pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026026**
Facility Type	**Municipal**	APS ID	**1082413**
Major / Minor	**Major**	Authorization ID	**1429339**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**New Brighton Borough Sanitary Authority Beaver County**	Facility Name	**New Brighton Borough Sanitary Authority**
Applicant Address	610 3rd Avenue New Brighton, PA 15066-1851	Facility Address	2200 Concord Street New Brighton, PA 15066-2409
Applicant Contact	Thomas Albanese	Facility Contact	Keith McKeel
Applicant Phone	(724) 846-1870	Facility Phone	724-846-1870
Client ID	23994	Site ID	443360
Ch 94 Load Status	Not Overloaded	Municipality	New Brighton Borough
Connection Status	No Limitations	County	Beaver
Date Application Received	February 24, 2023	EPA Waived?	No
Date Application Accepted	March 6, 2023	If No, Reason	Major Facility

Purpose of Application: NPDES Permit Renewal for Discharge of Treated Sewage Effluent.

Summary of Review

This application is for a renewal of NPDES Permit PA0026026. NPDES Permit PA0026026 was last issued on August 3rd, 2018 and authorized a discharge of 2.0 MGD from the New Brighton Sanitary Authority (NBSA) WWTP to the Beaver River. The Beaver River is classified as WWF at the point of discharge, and it's 1.65 miles away from the Ohio River mouth.

The renewal application was submitted to the Department on February 24, 2023, which was considered timely, the NPDES permit expired on August 31, 2023.

WQM No.0484408 approved the construction of this facility that consists of:

Bar screen/Grit chamber followed by primary settling (2 process tanks), an oxidation tower, secondary settling (three tanks in parallel), two parallel chlorine contact tanks.

The New Brighton sewer system is fully separated; no CSOs within the system.

An appropriate evidence of the Act – 14 PL 834 Municipal Notification was provided by 05/17/2022 letters, and no comments were received.

Anti-Backsliding

The applicant is not seeking to revise the previously permitted effluent limits.

Approve	Deny	Signatures	Date
X		Hazim Aldalli Hazim Aldalli / Environmental Engineering Specialist	March 05, 2024
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D. P.E. / Environmental Engineering Manager	May 10, 2024

Summary of Review

Industrial User

The sewage treatment plant receives industrial sewage from one facility (Creekside Springs) a bottled water company. The application listed this user as a non-significant categorical user (NSCIU). This user has not been known or suspected source of upsets, pass through, or interference to the STP. This user is not implementing an approved pretreatment program per application and reviewed CH94 reports. This industry falls under SIC code of 2086, which is not a PFAS contributor or a suspected source per EPA's document "*Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs, December 5, 2022*".

Compliance Review

NPDES Permit Effluent Limits

- Fecal Coliform limits violations were checked several times per the Operations compliance report (attached to this factsheet, see page 6), and per the reviewed eDMRs for 2019-2022. The facility justified these exceedances due to lowering the Chlorine dosage, later the facility stated that they rolled back their dosage to normal concentration. eDMRs for 2023 showed that the facility was in compliance for TRC and Fecal Coliform.

NPDES Permit Special Conditions

- Peak flow management: Applicant submitted a peak flow management plan due to excessive wet weather and in situ flood hazards. The plan was reviewed and found to be adequate for the major facilities and in compliance per DEP's SOP-3800-PM-BCW0009a Rev. 8/2021. The facility is required to continue implementation of the plan.

- Bypass and Sewer Overflow: The bypass and sewer overflow events will need to be managed according to the requirements set forth in Part B.C.4.g of the renewed permit and have to be reported within the CH94 annual report. The applicant submitted a general Standard Operating Procedure (SOP) for such events.

- Stormwater Management: The applicant requested to authorize Outfall 010 to be permitted again as a stormwater outfall. Per the current permit under Part C.IV.B, the permittee submitted a Preparedness, Prevention and Contingency (PPC) Plan to the Department on August 24, 2018. The permit writer reviewed this plan and found that this plan is in compliance with the Department's regulations and SOPs related to stormwater management and the current permit requirements referenced. The facility is required to continue implementation of the plan.

Sludge use and disposal description and location(s): Raw sludge is directed to a two stages anerobic digestion system for stabilization. Sludge can be thickened between the digestion stages, but this is usually not the case. A screw press dewaters the stabilized sludge which is then landfilled by an approved contracted hauler. Last year total sewage sludge/biosolids production within the facility is 63.04 Dry Tons. Land application is a process permitted by DEP under PADEP Permit No. 100172. The permitted site called Arden Landfill is owned and operated by Waste Management in Washington, PA.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	2.0
Latitude	40º 43' 8.72"	Longitude	-80º 18' 19.38"
Quad Name	Beaver	Quad Code	40080F3
Wastewater Description:	Treated Sewage Effluent		
Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918446	RMI	1.65
Drainage Area	3130	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	USACE records on Dec.1, 2017.
Elevation (ft)	1127	Slope (ft/ft)	0.00004
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired; Fish consumption		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBs), Chlordane, Organics		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Beaver River

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Center Township Water Authority.		
PWS Waters	Ohio River	Flow at Intake (cfs)	5880
PWS RMI	13.0	Distance from Outfall (mi)	3.75

Changes Since Last Permit Issuance:

- Q7-10 flow, elevation, drainage area, and low flow yield were all updated to match USGS Stream Stats new data and USACE records (see Appendix A).
- DEP updated its WQM 7.0 criteria for Ammonia-Nitrogen (NH_3-N) on 2019, limits and conditions of this permit need to be redeveloped to an adequate level to protect water quality.
- *E. Coli* monitoring requirements will be introduced to this renewal which is in compliance with DEP SOP No. BCW-PMT-033 revised February 5, 2024.

Other Comments: Per PA eMAP, the receiving stream attained its uses for potable water supply.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010	Design Flow (MGD)	0
Latitude	40º 43' 4.86"	Longitude	-80º 18' 16.57"
Quad Name	Beaver	Quad Code	40080F3
Wastewater Description:	Stormwater		

Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918446	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBs), Chlordane and Organics		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Beaver River

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: The permittee submitted a Preparedness, Prevention and Contingency (PPC) Plan to the Department on August 24, 2018. The PPC plan has been reviewed and appears sufficient.

Other Comments: This stormwater outfall is receiving stormwater flow generated from seven catch basins located near New Brighton STP, and other local stormwater that discharges to this outfall.

Treatment Facility Summary

Treatment Facility Name: New Brighton Borough Sanitary Authority STP

WQM Permit No.	Issuance Date
0484408-A1	February 18, 2004

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Gas Chlorine	0.873

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
2	4231	Not Overloaded	Anaerobic Digestion	Landfill

Changes Since Last Permit Issuance: None.

Other Comments: None.

Operations Compliance Check Summary Report

Facility: New Brighton Borough Sanitary Authority WWTP
NPDES Permit No.: PA0026026
Compliance Review Period: 6/1/2018-6/21/2023
Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
11/23/2022	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
11/29/2021	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
03/04/2020	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
07/09/2019	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
08/27/2018	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC
11/23/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit
07/09/2019	92A.44	NPDES - Violation of effluent limits in Part A of permit
08/27/2018	92A.44	NPDES - Violation of effluent limits in Part A of permit

Open Violations by Client ID:
No open violations for Client ID 23994
Enforcement Summary:

ENF ID	ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	ENF FINALSTATUS
410087	NOV	Notice of Violation	11/28/2022	92A.44	Comply/Closed
378253	NOV	Notice of Violation	08/16/2019	92A.44	Comply/Closed
368055	NOV	Notice of Violation	10/05/2018	92A.44	Administrative Close Out

Effluent Violation Summary:

MON PD END	PARAMETER	SAMPLE	PERMIT	UNIT	STAT BASE CODE	FACILITY COMMENTS
6/30/22	Fecal Coliform	5200	1000	No./100 ml	Instantaneous Maximum	With the increase of price and the supply issues of chlorine we attempted to lower the dose of chlorine yet still remain with a lower residual. We later saw that it was not working so we went back to normal dosing.
6/30/22	Fecal Coliform	740	200	No./100 ml	Geometric Mean	With the increase of price and the supply issues of chlorine we attempted to lower the dose of chlorine yet still remain with a lower residual. We later saw that it was not working so we went back to normal dosing.
5/31/19	Fecal Coliform	1560	1000	No./100 ml	Instantaneous Maximum	Flooding conditions at plant. We got 2.83 inches of rain in a short amount of time.

Compliance Status: Facility is currently in compliance with no open violations or pending enforcement.
Completed by: Amanda Schmidt
Completed date: 6/21/23

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 2.0
Latitude 40º 43' 8.72" **Longitude** -80º 18' 19.38"
Wastewater Description: Treated Sewage Effluent

Technology-Based Limitations

Discharge is to the Beaver River which is classified as a warm water fishery.

The NPDES permit application was evaluated based on applicable regulations, policies, procedures and guidelines.

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)	400 / 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)
D.O. (mg/L)	4.0	Min	-	BPJ
NH_3-N (mg/L)	25	Average Monthly	-	BPJ
	50	IMAX		
Total N (mg/L)	Report	Average Monthly	-	92a.61
Total P (mg/L)	Report	Average Monthly	-	92a.61
E. Coli (No./100 ml)	Report	IMAX	-	92a.61

Comments: The existing discharge was evaluated for $CBOD_5$, Ammonia-Nitrogen, and Dissolved Oxygen parameters using WQM 7.0, Version 1.1.

The Total Suspended Solids, pH, and Fecal Coliform parameters are not evaluated using WQM 7.0. The bases for the proposed technology-based limitations are listed in the above table.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached, see Appendices B, C, and D):

Parameter	Limit (mg/l)	SBC	Model
TRC	0.5	Average Monthly	DEP TRC
$CBOD_5$ (May1-Oct 31)	25	Average Monthly	WQM7.0
$CBOD_5$ (Nov 1- Apr 30)	25	Average Monthly	WQM7.0
NH_3-N (May1-Oct 31)	25	Average Monthly	WQM7.0
NH_3-N (Nov 1- Apr 30)	25	Average Monthly	WQM7.0
Dissolved Oxygen	4.0	Minimum	WQM7.0
3,3-Dichlorobenzidine	14.3	Average Monthly	DEP TMS

Based on the near vicinity of this discharge mixing zone to the Ohio River (1.65 miles), which developed an acute mixing zone and per ORSANCO "*Pollution Control Standards rev.* 2019" Section 3.2, in order to protect the aquatic life outside the mixing zone, the ORSANCO water quality criteria was considered while developing the permit effluent limits.

Using Beaver River section dimensions for the point of discharge (width and depth) as input values for the used model; DEP's Water Quality Model (WQM) 7.0, Version 1.1 generated a WQBELs for Dissolved Oxygen of 4.0 mg/L, which is less stringent than ORSANCO's Dissolved Oxygen water criteria of 5.0 mg/L; a minimum WQBEL of 5.0 mg/L should be maintained all the time.

Per DEP-SOP – *Establishing Effluent Limitations for Individual Sewage Permits* Revised, February 5, 2024, for existing discharges, if WQM modeling results for summer indicates that Ammonia-Nitrogen average monthly limit of 25 mg/L is acceptable, the application manager will generally establish a year-round monitoring requirement for Ammonia-Nitrogen, at a minimum. DEP WQM 7.0 ver. 1.1 suggests the newly imposed limit for Ammonia Nitrogen NH_3-N of 25.0 mg/L year-round. Checking on the Application and eDMRs; the facility can meet the newly imposed Ammonia and DO limits. Therefore, no compliance schedule is necessary.

WQM 7.0 generated $CBOD_5$ WQBEL year around limits of AML 25.0 mg/L, Weekly Average of 37.0 mg/L, and Ins. Max of 50.0 mg/L, these limits are matching the previous permit limits for $CBOD_5$.

Reasonable Potential

The Toxics Management Screening Analysis Spreadsheet (TMS rev. 1.4) was used to evaluate toxic parameters of concern for water quality modeling and to facilitate determinations of "reasonable potential" to cause an excursion above water quality standards with ORSANCO being considered. The maximum concentrations reported in the permit application for Groups 1-5 pollutants were evaluated (see Appendix D).

TMS model produced a total of one (1) WQBEL for 3,3-Dicholrobenzidine which was determined a potential parameter of concern. Permittee was asked to resample for 3,3-Dicholrobenzidine, four (4) additional samples were collected with one week apart. A follow-up analysis using TMS recommended no new limits or monitoring for 3,3-Dicholorobenzidine. Therefore, no monitoring or limits will be imposed for toxics during this renewal cycle.

Total Dissolved Solids (TDS) and its Major Constituents

Total Dissolved Solids (TDS) and its major constituents including sulfate, chloride, and bromide have emerged as pollutants of concern. The conservative nature of these solids allows them to accumulate in surface waters and they may remain a concern even if the immediate downstream public water supply is not directly impacted. Bromide has been linked to formation of disinfection byproducts at increased levels in public water systems.

Because of actions associated with Triennial Review 13, the Environmental Quality Board has directed DEP to collect additional data if the Bromide is greater than 1 mg/L (0.12 mg/L as of 2/24/2023) and the TDS is greater than 1000 mg/L (419 mg/L as of 2/24/2023) or the TDS exceeds 20,000 lbs/day (2724 lbs/day as of 2/24/2023).

Monitoring is not required for Bromide, Chloride, and Sulfate; Bromide is less than 1 mg/L.

Disinfection

The DEP TRC Calculation Sheet (see Appendix B) was used and generated a BAT average monthly limit of 0.5 mg/L. The current permit limits for TRC matches the calculated WQBEL; no compliance schedule is needed.

TN and TP Monitoring

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). Sewage discharges with design flows > 2,000 gpd require monitoring, at a minimum, for Total Nitrogen and Total Phosphorus in new and reissued permits.

No nutrient pollution indicated over Beaver River or through application, eDMRs, and PA eMAP's data; a frequency of 1/quarter is recommended for majors per Chapter 92.a.61.

Fecal Coliform and *E. Coli*

The 2019 ORSANCO's Final Standards made changes to Bacteria discharge requirements to include an *E. coli* bacteria limit of 130/100 ml as a 90-day geometric mean for the period April through October, and not to exceed 240/100 ml in more than 25% of the samples.

The following correlation analysis (Published on December 2006 by Ohio EPA/Division of Surface Water) 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 the 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 preventive than the 25% exceedance at 240/100 ml *E. coli*.

The treatment plant can meet the new stringent limits for Fecal Coliform as it achieved lower values through the reviewed DMRs; no compliance schedule is necessary.

Monthly monitoring will be imposed for *E. coli* per State Regulation 92a.61 and DEP SOP – *Establishing Effluent Limitations for Individual Sewage Permits* Revised, February 5, 2024.

Part C 136 will be added to the permit.

PFAS

Pursuant to 25 Pa. code § 92a.61(b), annual monitoring for PFAS will be imposed at Outfall 001 to determine if PFAS will be a pollutant of concern, which is consistent with DEP SOP No. BCW-PMT-033 revised March 24, 2021 under Section G.3.

The permittee shall conduct monitoring at its treatment plant that, at a minimum, includes annual effluent analysis for the four (4) PFAS parameters detectable by EPA Method 1633. Monitoring data for any analytes listed in EPA Method 1633 shall be summarized and submitted as part of the Annual Report.

Beaver River TMDL

Beaver River has an approved final TMDL for PCBs and Chlordane. This TMDL was based on the human fish consumption uses and the related health issues. After excessive research work been done on Ohio river fishes, the findings were documented as impaired waters in the Clean Water Act Section 303(d) List of Impaired Waters for 1996. They were listed because long-term, and unrestricted consumption of fish could potentially lead to human health problems.

The TMDL document states that the production and use of PCBs were banned in the US in July 1979 and the use of chlordane in the US has been banned since April 1980. Therefore, there are no new point sources for either of these pollutants. As a fact, existing point sources of PCBs and/or chlordane have obtained NPDES permits with WQBELs for those pollutants. PCBs and chlordane in the Beaver River are expected to be present primarily in the sediments due to

historic use and improper disposal practices. PCBs and chlordane contamination in the Ohio River is expected to be reduced through natural attenuation over time. The TMDL is monitoring the concentrations of PCBs and Chlordane in fish tissues. New Brighton Borough STP was not assigned waste load allocations or monitoring for PCBs and Chlordane.

The Beaver River TMDL designation is well-matched to the Ohio River TMDL, which ORSANCO water quality criteria recognized and considered under Section 5.5.B.2 of the 2019 Final Standards document.

Whole Effluent Toxicity (WET)

Per DEP-SOP Whole Effluent Toxicity (WET) SOP No. BPNPSM-PMT-031, revised May 13, 2014, the facility tests show that no reasonable potential exists, and no limits will be imposed for this renewal period. (See Appendix E).

The test frequency will be 1/year. Part C 114 will be included in the permit.

Mass Loadings

Mass loading limits are applicable for Publicly Owned Treatment Works (POTW). Current policy requires average monthly mass loading limits be established for $CBOD_5$, TSS, and NH_3-N and average weekly mass loading limits be established for $CBOD_5$ and TSS.

Average monthly mass loading limits (lbs/day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

Influent Monitoring

For POTWs with design flows greater than 2,000 GPD, influent BOD_5 and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters.

Monitoring Frequency Considerations

For pH, Dissolved Oxygen (DO) and Total Residual Chlorine (TRC), a monitoring frequency of 1/day will be imposed. The daily monitoring frequencies are consistent with current policy and Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations.

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:

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: 0.02 (see Appendix E).

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
10/1/2019	Pass	Pass	Pass	Pass
8/31/2020	Pass	Pass	Pass	Pass
8/29/2021	Pass	Pass	Pass	Pass
8/31/2022	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: The renewal application WET reports show no failure test for the last four years. Therefore, New Brighton BSA can be relieved of the requirement to progress to Phase II of the TRE process, the Compliance Schedule will be updated accordingly.

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

Acute Partial Mix Factor (PMFa): **0.0021** Chronic Partial Mix Factor (PMFc): **0.01**

1. Determine IWC – Acute (IWCa):

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

[(2.0 MGD x 1.547) / ((640 cfs x 0.0021) + (2.0 MGD x 1.547))] x 100 = **69.7%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

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

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

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

[(2.0 MGD x 1.547) / ((640 cfs x 0.01) + (2.0 MGD x 1.547))] x 100 = **32.5%**

3. Determine Dilution Series

Dilution Series = 100%, 67%, 33%, 17%, and 8%. **TIWCc 33%**

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	9.0 Inst Max	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	417	626	XXX	25	37.5	50	2/week	24-Hr Composite
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	500	750	XXX	30	45	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Ammonia-Nitrogen	417	XXX	XXX	25	XXX	50	2/week	24-Hr Composite
Fecal Coliform (CFU/100 ml) Nov 1 - Mar 31	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	400	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
PFOA* (ng/L)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
PFOS* (ng/L)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
HFPO-DA* (ng/L)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
PFBS* (ng/L)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

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

Compliance Sampling Location: Outfall 001.
Other Comments: None.

Appendix -A- USGS Stream Stats

StreamStats Report

Region ID: PA
Workspace ID: PA20230622200312386000
Clicked Point (Latitude, Longitude): 40.71899, -80.30532
Time: 2023-06-22 16:03:35 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3130	square miles
ELEV	Mean Basin Elevation	1127	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (3130 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3130	square miles	2.26	1400
ELEV	Mean Basin Elevation	1127	feet	1050	2580

Low-Flow Statistics Disclaimers [99.9 Percent (3130 square miles) Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [99.9 Percent (3130 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	256	ft^3/s
30 Day 2 Year Low Flow	338	ft^3/s
7 Day 10 Year Low Flow	162	ft^3/s
30 Day 10 Year Low Flow	189	ft^3/s
90 Day 10 Year Low Flow	257	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.15.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Appendix -B- TRC Calculation

TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9			
640	= Q stream (cfs)	0.5	= CV Daily
2	= 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 = 66.005	1.3.2.iii	WLA cfc = 64.342
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 24.595	5.1d	LTA_cfc = 37.405

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)**

Appendix –C– WQM 7.0 Modeling – Summer Conditions

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	33953	BEAVER RIVER	1.650	1127.00	3130.00	0.00040	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.204	0.00	0.00	0.000	0.000	0.0	400.00	15.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
New Brighton TP	PA0026026	2.0000	2.0000	2.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	33953	BEAVER RIVER	0.100	1126.00	3160.00	0.00040	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.202	0.00	0.00	0.000	0.000	0.0	560.00	15.35	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
New Brighton TP	PA0026026	0.0000	0.0000	0.0000	0.000	200.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.650	638.52	0.00	638.52	3.094	0.00040	15	400	26.67	0.11	0.886	24.98	7.00
Q1-10 Flow												
1.650	408.65	0.00	408.65	3.094	0.00040	NA	NA	NA	0.07	1.380	24.96	7.00
Q30-10 Flow												
1.650	868.39	0.00	868.39	3.094	0.00040	NA	NA	NA	0.15	0.652	24.98	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☑
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.650	2.000	24.976	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
400.000	15.000	26.667	0.107
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.11	0.043	0.12	1.027
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.223	0.082	O'Connor	5
Reach Travel Time (days)			
0.886			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.089	2.10	0.11	7.54
0.177	2.09	0.10	7.54
0.266	2.08	0.09	7.54
0.354	2.07	0.08	7.54
0.443	2.06	0.08	7.54
0.531	2.05	0.07	7.54
0.620	2.04	0.06	7.54
0.709	2.03	0.06	7.54
0.797	2.02	0.05	7.54
0.886	2.01	0.05	7.54

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.650	New Brighton TP	6.78	50	6.78	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.650	New Brighton TP	1.34	25	1.34	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.65	New Brighton TP	25	25	25	25	4	4	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
1.650	New Brighton TP	PA0026026	2.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Appendix –C– WQM 7.0 Modeling – Winter Conditions

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	33953	BEAVER RIVER	1.650	1127.00	3130.00	0.00040	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.408	0.00	0.00	0.000	0.000	0.0	400.00	15.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
New Brighton TP	PA0026026	2.0000	2.0000	2.0000	0.000	15.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	33953	BEAVER RIVER	0.100	1126.00	3160.00	0.00040	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.404	0.00	0.00	0.000	0.000	0.0	560.00	15.35	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
New Brighton TP	PA0026026	0.0000	0.0000	0.0000	0.000	15.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.650	1277.04	0.00	1277.04	3.094	0.00040	15	400	26.67	0.21	0.444	5.02	7.00
Q1-10 Flow												
1.650	817.31	0.00	817.31	3.094	0.00040	NA	NA	NA	0.14	0.693	5.04	7.00
Q30-10 Flow												
1.650	1736.77	0.00	1736.77	3.094	0.00040	NA	NA	NA	0.29	0.327	5.02	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☑
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.650	2.000	5.024	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
400.000	15.000	26.667	0.213
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.06	0.038	0.06	0.221
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
12.489	0.072	O'Connor	5
Reach Travel Time (days)			
0.444			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.044	2.05	0.06	11.45
0.089	2.05	0.06	11.45
0.133	2.05	0.06	11.45
0.178	2.05	0.06	11.45
0.222	2.05	0.06	11.45
0.266	2.05	0.06	11.45
0.311	2.04	0.06	11.45
0.355	2.04	0.06	11.45
0.400	2.04	0.06	11.45
0.444	2.04	0.05	11.45

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.650	New Brighton TP	20.59	50	20.59	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.650	New Brighton TP	4.08	25	4.08	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.65	New Brighton TP	25	25	25	25	4	4	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.650	New Brighton TP	PA0026026	2.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Appendix D – Toxics Management Spreadsheet (TMS) Analysis – Application Analysis

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: New Brighton Borough Sanitary Authority STP NPDES Permit No.: PA0026026 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated Sanitary 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
2	189	7.76						

					0 if left blank		0.6 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		419									
	Chloride (PWS)	mg/L		95.87									
	Bromide	mg/L		0.12									
	Sulfate (PWS)	mg/L		83.23									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		30									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L		5.03									
	Total Barium	µg/L		34.73									
	Total Beryllium	µg/L	<	0.8									
	Total Boron	µg/L		570.33									
	Total Cadmium	µg/L	<	0.15									
	Total Chromium (III)	µg/L	<	4									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L	<	0.8									
	Total Copper	mg/L		0.01683									
	Free Cyanide	µg/L		13.67									
	Total Cyanide	µg/L		11									
	Dissolved Iron	µg/L		69									
	Total Iron	µg/L		145.67									
	Total Lead	µg/L	<	17.17									
	Total Manganese	µg/L		10.63									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		2.65									
	Total Phenols (Phenolics) (PWS)	µg/L	<	2.62									
	Total Selenium	µg/L	<	2.01									
	Total Silver	µg/L	<	0.22									
	Total Thallium	µg/L	<	0.8									
	Total Zinc	mg/L		0.0511									
	Total Molybdenum	µg/L		2.77									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

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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		3.8									
	Dichlorobromomethane	µg/L		0.9									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	5									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	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	<	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	<	10									
	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	<	5										
	Fluoranthene	µg/L	<	2.5										
	Fluorene	µg/L	<	2.5										
	Hexachlorobenzene	µg/L	<	5										
	Hexachlorobutadiene	µg/L	<	0.5										
	Hexachlorocyclopentadiene	µg/L	<	5										
	Hexachloroethane	µg/L	<	5										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5										
	Isophorone	µg/L	<	5										
	Naphthalene	µg/L	<	0.5										
	Nitrobenzene	µg/L	<	5										
	n-Nitrosodimethylamine	µg/L	<	5										
	n-Nitrosodi-n-Propylamine	µg/L	<	5										
	n-Nitrosodiphenylamine	µg/L	<	5										
	Phenanthrene	µg/L	<	2.5										
	Pyrene	µg/L	<	2.5										
	1,2,4-Trichlorobenzene	µg/L	<	0.5										
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

New Brighton Borough Sanitary Authority STP, NPDES Permit No. PA0026026, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Beaver 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	033953	1.65	1127	3130			Yes
End of Reach 1	033953	0.1	1126	3160			Yes

Q_{7-10}

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	1.65	0.2	640			400	15					143	7		
End of Reach 1	0.1	0.202	640			653	15					143	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	1.65														
End of Reach 1	0.1														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

New Brighton Borough Sanitary Authority STP, NPDES Permit No. PA0026026, Outfall 001

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.65	640		640	3.094	0.00012	15.	400.	26.667	0.107	0.884	338.224
0.1	640		640								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.65	2106.64		2106.64	3.094	0.00012	25.299	400.	15.811	0.208	0.454	155.45
0.1	2106.639		2106.64								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.211 Analysis Hardness (mg/l): 144.03 Analysis pH: 7.01

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	33,421	
Total Antimony	0	0		0	1,100	1,100	49,018	
Total Arsenic	0	0		0	340	340	15,151	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	935,792	
Total Boron	0	0		0	8,100	8,100	360,948	
Total Cadmium	0	0		0	2.871	3.09	138	Chem Translator of 0.929 applied
Total Chromium (III)	0	0		0	768.198	2,431	108,329	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	726	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	4,233	
Total Copper	0	0		0	18.953	19.7	880	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	980	

Model Results 11/14/2023 Page 5

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	95.854	130	5,789	Chem Translator of 0.738 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	73.4	Chem Translator of 0.85 applied
Total Nickel	0	0		0	637.561	639	28,468	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	6.025	7.09	316	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	2,896	
Total Zinc	0	0		0	159.631	163	7,273	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	134	
Acrylonitrile	0	0		0	650	650	28,965	
Benzene	0	0		0	640	640	28,519	
Bromoform	0	0		0	1,800	1,800	80,211	
Carbon Tetrachloride	0	0		0	2,800	2,800	124,772	
Chlorobenzene	0	0		0	1,200	1,200	53,474	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	802,107	
Chloroform	0	0		0	1,900	1,900	84,667	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	668,423	
1,1-Dichloroethylene	0	0		0	7,500	7,500	334,211	
1,2-Dichloropropane	0	0		0	11,000	11,000	490,177	
1,3-Dichloropropylene	0	0		0	310	310	13,814	
Ethylbenzene	0	0		0	2,900	2,900	129,228	
Methyl Bromide	0	0		0	550	550	24,509	
Methyl Chloride	0	0		0	28,000	28,000	1,247,723	
Methylene Chloride	0	0		0	12,000	12,000	534,738	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	44,562	
Tetrachloroethylene	0	0		0	700	700	31,193	
Toluene	0	0		0	1,700	1,700	75,755	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	303,018	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	133,685	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	151,509	
Trichloroethylene	0	0		0	2,300	2,300	102,491	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	24,954	
2,4-Dichlorophenol	0	0		0	1,700	1,700	75,755	
2,4-Dimethylphenol	0	0		0	660	660	29,411	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	3,565	
2,4-Dinitrophenol	0	0		0	660	660	29,411	
2-Nitrophenol	0	0		0	8,000	8,000	356,492	
4-Nitrophenol	0	0		0	2,300	2,300	102,491	
p-Chloro-m-Cresol	0	0		0	160	160	7,130	
Pentachlorophenol	0	0		0	8.795	8.79	392	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	20,498	

Model Results 11/14/2023 Page 6

Acenaphthene	0	0		0	83	83.0	3,699	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	13,368	
Benzo(a)Anthracene	0	0		0	0.5	0.5	22.3	
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	1,336,846	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	200,527	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	12,032	
Butyl Benzyl Phthalate	0	0		0	140	140	6,239	
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	36,540	
1,3-Dichlorobenzene	0	0		0	350	350	15,597	
1,4-Dichlorobenzene	0	0		0	730	730	32,530	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	178,246	
Dimethyl Phthalate	0	0		0	2,500	2,500	111,404	
Di-n-Butyl Phthalate	0	0		0	110	110	4,902	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	71,298	
2,6-Dinitrotoluene	0	0		0	990	990	44,116	
1,2-Diphenylhydrazine	0	0		0	15	15.0	668	
Fluoranthene	0	0		0	200	200	8,912	
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	446	
Hexachlorocyclopentadiene	0	0		0	5	5.0	223	
Hexachloroethane	0	0		0	60	60.0	2,674	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	445,615	
Naphthalene	0	0		0	140	140	6,239	
Nitrobenzene	0	0		0	4,000	4,000	178,246	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	757,545	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	13,368	
Phenanthrene	0	0		0	5	5.0	223	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	5,793	

☑ CFC CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 143.22 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 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	45,727	
Total Arsenic	0	0		0	150	150	31,178	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	852,193	
Total Boron	0	0		0	1,600	1,600	332,563	
Total Cadmium	0	0		0	0.316	0.35	73.4	Chem Translator of 0.894 applied
Total Chromium (III)	0	0		0	99.466	116	24,040	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	2,161	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	3,949	
Total Copper	0	0		0	12.173	12.7	2,636	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	1,081	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	311,778	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.713	5.03	1,045	Chem Translator of 0.739 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	188	Chem Translator of 0.85 applied
Total Nickel	0	0		0	70.476	70.7	14,693	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	1,037	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	2,702	
Total Zinc	0	0		0	160.169	162	33,764	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	624	
Acrylonitrile	0	0		0	130	130	27,021	
Benzene	0	0		0	130	130	27,021	
Bromoform	0	0		0	370	370	76,905	
Carbon Tetrachloride	0	0		0	560	560	116,397	
Chlorobenzene	0	0		0	240	240	49,884	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	727,482	
Chloroform	0	0		0	390	390	81,062	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	644,341	
1,1-Dichloroethylene	0	0		0	1,500	1,500	311,778	
1,2-Dichloropropane	0	0		0	2,200	2,200	457,274	
1,3-Dichloropropylene	0	0		0	61	61.0	12,679	
Ethylbenzene	0	0		0	580	580	120,554	
Methyl Bromide	0	0		0	110	110	22,864	
Methyl Chloride	0	0		0	5,500	5,500	1,143,186	
Methylene Chloride	0	0		0	2,400	2,400	498,845	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	43,649	
Tetrachloroethylene	0	0		0	140	140	29,099	
Toluene	0	0		0	330	330	68,591	

1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	290,993	
1,1,1-Trichloroethane	0	0		0	610	610	126,790	
1,1,2-Trichloroethane	0	0		0	680	680	141,339	
Trichloroethylene	0	0		0	450	450	93,533	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	22,864	
2,4-Dichlorophenol	0	0		0	340	340	70,670	
2,4-Dimethylphenol	0	0		0	130	130	27,021	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	3,326	
2,4-Dinitrophenol	0	0		0	130	130	27,021	
2-Nitrophenol	0	0		0	1,600	1,600	332,563	
4-Nitrophenol	0	0		0	470	470	97,690	
p-Chloro-m-Cresol	0	0		0	500	500	103,926	
Pentachlorophenol	0	0		0	6.747	6.75	1,402	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	18,915	
Acenaphthene	0	0		0	17	17.0	3,533	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	12,263	
Benzo(a)Anthracene	0	0		0	0.1	0.1	20.8	
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	1,247,112	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	189,145	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	11,224	
Butyl Benzyl Phthalate	0	0		0	35	35.0	7,275	
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	33,256	
1,3-Dichlorobenzene	0	0		0	69	69.0	14,342	
1,4-Dichlorobenzene	0	0		0	150	150	31,178	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	166,282	
Dimethyl Phthalate	0	0		0	500	500	103,926	
Di-n-Butyl Phthalate	0	0		0	21	21.0	4,365	
2,4-Dinitrotoluene	0	0		0	320	320	66,513	
2,6-Dinitrotoluene	0	0		0	200	200	41,570	
1,2-Diphenylhydrazine	0	0		0	3	3.0	624	
Fluoranthene	0	0		0	40	40.0	8,314	
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	416	

Hexachlorocyclopentadiene	0	0		0	1	1.0	208	
Hexachloroethane	0	0		0	12	12.0	2,494	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	436,489	
Naphthalene	0	0		0	43	43.0	8,938	
Nitrobenzene	0	0		0	810	810	168,360	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	706,697	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	12,263	
Phenanthrene	0	0		0	1	1.0	208	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	5,404	

☑ ***THH*** CCT (min): ####### 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	1,164	
Total Arsenic	0	0		0	10	10.0	2,079	
Total Barium	0	0		0	1,000	1,000	207,852	
Total Boron	0	0		0	3,100	3,100	644,341	
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	1,300	1,300	270,208	
Free Cyanide	0	0		0	4	4.0	831	
Dissolved Iron	0	0		0	300	300	62,356	
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	207,852	
Total Mercury	0	0		0	0.012	0.012	2.49	
Total Nickel	0	0		0	610	610	126,790	
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	49.9	
Total Zinc	0	0		0	7,400	7,400	1,538,105	
Acrolein	0	0		0	3	3.0	624	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	

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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	20,785	
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	1,185	
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	6,859	
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	14,134	
Methyl Bromide	0	0		0	47	47.0	9,769	
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	11,848	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	20,785	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	2,078,520	
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	6,236	
2,4-Dichlorophenol	0	0		0	10	10.0	2,079	
2,4-Dimethylphenol	0	0		0	100	100.0	20,785	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	416	
2,4-Dinitrophenol	0	0		0	10	10.0	2,079	
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	831,408	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	14,550	
Anthracene	0	0		0	300	300	62,356	
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	41,570	
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	20.8	
2-Chloronaphthalene	0	0		0	800	800	166,282	
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	420	420	87,298	
1,3-Dichlorobenzene	0	0		0	7	7.0	1,455	
1,4-Dichlorobenzene	0	0		0	63	63.0	13,095	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	124,711	
Dimethyl Phthalate	0	0		0	2,000	2,000	415,704	
Di-n-Butyl Phthalate	0	0		0	20	20.0	4,157	
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	4,157	
Fluorene	0	0		0	50	50.0	10,393	
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	831	
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	7,067	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	2,079	
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	4,157	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	14.5	

☑ *CRL* CCT (min): ####### 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	50	50.0	34,094	
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	0.051	0.051	34.8	
Benzene	0	0		0	0.58	0.58	395	
Bromoform	0	0		0	4.3	4.3	2,932	
Carbon Tetrachloride	0	0		0	0.4	0.4	273	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.4	0.4	273	
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	0.55	0.55	375	
1,2-Dichloroethane	0	0		0	0.38	0.38	259	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.5	0.5	341	
1,3-Dichloropropylene	0	0		0	0.27	0.27	184	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	4.6	4.6	3,137	
1,1,2,2-Tetrachloroethane	0	0		0	0.17	0.17	116	
Tetrachloroethylene	0	0		0	0.69	0.69	470	
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	375	
Trichloroethylene	0	0		0	0.6	0.6	409	
Vinyl Chloride	0	0		0	0.02	0.02	13.6	
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	20.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.4	1.4	955	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.000086	0.00009	0.059	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.68	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.068	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.68	
Benzo(k)Fluoranthene	0	0		0	0.0038	0.004	2.59	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	20.5	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	218	
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	0.0038	0.004	2.59	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.068	
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	0.021	0.021	14.3	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	34.1	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	34.1	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	20.5	
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	0.055	
Hexachlorobutadiene	0	0		0	0.01	0.01	6.82	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	68.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.68	
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	0.00069	0.0007	0.47	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	3.41	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	2,250	

Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
3,3-Dichlorobenzidine	0.24	0.37	14.3	22.3	35.8	µg/L	14.3	CRL	Discharge Conc ≥ 50% WQBEL (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	21,422	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	2,079	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	207,852	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	231,353	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	73.4	µg/L	Discharge Conc < TQL
Total Chromium (III)	24,040	µg/L	Discharge Conc < TQL
Hexavalent Chromium	465	µg/L	Discharge Conc < TQL
Total Cobalt	2,713	µg/L	Discharge Conc < TQL
Total Copper	0.56	mg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	628	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	62,356	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	311,778	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,045	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	207,852	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.012	µg/L	Discharge Conc < TQL
Total Nickel	14,693	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL

Total Selenium	1,037	µg/L	Discharge Conc < TQL
Total Silver	202	µg/L	Discharge Conc < TQL
Total Thallium	49.9	µg/L	Discharge Conc < TQL
Total Zinc	4.66	mg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	85.7	µg/L	Discharge Conc < TQL
Acrylonitrile	34.8	µg/L	Discharge Conc < TQL
Benzene	395	µg/L	Discharge Conc < TQL
Bromoform	2,932	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	273	µg/L	Discharge Conc < TQL
Chlorobenzene	20,785	µg/L	Discharge Conc < TQL
Chlorodibromomethane	273	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	514,118	µg/L	Discharge Conc < TQL
Chloroform	1,185	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	375	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	259	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	6,859	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	341	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	184	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	14,134	µg/L	Discharge Conc < TQL
Methyl Bromide	9,769	µg/L	Discharge Conc < TQL
Methyl Chloride	799,740	µg/L	Discharge Conc < TQL
Methylene Chloride	3,137	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	116	µg/L	Discharge Conc < TQL
Tetrachloroethylene	470	µg/L	Discharge Conc < TQL
Toluene	11,848	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	20,785	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	85,686	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	375	µg/L	Discharge Conc < TQL
Trichloroethylene	409	µg/L	Discharge Conc < TQL
Vinyl Chloride	13.6	µg/L	Discharge Conc < TQL
2-Chlorophenol	6,236	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	2,079	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	18,851	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	416	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	2,079	µg/L	Discharge Conc < TQL
2-Nitrophenol	228,497	µg/L	Discharge Conc < TQL
4-Nitrophenol	65,693	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	4,570	µg/L	Discharge Conc < TQL
Pentachlorophenol	20.5	µg/L	Discharge Conc < TQL
Phenol	831,408	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	955	µg/L	Discharge Conc < TQL

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Acenaphthene	2,371	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	62,356	µg/L	Discharge Conc < TQL
Benzidine	0.059	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.68	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.068	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.68	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	2.59	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	20.5	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	41,570	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	218	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	7,712	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	20.8	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	166,282	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	2.59	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.068	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	23,421	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	1,455	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	13,095	µg/L	Discharge Conc < TQL
Diethyl Phthalate	114,249	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	71,405	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	3,142	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	34.1	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	34.1	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	20.5	µg/L	Discharge Conc < TQL
Fluoranthene	4,157	µg/L	Discharge Conc < TQL
Fluorene	10,393	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00008	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.01	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	143	µg/L	Discharge Conc < TQL
Hexachloroethane	68.2	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.68	µg/L	Discharge Conc < TQL
Isophorone	7,067	µg/L	Discharge Conc < TQL
Naphthalene	3,999	µg/L	Discharge Conc < TQL
Nitrobenzene	2,079	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.47	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	3.41	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	2,250	µg/L	Discharge Conc < TQL
Phenanthrene	143	µg/L	Discharge Conc < TQL
Pyrene	4,157	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	14.5	µg/L	Discharge Conc < TQL

Appendix D – Toxics Management Spreadsheet (TMS) Analysis – Resampling Analysis

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: New Brighton Borough Sanitary Authority STP NPDES Permit No.: PA0026026 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated Sanitary 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
2	189	7.76						

	Discharge Pollutant	Units		Max Discharge Conc	0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.6 if left blank: Daily CV	0.6 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		419									
	Chloride (PWS)	mg/L		95.87									
	Bromide	mg/L		0.12									
	Sulfate (PWS)	mg/L		83.23									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		30									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L		5.03									
	Total Barium	µg/L		34.73									
	Total Beryllium	µg/L	<	0.8									
	Total Boron	µg/L		570.33									
	Total Cadmium	µg/L	<	0.15									
	Total Chromium (III)	µg/L	<	4									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L	<	0.8									
	Total Copper	mg/L		0.01683									
	Free Cyanide	µg/L		13.67									
	Total Cyanide	µg/L		11									
	Dissolved Iron	µg/L		69									
	Total Iron	µg/L		145.67									
	Total Lead	µg/L	<	17.17									
	Total Manganese	µg/L		10.63									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		2.65									
	Total Phenols (Phenolics) (PWS)	µg/L	<	2.62									
	Total Selenium	µg/L	<	2.01									
	Total Silver	µg/L	<	0.22									
	Total Thallium	µg/L	<	0.8									
	Total Zinc	mg/L		0.0511									
	Total Molybdenum	µg/L		2.77									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

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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		3.8									
	Dichlorobromomethane	µg/L		0.9									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	5									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	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	<	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	<	5									
	Fluoranthene	µg/L	<	2.5									
	Fluorene	µg/L	<	2.5									
	Hexachlorobenzene	µg/L	<	5									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	5									
	Hexachloroethane	µg/L	<	5									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5									
	Isophorone	µg/L	<	5									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	5									
	n-Nitrosodimethylamine	µg/L	<	5									
	n-Nitrosodi-n-Propylamine	µg/L	<	5									
	n-Nitrosodiphenylamine	µg/L	<	5									
	Phenanthrene	µg/L	<	2.5									
	Pyrene	µg/L	<	2.5									
	1,2,4-Trichlorobenzene	µg/L	<	0.5									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

New Brighton Borough Sanitary Authority STP, NPDES Permit No. PA0026026, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Beaver 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	033953	1.65	1127	3130			Yes
End of Reach 1	033953	0.1	1126	3160			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	1.65	0.2	640			400	15					143	7		
End of Reach 1	0.1	0.202	640			653	15					143	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	1.65														
End of Reach 1	0.1														

Stream / Surface Water Information 1/27/2024 Page 4

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Toxics Management Spreadsheet
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Model Results

New Brighton Borough Sanitary Authority STP, NPDES Permit No. PA0026026, Outfall 001

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

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.65	640		640	3.094	0.00012	15.	400.	26.667	0.107	0.884	338.224
0.1	640		640								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.65	2106.64		2106.64	3.094	0.00012	25.299	400.	15.811	0.208	0.454	155.45
0.1	2106.639		2106.64								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.211 Analysis Hardness (mg/l): 144.03 Analysis pH: 7.01

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	33,421	
Total Antimony	0	0		0	1,100	1,100	49,018	
Total Arsenic	0	0		0	340	340	15,151	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	935,792	
Total Boron	0	0		0	8,100	8,100	360,948	
Total Cadmium	0	0		0	2.871	3.09	138	Chem Translator of 0.929 applied
Total Chromium (III)	0	0		0	768.196	2,431	108,329	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	726	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	95	95.0	4,233	
Total Copper	0	0		0	18.953	19.7	880	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	980	

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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	95.854	130	5,789	Chem Translator of 0.738 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	73.4	Chem Translator of 0.85 applied
Total Nickel	0	0		0	637.561	639	28,468	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	6.025	7.09	316	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	2,896	
Total Zinc	0	0		0	159.631	163	7,273	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	134	
Acrylonitrile	0	0		0	650	650	28,965	
Benzene	0	0		0	640	640	28,519	
Bromoform	0	0		0	1,800	1,800	80,211	
Carbon Tetrachloride	0	0		0	2,800	2,800	124,772	
Chlorobenzene	0	0		0	1,200	1,200	53,474	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	802,107	
Chloroform	0	0		0	1,900	1,900	84,667	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	668,423	
1,1-Dichloroethylene	0	0		0	7,500	7,500	334,211	
1,2-Dichloropropane	0	0		0	11,000	11,000	490,177	
1,3-Dichloropropylene	0	0		0	310	310	13,814	
Ethylbenzene	0	0		0	2,900	2,900	129,228	
Methyl Bromide	0	0		0	550	550	24,509	
Methyl Chloride	0	0		0	28,000	28,000	1,247,723	
Methylene Chloride	0	0		0	12,000	12,000	534,738	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	44,562	
Tetrachloroethylene	0	0		0	700	700	31,193	
Toluene	0	0		0	1,700	1,700	75,755	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	303,018	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	133,685	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	151,509	
Trichloroethylene	0	0		0	2,300	2,300	102,491	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	24,954	
2,4-Dichlorophenol	0	0		0	1,700	1,700	75,755	
2,4-Dimethylphenol	0	0		0	660	660	29,411	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	3,565	
2,4-Dinitrophenol	0	0		0	660	660	29,411	
2-Nitrophenol	0	0		0	8,000	8,000	356,492	
4-Nitrophenol	0	0		0	2,300	2,300	102,491	
p-Chloro-m-Cresol	0	0		0	160	160	7,130	
Pentachlorophenol	0	0		0	8.795	8.79	392	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	20,498	

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Acenaphthene	0	0		0	83	83.0	3,699	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	13,368	
Benzo(a)Anthracene	0	0		0	0.5	0.5	22.3	
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	1,336,846	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	200,527	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	12,032	
Butyl Benzyl Phthalate	0	0		0	140	140	6,239	
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	36,540	
1,3-Dichlorobenzene	0	0		0	350	350	15,597	
1,4-Dichlorobenzene	0	0		0	730	730	32,530	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	178,246	
Dimethyl Phthalate	0	0		0	2,500	2,500	111,404	
Di-n-Butyl Phthalate	0	0		0	110	110	4,902	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	71,298	
2,6-Dinitrotoluene	0	0		0	990	990	44,116	
1,2-Diphenylhydrazine	0	0		0	15	15.0	668	
Fluoranthene	0	0		0	200	200	8,912	
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	446	
Hexachlorocyclopentadiene	0	0		0	5	5.0	223	
Hexachloroethane	0	0		0	60	60.0	2,674	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	445,615	
Naphthalene	0	0		0	140	140	6,239	
Nitrobenzene	0	0		0	4,000	4,000	178,246	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	757,546	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	13,368	
Phenanthrene	0	0		0	5	5.0	223	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	5,793	

☑ *CFC* CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 143.22 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 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	45,727	
Total Arsenic	0	0		0	150	150	31,178	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	852,193	
Total Boron	0	0		0	1,600	1,600	332,563	
Total Cadmium	0	0		0	0.316	0.35	73.4	Chem Translator of 0.894 applied
Total Chromium (III)	0	0		0	99.466	116	24,040	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	2,161	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	3,949	
Total Copper	0	0		0	12.173	12.7	2,636	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	1,081	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	311,778	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.713	5.03	1,045	Chem Translator of 0.739 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	188	Chem Translator of 0.85 applied
Total Nickel	0	0		0	70.476	70.7	14,693	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	1,037	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	2,702	
Total Zinc	0	0		0	160.169	162	33,764	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	624	
Acrylonitrile	0	0		0	130	130	27,021	
Benzene	0	0		0	130	130	27,021	
Bromoform	0	0		0	370	370	76,905	
Carbon Tetrachloride	0	0		0	560	560	116,397	
Chlorobenzene	0	0		0	240	240	49,884	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	727,482	
Chloroform	0	0		0	390	390	81,062	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	644,341	
1,1-Dichloroethylene	0	0		0	1,500	1,500	311,778	
1,2-Dichloropropane	0	0		0	2,200	2,200	457,274	
1,3-Dichloropropylene	0	0		0	61	61.0	12,679	
Ethylbenzene	0	0		0	580	580	120,554	
Methyl Bromide	0	0		0	110	110	22,864	
Methyl Chloride	0	0		0	5,500	5,500	1,143,186	
Methylene Chloride	0	0		0	2,400	2,400	498,845	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	43,649	
Tetrachloroethylene	0	0		0	140	140	29,099	
Toluene	0	0		0	330	330	68,591	

1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	290,993	
1,1,1-Trichloroethane	0	0		0	610	610	126,790	
1,1,2-Trichloroethane	0	0		0	680	680	141,339	
Trichloroethylene	0	0		0	450	450	93,533	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	22,864	
2,4-Dichlorophenol	0	0		0	340	340	70,670	
2,4-Dimethylphenol	0	0		0	130	130	27,021	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	3,326	
2,4-Dinitrophenol	0	0		0	130	130	27,021	
2-Nitrophenol	0	0		0	1,600	1,600	332,563	
4-Nitrophenol	0	0		0	470	470	97,690	
p-Chloro-m-Cresol	0	0		0	500	500	103,926	
Pentachlorophenol	0	0		0	6.747	6.75	1,402	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	18,915	
Acenaphthene	0	0		0	17	17.0	3,533	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	12,263	
Benzo(a)Anthracene	0	0		0	0.1	0.1	20.8	
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	1,247,112	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	189,145	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	11,224	
Butyl Benzyl Phthalate	0	0		0	35	35.0	7,275	
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	33,256	
1,3-Dichlorobenzene	0	0		0	69	69.0	14,342	
1,4-Dichlorobenzene	0	0		0	150	150	31,178	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	166,282	
Dimethyl Phthalate	0	0		0	500	500	103,926	
Di-n-Butyl Phthalate	0	0		0	21	21.0	4,365	
2,4-Dinitrotoluene	0	0		0	320	320	66,513	
2,6-Dinitrotoluene	0	0		0	200	200	41,570	
1,2-Diphenylhydrazine	0	0		0	3	3.0	624	
Fluoranthene	0	0		0	40	40.0	8,314	
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	416	

Hexachlorocyclopentadiene	0	0		0	1	1.0	208	
Hexachloroethane	0	0		0	12	12.0	2,494	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	436,489	
Naphthalene	0	0		0	43	43.0	8,938	
Nitrobenzene	0	0		0	810	810	168,360	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	706,697	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	12,263	
Phenanthrene	0	0		0	1	1.0	208	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	5,404	

☑ ***THH*** CCT (min): ###### 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	1,164	
Total Arsenic	0	0		0	10	10.0	2,079	
Total Barium	0	0		0	1,000	1,000	207,852	
Total Boron	0	0		0	3,100	3,100	644,341	
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	1,300	1,300	270,208	
Free Cyanide	0	0		0	4	4.0	831	
Dissolved Iron	0	0		0	300	300	62,356	
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	207,852	
Total Mercury	0	0		0	0.012	0.012	2.49	
Total Nickel	0	0		0	610	610	126,790	
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	49.9	
Total Zinc	0	0		0	7,400	7,400	1,538,105	
Acrolein	0	0		0	3	3.0	624	
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	20,785	
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	1,185	
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	6,859	
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	14,134	
Methyl Bromide	0	0		0	47	47.0	9,769	
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	11,848	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	20,785	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	2,078,520	
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	6,236	
2,4-Dichlorophenol	0	0		0	10	10.0	2,079	
2,4-Dimethylphenol	0	0		0	100	100.0	20,785	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	416	
2,4-Dinitrophenol	0	0		0	10	10.0	2,079	
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	831,408	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	14,550	
Anthracene	0	0		0	300	300	62,356	
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	41,570	
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	20.8	
2-Chloronaphthalene	0	0		0	800	800	166,262	
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	420	420	87,298	
1,3-Dichlorobenzene	0	0		0	7	7.0	1,455	
1,4-Dichlorobenzene	0	0		0	63	63.0	13,095	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	124,711	
Dimethyl Phthalate	0	0		0	2,000	2,000	415,704	
Di-n-Butyl Phthalate	0	0		0	20	20.0	4,157	
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	4,157	
Fluorene	0	0		0	50	50.0	10,393	
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	831	
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	7,067	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	2,079	
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	4,157	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	14.5	

☑ *CRL* CCT (min): ####### 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	50	50.0	34,094	
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	0.051	0.051	34.8	
Benzene	0	0		0	0.58	0.58	395	
Bromoform	0	0		0	4.3	4.3	2,932	
Carbon Tetrachloride	0	0		0	0.4	0.4	273	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.4	0.4	273	
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	0.55	0.55	375	
1,2-Dichloroethane	0	0		0	0.38	0.38	259	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.5	0.5	341	
1,3-Dichloropropylene	0	0		0	0.27	0.27	184	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	4.6	4.6	3,137	
1,1,2,2-Tetrachloroethane	0	0		0	0.17	0.17	116	
Tetrachloroethylene	0	0		0	0.69	0.69	470	
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	375	
Trichloroethylene	0	0		0	0.6	0.6	409	
Vinyl Chloride	0	0		0	0.02	0.02	13.6	
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	20.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.4	1.4	955	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.000086	0.00009	0.059	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.68	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.068	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.68	
Benzo(k)Fluoranthene	0	0		0	0.0038	0.004	2.59	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	20.5	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	218	
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	0.0038	0.004	2.59	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.068	
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	0.021	0.021	14.3	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	34.1	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	34.1	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	20.5	
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	0.055	
Hexachlorobutadiene	0	0		0	0.01	0.01	6.82	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	68.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.68	
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	0.00069	0.0007	0.47	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	3.41	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	2,250	

Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***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	21,422	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	2,079	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	207,852	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	231,353	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	73.4	µg/L	Discharge Conc < TQL
Total Chromium (III)	24,040	µg/L	Discharge Conc < TQL
Hexavalent Chromium	465	µg/L	Discharge Conc < TQL
Total Cobalt	2,713	µg/L	Discharge Conc < TQL
Total Copper	0.56	mg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	628	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	62,356	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	311,778	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,045	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	207,852	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.012	µg/L	Discharge Conc < TQL
Total Nickel	14,693	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL

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Total Selenium	1,037	µg/L	Discharge Conc < TQL
Total Silver	202	µg/L	Discharge Conc < TQL
Total Thallium	49.9	µg/L	Discharge Conc < TQL
Total Zinc	4.66	mg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	85.7	µg/L	Discharge Conc < TQL
Acrylonitrile	34.8	µg/L	Discharge Conc < TQL
Benzene	395	µg/L	Discharge Conc < TQL
Bromoform	2,932	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	273	µg/L	Discharge Conc < TQL
Chlorobenzene	20,785	µg/L	Discharge Conc < TQL
Chlorodibromomethane	273	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	514,118	µg/L	Discharge Conc < TQL
Chloroform	1,185	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	375	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	259	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	6,859	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	341	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	184	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	14,134	µg/L	Discharge Conc < TQL
Methyl Bromide	9,769	µg/L	Discharge Conc < TQL
Methyl Chloride	799,740	µg/L	Discharge Conc < TQL
Methylene Chloride	3,137	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	116	µg/L	Discharge Conc < TQL
Tetrachloroethylene	470	µg/L	Discharge Conc < TQL
Toluene	11,848	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	20,785	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	85,686	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	375	µg/L	Discharge Conc < TQL
Trichloroethylene	409	µg/L	Discharge Conc < TQL
Vinyl Chloride	13.6	µg/L	Discharge Conc < TQL
2-Chlorophenol	6,236	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	2,079	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	18,851	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	416	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	2,079	µg/L	Discharge Conc < TQL
2-Nitrophenol	228,497	µg/L	Discharge Conc < TQL
4-Nitrophenol	65,693	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	4,570	µg/L	Discharge Conc < TQL
Pentachlorophenol	20.5	µg/L	Discharge Conc < TQL
Phenol	831,408	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	955	µg/L	Discharge Conc < TQL

Acenaphthene	2,371	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	62,356	µg/L	Discharge Conc < TQL
Benzidine	0.059	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.68	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.068	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.68	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	2.59	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	20.5	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	41,570	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	218	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	7,712	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	20.8	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	166,282	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	2.59	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.068	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	23,421	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	1,455	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	13,095	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	14.3	µg/L	Discharge Conc < TQL
Diethyl Phthalate	114,249	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	71,405	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	3,142	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	34.1	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	34.1	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	20.5	µg/L	Discharge Conc < TQL
Fluoranthene	4,157	µg/L	Discharge Conc < TQL
Fluorene	10,393	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00008	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.01	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	143	µg/L	Discharge Conc < TQL
Hexachloroethane	68.2	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.68	µg/L	Discharge Conc < TQL
Isophorone	7,067	µg/L	Discharge Conc < TQL
Naphthalene	3,999	µg/L	Discharge Conc < TQL
Nitrobenzene	2,079	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.47	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	3.41	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	2,250	µg/L	Discharge Conc < TQL
Phenanthrene	143	µg/L	Discharge Conc < TQL
Pyrene	4,157	µg/L	Discharge Conc < TQL

1,2,4-Trichlorobenzene	14.5	µg/L	Discharge Conc < TQL

Appendix E – DEP WET Analysis Spreadsheet –

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

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

Facility Name: New Brighton WWTP

Permit No.: PA0026026

Replicate No.	Test Completion Date: 10/1/2019 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 8/31/2020 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 8/29/2021 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	0
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.316
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 8/31/2022 Control	TIWC
1	0	1
2	1	1
3	1	1
4	1	1
5	0	0
6	0	0
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.700	0.800
Std Dev.	0.483	0.422
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

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

Facility Name
New Brighton WWTP

Permit No.
PA0026026

Test Completion Date: 10/1/2019

Replicate No.	Control	TIWC
1	33	39
2	33	33
3	37	32
4	36	26
5	34	29
6	19	36
7	33	38
8	28	34
9	33	21
10	34	30
11		
12		
13		
14		
15		
Mean	32.000	31.800
Std Dev.	5.142	5.534
# Replicates	10	10

T-Test Result	3.6568
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	PASS

Test Completion Date: 8/31/2020

Replicate No.	Control	TIWC
1	38	27
2	30	30
3	32	33
4	30	30
5	34	28
6	31	30
7	36	32
8	29	33
9	30	30
10	27	33
11		
12		
13		
14		
15		
Mean	31.700	30.600
Std Dev.	3.368	2.119
# Replicates	10	10

T-Test Result	6.5461
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Test Completion Date: 8/29/2021

Replicate No.	Control	TIWC
1	21	23
2	20	16
3	29	25
4	25	7
5	30	20
6	21	14
7	21	19
8	21	19
9	20	29
10	19	23
11		
12		
13		
14		
15		
Mean	22.700	19.500
Std Dev.	3.917	6.187
# Replicates	10	10

T-Test Result	1.1427
Deg. of Freedom	14
Critical T Value	0.8681
Pass or Fail	PASS

Test Completion Date: 8/31/2022

Replicate No.	Control	TIWC
1	0	22
2	25	24
3	27	21
4	17	18
5	0	0
6	0	0
7	21	23
8	19	30
9	16	23
10	23	27
11		
12		
13		
14		
15		
Mean	14.800	18.800
Std Dev.	10.748	10.422
# Replicates	10	10

T-Test Result	1.8481
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

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

Facility Name: New Brighton WWTP

Permit No.: PA0026026

Replicate No.	Test Completion Date: 10/1/2019 Control	TIWC
1	0.8	0.5
2	0.7	0.5
3	1	0.8
4	0.7	0.7
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.800	0.625
Std Dev.	0.141	0.150
# Replicates	4	4
T-Test Result	2.0324	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 9/1/2020 Control	TIWC
1	1	0.9
2	1	1
3	0.9	1
4	0.9	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.950	0.975
Std Dev.	0.058	0.050
# Replicates	4	4
T-Test Result	14.6365	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 8/31/2021 Control	TIWC
1	0.9	1
2	0.9	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.950	1.000
Std Dev.	0.058	0.000
# Replicates	4	4
T-Test Result	23.5123	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	PASS	

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

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

Facility Name
New Brighton WWTP

Permit No.
PA0026026

Replicate No.	Test Completion Date 10/1/2019 Control	TIWC	Test Completion Date 9/1/2020 Control	TIWC
1	0.279	0.26	0.299	0.348
2	0.273	0.256	0.266	0.314
3	0.324	0.272	0.258	0.271
4	0.226	0.276	0.33	0.306
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Mean	0.276	0.266	0.288	0.310
Std Dev.	0.040	0.010	0.033	0.032
# Replicates	4	4	4	4
T-Test Result	3.7654		4.6610	
Deg. of Freedom	5		5	
Critical T Value	0.7267		0.7267	
Pass or Fail	PASS		PASS	

Replicate No.	Test Completion Date 8/31/2021 Control	TIWC	Test Completion Date 8/30/2022 Control	TIWC
1	0.29	0.284	0.32	0.333
2	0.367	0.265	0.325	0.313
3	0.317	0.316	0.348	0.346
4	0.354	0.316	0.312	0.358
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Mean	0.332	0.295	0.326	0.338
Std Dev.	0.035	0.025	0.015	0.019
# Replicates	4	4	4	4
T-Test Result	2.5387		8.2570	
Deg. of Freedom	5		5	
Critical T Value	0.7267		0.7267	
Pass or Fail	PASS		PASS	

WET Summary and Evaluation

Facility Name	New Brighton WWTP
Permit No.	PA0026026
Design Flow (MGD)	2
Q_{7-10} Flow (cfs)	640
PMF_a	0.0021
PMF_c	0.01

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/1/19	8/31/20	8/29/21	8/31/22
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/1/19	8/31/20	8/29/21	8/31/22
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/1/19	9/1/20	8/31/21	8/30/22
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/1/19	9/1/20	8/31/21	8/30/22
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**33** % Effluent
Dilution Series	**8, 17, 33, 67, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	