BHC	0.95	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.0006	µg/L	Discharge Conc < TQL
4,4-DDT	0.00006	µg/L	Discharge Conc < TQL
4,4-DDE	0.00004	µg/L	Discharge Conc < TQL
4,4-DDD	0.0002	µg/L	Discharge Conc < TQL
Dieldrin	0.000002	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.065	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.065	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	23.1	µg/L	Discharge Conc < TQL
Endrin	0.035	µg/L	Discharge Conc < TQL
Endrin Aldehyde	1.15	µg/L	Discharge Conc < TQL
Heptachlor	0.00001	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.00006	µg/L	Discharge Conc < TQL
Toxaphene	0.0002	µg/L	Discharge Conc < TQL