pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0001228**
Facility Type	**Industrial**	APS ID	**1082451**
Major / Minor	**Minor**	Authorization ID	**1429396**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Curtiss Wright Electro-Mechanical Corporation**	Facility Name	**Curtiss Wright Electro-Mechanical Corporation (EMD)**
Applicant Address	1000 Wright Way	Facility Address	1000 Wright Way
	Cheswick, PA 15024-1008		Cheswick, PA 15024-1008
Applicant Contact	Brian Eckels	Facility Contact	Hannah Gibson
Applicant Phone	724-275-5000	Facility Phone	724-275-5013
Applicant email	beckels@curtisswright.com	Contact email	hgibson@curtisswright.com
Client ID	208140	Site ID	241874
SIC Code	3621	Municipality	Harmar Township
SIC Description	Manufacturing - Motors And Generators	County	Allegheny
Date Application Received	March 2, 2023	EPA Waived?	Yes
Date Application Accepted	June 30, 2023	If No, Reason	

Purpose of Application: Renewal NPDES Permit Cover

Summary of Review

The Department received an application from Curtiss Wright Electro-Mechanical Corporation (CW-EMD) for renewal of its NPDES permit on March 2, 2023. The site operations consist of manufacturing and testing of mechanical equipment with SIC codes of 3561 (Pumps and Pumping Engineering), 3621 (Motors and Generators), and 3559 (Nuclear Control Rod Drive Mechanisms). CW-EMD is proposing two new internal monitoring points (IMP) for additional discharges of industrial waste similar to the wastewater that discharge via the site's other IMPs.

CW-EMD manufactures pumps, motors, generators and other components for both nuclear and non-nuclear applications. Activities include machining, cutting, grinding, welding and assembly of stainless-steel parts to fine tolerance. Also, the facility refurbishes, and repairs equipment used at existing nuclear power facilities. Repair and manufactured pumps are tested in "test loops". When testing occurs, water is continuously recirculated throughout the test loop so the pumps can be evaluated under various conditions. Test runs can last from a few days to multiple months. Discharges of test loop water occur when a pump is inserted or removed from the test loop. This results in batch discharges.

Due to the nature of the activities conducted at the site, CW-EMD would be subject to Federal Effluent Limitation Guidelines under 40 CFR 439 (Metal Product & Machinery). For the reasons detailed in the following paragraphs however, the Federal ELGs are not applicable. The general applicability description for the MP&M ELGs under 40 CFR § 438.1(a) states:

> As defined more specifically in subpart A, except as provided in paragraphs (b) through (e) of this section, this part applies to process wastewater discharges from oily operations (as defined at §438.2(f) and appendix B of this part) to surface waters from existing or new industrial facilities (including facilities owned and operated by Federal, State, or local governments) engaged in manufacturing, rebuilding, or maintenance of metal parts, products, or machines for

Approve	Deny	Signatures	Date
X		Adam Olesnanik, P.E. / Environmental Engineer	May 22, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	June 10, 2024

Summary of Review

use in the Metal Product & Machinery (MP&M) industrial sectors listed in this section. The MP&M industrial sectors consist of the following:

Aerospace; Aircraft; Bus and Truck; Electronic Equipment; Hardware; Household Equipment; Instruments; Miscellaneous Metal Products; Mobile Industrial Equipment; Motor Vehicle; Office Machine; Ordnance; Precious Metals and Jewelry; Railroad; Ships and Boats; or Stationary Industrial Equipment.

The 16 industrial sectors regulated by the MP&M ELGs include facilities that manufacture, maintain, and rebuild metal products under more than 200 different Standard Industrial Classification (SIC) codes. The three NAICS/SIC codes that CW-EMD operates under are 333911 (SIC 3561) – Pumps and Pumping Engineering, 335312 (SIC 3621) – Motors and Generators and 332410 (SIC 3559) – Nuclear Control Rod Drive Mechanisms.

Pursuant to Appendix A of the *Development Document for the Final Effluent Limitations Guidelines and Standards for the Metal Products and Machinery Point Source Category*, Curtis-Wright's SIC codes are covered under the Stationary Industrial Equipment MP&M industrial sectors (see Attachment A of this Fact Sheet for the relevant pages from Appendix A of the Development Document).

As described in § 438.1, the MP&M ELGs apply to process wastewater discharges from "oily operations" conducted at facilities within one of the 16 MP&M industrial sectors. "Oily operations" is defined in § 438.2(f):

Oily operations means one or more of the following: abrasive blasting; adhesive bonding; alkaline cleaning for oil removal; alkaline treatment without cyanide; aqueous degreasing; assembly/disassembly; burnishing; calibration; corrosion preventive coating (as defined in paragraph (c) of this section); electrical discharge machining; floor cleaning (in process area); grinding; heat treating; impact deformation; iron phosphate conversion coating; machining; painting-spray or brush (including water curtains); polishing; pressure deformation; solvent degreasing; steam cleaning; testing (e.g., hydrostatic, dye penetrant, ultrasonic, magnetic flux); thermal cutting; tumbling/barrel finishing/mass finishing/vibratory finishing; washing (finished products); welding; wet air pollution control for organic constituents; and numerous sub-operations within those listed in this paragraph. In addition, process wastewater also results from associated rinses that remove materials that the preceding processes deposit on the surface of the workpiece. These oily operations are defined in appendix B of this part.

CW-EMD grinds and welds metal parts, so it conducts "oily operations" that are subject to the limitations under Subpart A of 40 CFR Part 438. However, no process wastewater is generated from these industrial activities. Therefore, the limitations under Subpart A of 40 CFR Part 438 are not applicable at the discharges from the site and will not be imposed.

The site has six outfalls (001 through 006) and ten internal monitoring points (113, 123, 133, 303, 403, 603, 901, 903, 911, and 921). The purpose of having internal monitoring points is to monitor the discharge from the individual test loops that feed to Outfall 001 or Outfall 003. Outfalls 002, 003, 004, 005, and 006 discharge to an unnamed tributary to the Allegheny River designated in 25 PA Code, Chapter 93 as a Warm Water Fishery and Outfall 001 discharges to a drainage swale that discharges to the Allegheny River, designated in 25 PA Code, Chapter 93 as a Warm Water Fishery.

Outfall 001 discharges stormwater, non-contact cooling water, and receives the discharges from IMP 901, 911, and 921. IMP 901 receives discharge water from test loops using DI water. Outfall 001 will also receive wastewater from two new test loops, the flusher system (IMP 911) and the Hydro Test (IMP 921). The Flusher system is a manufacturing process which consists of a large inventory tank and circulation system that flushes DI water through manufactured heat exchangers. The Hydro test system is comprised of a set of pressure vessels that use DI water to test the resistance to water of manufactured products. The new test loops have similar characteristics to the other DI Test Loops, therefore the technology limitation that will be proposed for the two new IMPs will be similar to the DI Test Loop IMPs.

Outfall 003 discharges stormwater, non-contact cooling water, and receives the discharges from IMPs 113, 123, 133, 303, 403, 603, and 903. IMP 403 and 603 receive discharge water from test loops using DI water. IMP 113, 123, 303, and 903 receive discharge water from test loops that have lithium hydroxide as a chemical additive. IMP 133 received discharge water from a test loop using filtered well water

Outfall 004 received non-contact cooling water and stormwater.

Outfalls 002, 005, and 006 discharge stormwater.

Summary of Review

The DI Water Test Loops include the Secondary Propulsion Unit (SPU) (IMP 901), the Flusher System (IMP 911), the Hydro Test (IMP 921), Test Loop P (IMP 403), and Test Loop M (IMP 603). De-ionized water ("DI") is used as the primary process water in all of the test loops whenever water will be in contact with the test equipment. DI is used to minimize the accumulation of trace contaminants on the equipment during the product test phase.

The Lithium Hydroxide Test Loops include Test Loop K (IMP 113), Test Loop Z (IMP 123), Test Loop X (IMP 303), and Test Loop Y (IMP 903). Lithium Hydroxide ("LiOH") is used to inhibit corrosion and pH adjustment within the test loops. It emulates the water chemistry in which the final product will operate. The process water consists of deionized well water supplemented with up to 50 $^{mg}/_{L}$ of LiOH to prevent corrosion within the system. The addition of LiOH results in high pH concentrations. The waster within the test loops using lithium hydroxide is treated with the pH neutralization units prior to discharge. The treatment units consist of ion exchange resin beds with calcium carbonate polishing.

The Raw Water Test Loop consists of Test Loop Y-2 (IMP 133). This test loop consists of a submersible pump that is submerged during the test. The test is conducted in an open-top tank, filled with approximately 20,000 gallons of cooling water. Well water is used as the cooling water, which continuously flows into and out of the tank. No chemical additives will be used in the process. The well water used as cooling water will contact the exterior of the pump. A closed loop piping system of primary test water flows through the pump. Water from the cooling tower is used as the primary water, which discharges to the sanitary sewer. This test loop did not operate during the previous permit term.

The site was last inspected on July 18, 2023, no violations were noted.

The permittee has no open violations.

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 (IMP 901, 911, and 921)	Design Flow (MGD)	0.249
Latitude	40º 33' 00"	Longitude	-79º 48' 30"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	IW Process Effluent without ELG, NCCW, Stormwater		
Receiving Waters	Allegheny River (via drainage swale/Cheswick MS4)	Stream Code	42122
NHD Com ID	123972850	RMI	15.2
Drainage Area	11,500	Yield (cfs/mi^2)	0.208
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	736	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Oakmont Borough Municipal Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.3	Distance from Outfall (mi)	1.9

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	40º 32' 55"	Longitude	-79º 48' 50"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Allegheny River	Stream Code	42368
NHD Com ID	123972784	RMI	0.6
Drainage Area	0.34	Yield (cfs/mi^2)	0.0057
Q_{7-10} Flow (cfs)	0.00193	Q_{7-10} Basis	USGS Streamstats
Elevation (ft)	900	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	Oakmont Borough Municipal Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.3	Distance from Outfall (mi)	2.03

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003 (IMP 113, 123, 303, 403, 603, 903, & 133)	Design Flow (MGD)	0.248
Latitude	40º 33' 10"	Longitude	-79º 48' 50"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	IW Process Effluent without ELG, NCCW, Stormwater		
Receiving Waters	Unnamed Tributary to Allegheny River	Stream Code	42368
NHD Com ID	123972662	RMI	0.80
Drainage Area	0.11	Yield (cfs/mi^2)	0.0817
Q_{7-10} Flow (cfs)	0.00049	Q_{7-10} Basis	USGS Streamstats
Elevation (ft)	900	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Oakmont Borough Municipal Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.3	Distance from Outfall (mi)	2.24

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0.35
Latitude	40º 33' 00"	Longitude	-79º 48' 50"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	NCCW, Stormwater		
Receiving Waters	Unnamed Tributary to Allegheny River	Stream Code	42368
NHD Com ID	123972784	RMI	0.6
Drainage Area	0.29	Yield (cfs/mi^2)	0.0055
Q_{7-10} Flow (cfs)	0.00159	Q_{7-10} Basis	USGS Streamstats
Elevation (ft)	900	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Oakmont Borough Municipal Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.3	Distance from Outfall (mi)	2.03

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0
Latitude	40º 33' 10"	Longitude	-79º 48' 50"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Allegheny River	Stream Code	42368
NHD Com ID	123972662	RMI	0.97
Drainage Area	0.11	Yield (cfs/mi^2)	0.0817
Q_{7-10} Flow (cfs)	0.00049	Q_{7-10} Basis	USGS Streamstats
Elevation (ft)	900	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Oakmont Borough Municipal Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.3	Distance from Outfall (mi)	2.24

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0
Latitude	40º 33' 9.0"	Longitude	-79º 48' 53"
Quad Name	New Kensington West	Quad Code	1407
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Allegheny River	Stream Code	42122
NHD Com ID	123972662	RMI	0.97
Drainage Area	0.11	Yield (cfs/mi^2)	0.0817
Q_{7-10} Flow (cfs)	0.00049	Q_{7-10} Basis	USGS Streamstats
Elevation (ft)	900	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Oakmont Borough Municipal Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.3	Distance from Outfall (mi)	2.24

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0.249
Latitude	40º 33' 0.00"	**Longitude**	-79º 48' 30.00"

Wastewater Description: Stormwater, Non-Contact Cooling water and process wastewater from IMP 901, 911 and 921

Technology Based Effluent Limits

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) as indicated in Table 1.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1) as indicated in Table 1

Temperature limits will be imposed per the Department's "*Implementation Guidance for Temperature Criteria*." As a policy, DEP normally imposes a maximum temperature limit of 110°F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water.

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific BPJ evaluation. The analytical discharge data submitted with the application indicated that TRC is present in the discharge at 1.13 mg/L. Although chlorination isn't used at the facility, TRC being present in the discharge at this concentration indicates that some form of chorine is somehow getting into the wastewater or is being used in the process; thus, the limitations from 25 Pa. Code § 92a.48(b) must be imposed.

Table 1: Regulatory Effluent Standards and Monitoring Requirements for Outfall 001

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Temperature	-	110	°F
Total Residual Chlorine	0.5	1.0	mg/L
pH	Not less than 6.0 nor greater than 9.0		S.U.

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS consistent with an EPA memorandum that provides guidance to states for addressing PFAS discharges. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects 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 should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

CW-EMD's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA's guidance, CW-EMD does not operate in one of the industries EPA expects to be a source for PFAS. Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032. Even though CW-EMD did not report results for PFOA, PFOS, PFBS, and HFPO-DA on the permit application, the facility operates in a suspected non-source industry, which would subject CW-EMD to the annual monitoring requirements described in Section II.I.b of the SOP.

As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive annual results in CW-EMD's case), then the monitoring may be discontinued.

Water Quality Based Effluent Limits

Toxic Pollutants Water Quality Analysis

Due to the nature of the discharge, water quality analyses for toxics will be conducted at the IMPs that discharge to this outfall and if any water quality-based effluent limits are determined, they will be imposed at the IMPs.

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using DEP's "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate ($Q_{7\text{-}10}$ or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

Since the temperature criteria from 25 Pa. Code Chapter 93.7(a) are expressed on monthly and semi-monthly bases for three different aquatic life-uses—cold water fishes, warm water fishes and trout stocking—the program generates monthly and semi-monthly limits for each use. DEP selects the output that corresponds to the aquatic life-use of the receiving stream and consequently which limits apply to the discharge. Temperature WLAs are bounded by an upper limit of 110°F for the safety of sampling personnel and anyone who may come into contact with the heated discharge where it enters the receiving water. If no WLAs below 110°F are calculated, an instantaneous maximum limit of 110°F is recommended by the program.

Discharges from Outfall 001 are classified under Case 2 because water is obtained via groundwater wells. The results of the thermal analysis, included in Attachment D, indicate that no WQBELs for temperature are required at Outfall 001.

Total Residual Chlorine

Although chlorination isn't used at the facility, the analytical discharge data submitted with the application indicated that TRC is present in the discharge; therefore, the discharge must be analyzed to determine in WQBELs are required for TRC. To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream

and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and chlorine demands for the receiving stream and the discharge, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/l from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is imposed in the permit. The results of the modeling, included in Attachment E, indicate that no WQBELs are required for TRC at Outfall 001.

Anti-Backsliding

The previous permit limitations are displayed below in Table 2 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 2: Current Effluent Limitations for Outfall 001

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample type
Flow (MGD)	Monitor and Report		2/month	Estimate
Temperature (°F)	-	110	2/month	I-S
Manganese, total (mg/L)	Monitor and Report		2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for Outfall 001

The effluent limitations and monitoring frequencies for Outfall 001 are displayed below in Table 3 and 4**.** Based on the limitation development above Outfall 001 will receive new limitations for TRC. At this time CW-EMD may not be able to achieve the new limits upon permit issuance, the Department is granting a one-year compliance schedule for CW-EMD to come into compliance with the new limits. During the interim period, a monitor and report requirement will be imposed for Total Residual Chloride and the final limits will become effective one year after permit issuance date.

Table 3: Proposed Interim Effluent Limitations for Outfall 001

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Temperature (°F)	XXX	XXX	XXX	110	2/month	I-S
Manganese, Total (mg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Residual Chloride (mg/L)	XXX	Report	Report	XXX	2/month	Grab
PFOA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFOS (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFBS (ng/L)	XXX	Report	Report	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Table 4: Proposed Final Effluent Limitations for Outfall 001

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Temperature (°F)	XXX	XXX	XXX	110	2/month	I-S
Manganese, Total (mg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Residual Chloride (mg/L)	XXX	0.5	1.0	XXX	2/month	Grab
PFOA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFOS (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFBS (ng/L)	XXX	Report	Report	XXX	1/year	Grab

Table 4: Proposed Final Effluent Limitations for Outfall 001

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
HFPO-DA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Development of Effluent Limitations

IMP.	901	**Design Flow (MGD)**	0.001
Latitude	40º 33' 8"	**Longitude**	-79º 48' 42"

Wastewater Description: Process Wastewater from the secondary propulsion unit

Technology Based Effluent limits

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 5: TBELs for IMP 901 –

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 901

Discharges from IMP 901 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 6. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring

requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment F of this Fact Sheet. Based on the results from Toxics Management Spread Sheet no water quality-based effluent limitations or monitoring requirements are prescribed for the discharges from IMP 901.

Table 6: TMS Inputs for IMP 901

Parameter	**Value**
River Mile Index	15.2
Discharge Flow (MGD)	0.001
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	11,500
Q_{7-10} (cfs)	2,390
Low-flow yield (cfs/mi^2)	0.208
Elevation (ft)	736
Slope	0.0001

Anti-Backsliding

The previous permit limitations are displayed below in Table 7 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 7: Previous Effluent Limitations for IMP 901

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for IMP 901

The effluent limitations and monitoring frequencies for IMP 901 are displayed below in Table 8.

Table 8: Proposed Effluent Limitations for IMP 901

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Iron, dissolved (mg/L)	XXX	Report	7.0	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Development of Effluent Limitations

IMP.	911	**Design Flow (MGD)**	0.001
Latitude	40º 33' 8"	**Longitude**	-79º 48' 42"

Wastewater Description: Process Wastewater from the Flusher System

Technology Based Effluent limits

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 9: TBEL for IMP 911

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

As non-contact cooling water, temperature limitations are required; however, the temperature limitations will not be imposed at the internal monitoring point and are imposed at the discharge point, Outfall 001. The Temperature is limited at the discharge point because the waste streams from the other IMPs can combine and influence the temperature of the discharge.

The discharge is similar to the other DI Water test loop discharges at the site; therefore, the limits imposed on the other IMPs for the Test Loop discharges will be imposed at IMP 911. These limitations were originally imposed on a BPJ basis using limitations that are imposed on hydrostatic testing discharges.

Table 10: Proposed BPJ Limits at IMP 911

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Water Quality Based Effluent Limits

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet (“TMS”) to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 911

Discharges from IMP 911 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 11. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment G of this Fact Sheet. Based on the results from Toxics Management Spread Sheet no water quality-based effluent limitations or monitoring requirements are prescribed for the discharges from IMP 911.

Table 11: TMS Inputs for IMP 911

Parameter	**Value**
River Mile Index	15.2
Discharge Flow (MGD)	0.000012
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	11,500
Q_{7-10} (cfs)	2,390
Low-flow yield (cfs/mi^2)	0.208
Elevation (ft)	736
Slope	0.0001

Anti-Backsliding

The previous permit limitations imposed at IMP 911 can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l); however, IMP 911 is new to the permit and does not have existing limitations imposed in the current permit.

Final Effluent Limitations for IMP 911

The effluent limitations and monitoring frequencies for IMP 911 are displayed below in Table 12.

Table 12: Proposed Interim Effluent Limitations for IMP 911

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Iron, dissolved (mg/L)	XXX	Report	7.0	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Development of Effluent Limitations

IMP.	921	**Design Flow (MGD)**	0.001
Latitude	40º 33' 8"	**Longitude**	-79º 48' 42"

Wastewater Description: Process Wastewater from the Hydro Test

Technology Based Effluent limits

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 13: TBEL for IMP 921

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

As non-contact cooling water, temperature limitations are required; however, the temperature limitations will not be imposed at the internal monitoring point and are imposed at the discharge point, Outfall 001. The Temperature is limited at the discharge point because the waste streams from the other IMPs can combine and influence the temperature of the discharge.

The discharge is similar to the other DI Water test loop discharges at the site; therefore, the limits imposed on the other IMPs for the Test Loop discharges will be imposed at IMP 921. These limitations were originally imposed on a BPJ basis using limitations that are imposed on hydrostatic testing discharges.

Table 14: Proposed BPJ Limits at IMP 921

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Water Quality Based Effluent Limits

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet (“TMS”) to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 921

Discharges from IMP 921 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 15. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment H of this Fact Sheet. Based on the results from Toxics Management Spread Sheet no water quality-based effluent limitations or monitoring requirements are prescribed for the discharges from IMP 921.

Table 15: TMS Inputs for IMP 921

Parameter	**Value**
River Mile Index	15.2
Discharge Flow (MGD)	0.00002
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	11,500
Q_{7-10} (cfs)	2,390
Low-flow yield (cfs/mi^2)	0.208
Elevation (ft)	736
Slope	0.0001

Anti-Backsliding

The previous permit limitations imposed at IMP 921 can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l); however, IMP 921 is new to the permit and does not have existing limitations imposed in the current permit.

Final Effluent Limitations for IMP 921

The effluent limitations and monitoring frequencies for IMP 921 are displayed below in Table 16

Table 16: Proposed Interim Effluent Limitations for IMP 921

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Iron, dissolved (mg/L)	XXX	Report	7.0	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	0.248
Latitude	40º 33' 10.00"	**Longitude**	-79º 48' 50.00"

Wastewater Description: non-contact cooling water from IMPs 203, 303, 403, 603, 703, 903, 113 and stormwater runoff

Technology Based Effluent Limits

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Temperature limits will be imposed per the Department's "*Implementation Guidance for Temperature Criteria*." As a policy, DEP normally imposes a maximum temperature limit of 110°F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water.

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific BPJ evaluation. The analytical discharge data submitted with the application indicated that TRC is present in the discharge at 1.14 mg/L. Although chlorination isn't used at the facility, TRC being present in the discharge at this concentration indicates that some form of chorine is somehow getting into the wastewater or being used in the process; thus, the limitations from 25 Pa. Code § 92a.48(b) must be imposed.

Table 17: Regulatory Effluent Standards and Monitoring Requirements for Outfall 003

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Temperature	-	110	°F
Total Residual Chlorine	0.5	1.0	mg/L
pH	Not less than 6.0 nor greater than 9.0		S.U.

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS consistent with an EPA memorandum that provides guidance to states for addressing PFAS discharges. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects 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 should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

CW-EMD's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA's guidance, CW-EMD does not operate in one of the industries EPA expects to be a source for PFAS. Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032. Even though CW-EMD did not report results for PFOA, PFOS, PFBS, and HFPO-DA on the permit application, as a facility operating in a suspected non-source industry, CW-EMD is subject to the annual monitoring requirements described in Section II.I.b of the SOP.

As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive annual results in CW-EMD's case), then the monitoring may be discontinued.

Water Quality Based Effluent Limits

Toxic Pollutants Water Quality Analysis

Due to the nature of the discharge, water quality analyses for toxics will be conducted for the IMPs that discharge to this outfall and if any water quality-based effluent limits are determined, they will be imposed at the IMPs.

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using DEP's "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate ($Q_{7\text{-}10}$ or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

Since the temperature criteria from 25 Pa. Code Chapter 93.7(a) are expressed on monthly and semi-monthly bases for three different aquatic life-uses—cold water fishes, warm water fishes and trout stocking—the program generates monthly and semi-monthly limits for each use. DEP selects the output that corresponds to the aquatic life-use of the receiving stream and consequently which limits apply to the discharge. Temperature WLAs are bounded by an upper limit of 110°F for the safety of sampling personnel and anyone who may come into contact with the heated discharge where it enters the receiving water. If no WLAs below 110°F are calculated, an instantaneous maximum limit of 110°F is recommended by the program.

Discharges from Outfall 003 are classified under Case 2 because water is obtained via groundwater wells. The results of the thermal analysis, included in Attachment J, indicate that WQBELs for temperature are required at Outfall 003 and are displayed below in Table 18.

Table 18. Thermal limitations at Outfall 003

Monitoring Period	Instantaneous Maximum Temperature Limits (ºF)
Jan 1 -31	40.0
Feb 1-29	40.0

Mar 1-31	46.1
Apr 1-15	52.1
April 16-30	58.1
May 1-15	64.0
May 16-30	72.1
Jun 1-15	80.0
Jun 16-30	84.0
Jul 1-31	87.0
Aug 1-15	87.0
Aug 16-30	87.0
Sep 1-15	84.0
Sep 16-30	78.0
Oct 1-15	72.0
Oct 16-31	66.0
Nov 1-15	58.0
Nov 16-30	50.0
Dec 1-31	42.0

Total Residual Chlorine

Although chlorination isn't used at the facility, the analytical discharge data submitted with the application indicated that TRC is present in the discharge; therefore, the discharge must be analyzed to determine in WQBELs are required for TRC. To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and chlorine demands for the receiving stream and the discharge, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/l from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is imposed in the permit. The results of the modeling, included in Attachment K, indicate that WQBELs are required for TRC at Outfall 003. The TRC limitation that the model proposed are an average monthly limit of 0.011 mg/L and a daily maximum limit of 0.027 mg/L.

Anti-Backsliding

The previous permit limitations are displayed below in Table 19 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 19: Current Effluent Limitations for Outfall 003

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample type
Flow (MGD)	Monitor and Report		2/month	Estimate
Temperature (°F)	-	110	2/month	I-S
Manganese, total (mg/L)	Monitor and Report		2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for Outfall 003

The effluent limitations and monitoring frequencies for Outfall 003 are displayed below in Table 20 and 21**.** Based on the limitation development above Outfall 003 will receive new WQBELs for Temperature and TRC. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance, therefore in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. During the interim period, the previous temperature limit will be imposed, and a monitor and report requirement will be imposed for Total Residual Chloride. Additionally, the calculated Limits for Total Residual Chlorine (TRC) are the limits necessary to comply with state water quality standards. The Monthly Average Limit is lower than the

Quantitation Limit (QL), as defined in 25 Pa. Code § 252.1, of the most sensitive existing EPA-approved (40 CFR Part 136) test method or other DEP-approved method. If the sensitivity of the specified method improves or a more sensitive test method becomes available, DEP may modify the permit to require use of the more sensitive method. TRC shall be analyzed to achieve a QL of 0.02 mg/l or less. For the purpose of compliance, a statistical value reported on the DMR that is less than the QL (i.e., "non-detect") will be considered to be in compliance.

Table 20: Proposed Interim Effluent Limitations for Outfall 003

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Temperature (°F)	XXX	XXX	XXX	110	2/month	I-S
Manganese, Total (mg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Residual Chloride (mg/L)	XXX	Report	Report	XXX	2/month	Grab
PFOA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFOS (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFBS (ng/L)	XXX	Report	Report	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Table 21: Proposed Final Effluent Limitations for Outfall 003

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Temperature (°F) Jan 1-31 Feb 1-29 Mar 1-31 Apr 1-15 Apr 16-30 May 1-15 May 16-30 Jun 1-15 Jun 16-30 Jul 1-31 Aug 1-15 Aug 16-31 Sep 1-15 Sep 16-30 Oct 1-15 Oct 16-31 Nov 1-15 Nov 16-30 Dec 1-31	XXX	XXX	XXX	40.0 40.0 46.1 52.1 58.1 64.0 72.1 80.0 84.0 87.0 87.0 87.0 84.0 78.0 72.0 66.0 58.0 50.0 42.0	2/month	I-S
Manganese, Total (mg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Residual Chloride (mg/L)	XXX	0.011	0.027	XXX	2/month	Grab
PFOA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFOS (ng/L)	XXX	Report	Report	XXX	1/year	Grab
PFBS (ng/L)	XXX	Report	Report	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	Report	Report	XXX	1/year	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Development of Effluent Limitations

IMP.	113	**Design Flow (MGD)**	0.0025
Latitude	40º 33' 08	**Longitude**	-79º 48' 42"
Wastewater Description:	Lithium Hydroxide wastewater (Test Loop K)		

Technology Based Effluent limits:

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 22: TBEL for IMP 113

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 113

Discharges from IMP 113 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 23. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or

exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment L of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 24. Note that the TMS recommended limitation for Acrylamide. CW-EMD has certified that none of the chemicals used at the facility contain Acrylamide; therefore, limitation for Acrylamide will not be imposed.

Table 23: TMS Inputs for IMP 113

Parameter	**Value**
River Mile Index	0.8
Discharge Flow (MGD)	0.0025
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.11
Q_{7-10} (cfs)	0.00049
Low-flow yield (cfs/mi^2)	0.0817
Elevation (ft)	900
Slope	0.0001

Table 24: Water Quality Based Effluent Limitations at IMP 113

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Total Aluminum (µg/L)	Report	Report	290	10
Total Antimony (µg/L)	Report	Report	0.8	2
Total Cadmium (µg/L)	0.14	0.22	0.53	0.2
Total Chromium (III) (µg/L)	40.4	63.1	51	4.0
Hexavalent Chromium (µg/L)	11.7	18.3	48	1.0
Total Copper (µg/L)	4.21	5.76	13	4.0
Dissolved Iron (µg/L)	338	527	610	20
Total Iron (µg/L)	1690	2637	4100	20
Total Lead (µg/L)	0.92	1.43	0.7	1.0
Total Manganese (µg/L)	Report	Report	360	2.0
Total Selenium (µg/L)	Report	Report	0.9	5.0
Total Silver (µg/L)	Report	Report	0.28	0.4
Total Thallium (µg/L)	0.27	0.42	1.2	2.0
Total Zinc (µg/L)	Report	Report	18	5.0
Benzo(a)Anthracene (µg/L)	0.003	0.005	1.0	2.5
Benzo(a)Pyrene(µg/L)	0.0003	0.0005	0.6	2.5
3,4-Benxofluoranthene (µg/L)	0.003	0.005	1.3	2.5
Benzo(k)Fluoranthene (µg/L)	0.035	0.054	1.1	2.5
Bis(2-Ethylhexyl)Phthalate (µg/L)	1.11	1.73	26	5.0
Chrysene (µg/L)	0.42	0.65	0.94	2.5
Dibenzo (a, h) Anthracene (µg/L)	0.0003	0.0005	1.0	2.5

Table 24: Water Quality Based Effluent Limitations at IMP 113

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Hexachlorobenzene (µg/L)	0.0003	0.0004	0.25	5.0

Anti-Backsliding:

The previous permit limitations are displayed below in Table 25 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 25: Previous Effluent Limitations for IMP 113

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for IMP 113

The effluent limitations and monitoring frequencies for IMP 113 are displayed below in Table 26 and 27**.** Based on the limitation development above, the IMP will receive new WQBELs. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance; therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. Monitor and report requirements will be imposed for the new parameters during the interim period, and the final WQBELs will be imposed three years after the permit effective date. Please note that Total Cadmium, Total Lead, Total Thallium, Benzo(a)Anthracene, Benzo(a)Pyrene, 3,4-Benxofluoranthene, Benzo(k)Fluoranthene, Bis(2-Ethylhexyl)Phthalate, Chrysene, Dibenzo (a,h) Anthracene, and Hexachlorobenzene are subject to water quality-based effluent limits (WQBELs) that are necessary to comply with state water quality standards, but may be less than quantitation limits (QLs), as defined in 25 Pa. Code § 252.1, that are generally achievable by conventional analytical technology. The permittee shall analyze the parameter(s) using methods that will achieve the Department Target QL(s). For the purpose of compliance, a statistical value reported on the DMR that is less than the QL(s) (i.e., "non-detect") will be considered to be in compliance.

Table 26: Proposed Interim Effluent Limitations for IMP 113

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Copper (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Iron (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Lead (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Pyrene(µg/L)	XXX	Report	Report	XXX	2/month	Grab
3,4-Benxofluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	Report	Report	XXX	2/month	Grab

Table 26: Proposed Interim Effluent Limitations for IMP 113

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Chrysene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Table 27: Proposed Final Effluent Limitations for IMP 113

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	0.14	0.22	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	40.4	63.1	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	11.7	18.3	XXX	2/month	Grab
Total Copper (µg/L)	XXX	4.21	5.76	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	338	527	XXX	2/month	Grab
Total Iron (µg/L)	XXX	1690	2637	XXX	2/month	Grab
Total Lead (µg/L)	XXX	0.92	1.43	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	0.27	0.42	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	0.003	0.005	XXX	2/month	Grab
Benzo(a)Pyrene(µg/L)	XXX	0.0003	0.0005	XXX	2/month	Grab
3,4-Benxofluoranthene (µg/L)	XXX	0.003	0.005	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	0.035	0.054	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	1.11	1.73	XXX	2/month	Grab
Chrysene (µg/L)	XXX	0.42	0.65	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	0.0003	0.0005	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	0.0003	0.0004	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Development of Effluent Limitations

IMP. 123 **Design Flow (MGD)** 0.002
Latitude 40º 33' 08" **Longitude** -79º 48' 42"
Wastewater Description: Lithium Hydroxide wastewater (Test Loop Z)

Technology Based Effluent limits:

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 28: TBELs for IMP 123

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 123

Discharges from IMP 123 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 29. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent

limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment M of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 30. Note that the TMS recommended limitation for Acrylamide. CW-EMD has certified that none of the chemicals used at the facility contain Acrylamide; therefore, effluent limitations for Acrylamide will not be imposed.

Table 29: TMS Inputs for IMP 123

Parameter	**Value**
River Mile Index	0.8
Discharge Flow (MGD)	0.002
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.11
Q_{7-10} (cfs)	0.00049
Low-flow yield (cfs/mi^2)	0.0817
Elevation (ft)	900
Slope	0.0001

Table 30: Water Quality Based Effluent Limitations at IMP 123

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Total Aluminum (µg/L)	Report	Report	290	10
Total Antimony (µg/L)	Report	Report	0.8	2
Total Cadmium (µg/L)	0.15	0.23	0.53	0.2
Total Chromium (III) (µg/L)	43.4	67.6	51	4.0
Hexavalent Chromium (µg/L)	12.0	18.85	48	1.0
Total Copper (µg/L)	4.53	6.21	13	4.0
Dissolved Iron (µg/L)	348	542	610	20
Total Iron (µg/L)	1738	2711	4100	20
Total Lead (µg/L)	1.01	1.57	0.7	1.0
Total Manganese (µg/L)	Report	Report	360	2.0
Total Selenium (µg/L)	Report	Report	0.9	5.0
Total Silver (µg/L)	Report	Report	0.28	0.4
Total Thallium (µg/L)	0.28	0.43	1.2	2.0
Total Zinc (µg/L)	Report	Report	18	5.0
Benzo(a)Anthracene (µg/L)	0.004	0.006	1.0	2.5
Benzo(a)Pyrene(µg/L)	0.0004	0.0006	0.6	2.5
3,4-Benxofluoranthene (µg/L)	0.004	0.006	1.3	2.5
Benzo(k)Fluoranthene (µg/L)	0.041	0.064	1.1	2.5
Bis(2-Ethylhexyl)Phthalate (µg/L)	1.3	2.03	26	5.0
Chrysene (µg/L)	0.49	0.76	0.94	2.5

Table 30: Water Quality Based Effluent Limitations at IMP 123

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Dibenzo (a, h) Anthracene (µg/L)	0.0004	0.0006	1.0	2.5
Hexachlorobenzene (µg/L)	0.0003	0.0005	0.25	5.0

Anti-Backsliding:

The previous permit limitations are displayed below in Table 31 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 31: Previous Effluent Limitations for IMP 123

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for IMP 123

The effluent limitations and monitoring frequencies for IMP 123 are displayed below in Table 32 and 33**.** Based on the limitation development above, the IMP will receive new WQBELs. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance; therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. Monitor and report requirements will be imposed for the new parameters during the interim period, and the final WQBELs will be imposed three years after the permit effective date. Please note that Total Cadmium, Total Thallium, Benzo(a)Anthracene, Benzo(a)Pyrene, 3,4-Benxofluoranthene, Benzo(k)Fluoranthene, Bis(2-Ethylhexyl)Phthalate, Chrysene, Dibenzo (a,h) Anthracene, and Hexachlorobenzene are subject to water quality-based effluent limits (WQBELs) that are necessary to comply with state water quality standards, but may be less than quantitation limits (QLs), as defined in 25 Pa. Code § 252.1, that are generally achievable by conventional analytical technology. The permittee shall analyze the parameter(s) using methods that will achieve the Department Target QL(s). For the purpose of compliance, a statistical value reported on the DMR that is less than the QL(s) (i.e., "non-detect") will be considered to be in compliance.

Table 32: Proposed Interim Effluent Limitations for IMP 123

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Copper (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Iron (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Lead (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab

Table 32: Proposed Interim Effluent Limitations for IMP 123

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Benzo(a)Pyrene(µg/L)	XXX	Report	Report	XXX	2/month	Grab
3,4-Benxofluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Chrysene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Table 33: Proposed Final Effluent Limitations for IMP 123

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	0.15	0.23	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	43.4	67.6	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	12.0	18.85	XXX	2/month	Grab
Total Copper (µg/L)	XXX	4.53	6.21	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	348	542	XXX	2/month	Grab
Total Iron (µg/L)	XXX	1738	2711	XXX	2/month	Grab
Total Lead (µg/L)	XXX	1.01	1.57	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	0.28	0.43	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	0.004	0.006	XXX	2/month	Grab
Benzo(a)Pyrene(µg/L)	XXX	0.0004	0.0006	XXX	2/month	Grab
3,4-Benxofluoranthene (µg/L)	XXX	0.004	0.006	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	0.041	0.064	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	1.3	2.03	XXX	2/month	Grab
Chrysene (µg/L)	XXX	0.49	0.76	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	0.0004	0.0006	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	0.0003	0.0005	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Development of Effluent Limitations

IMP No. 133 **Design Flow (MGD)** 0.0288
Wastewater Description: Non-contact cooling water from Test Loop Y-2

Technology Based Effluent limits

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 34: TBELs for IMP 133

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality Based Effluent Limits

IMP 133 has not operated to produce a discharge during the previous permit cycle, as such, there is no discharge data available to conduct a toxic pollutant water quality analysis.

Anti-Backsliding:

The previous permit limitations are displayed below in Table 35 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 35: Previous Effluent Limitations for IMP 133

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Proposed Final Effluent Limitations for IMP 133

The proposed final effluent limitation and monitoring frequency for IMP 133 is displayed below in Table 36.

Table 36: Proposed Final Effluent Limitations for IMP 133

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	Report	7.0	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Development of Effluent Limitations

IMP.	303	**Design Flow (MGD)**	0.004
Latitude	40º 33' 8"	**Longitude**	-79º 48' 42"

Wastewater Description: Lithium Hydroxide wastewater (Test Loop X)

Technology Based Effluent limits:

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 37: TBELs for IMP 303

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 303

Discharges from IMP 303 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 38. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or

exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment N of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 39. Note that the TMS recommended limitation for Acrylamide. CW-EMD has certified that none of the chemicals used at the facility contain Acrylamide; therefore, limitation for Acrylamide will not be imposed.

Table 38: TMS Inputs for IMP 303

Parameter	**Value**
River Mile Index	0.8
Discharge Flow (MGD)	0.004
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.11
Q_{7-10} (cfs)	0.00049
Low-flow yield (cfs/mi^2)	0.0817
Elevation (ft)	900
Slope	0.0001

Table 39: Water Quality Based Effluent Limitations at IMP 303

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Total Aluminum (µg/L)	Report	Report	290	10
Total Antimony (µg/L)	Report	Report	0.8	2
Total Cadmium (µg/L)	0.12	0.19	0.53	0.2
Total Chromium (III) (µg/L)	36.0	56.2	51	4.0
Hexavalent Chromium (µg/L)	11.2	17.5	48	1.0
Total Copper (µg/L)	3.74	5.08	13	4.0
Dissolved Iron (µg/L)	324	505	610	20
Total Iron (µg/L)	1619	2526	4100	20
Total Lead (µg/L)	0.79	1.23	0.7	1.0
Total Manganese (µg/L)	Report	Report	360	2.0
Total Selenium (µg/L)	Report	Report	0.9	5.0
Total Silver (µg/L)	0.52	0.56	0.28	0.4
Total Thallium (µg/L)	0.26	0.4	1.2	2.0
Total Zinc (µg/L)	Report	Report	18	5.0
Benzo(a)Anthracene (µg/L)	0.003	0.004	1.0	2.5
Benzo(a)Pyrene(µg/L)	0.0003	0.0004	0.6	2.5
3,4-Benxofluoranthene (µg/L)	0.003	0.004	1.3	2.5
Benzo(k)Fluoranthene (µg/L)	0.025	0.04	1.1	2.5
Bis(2-Ethylhexyl)Phthalate (µg/L)	0.81	1.27	26	5.0
Chrysene (µg/L)	0.3	0.47	0.94	2.5
Dibenzo (a, h) Anthracene (µg/L)	0.0003	0.0004	1.0	2.5

Table 39: Water Quality Based Effluent Limitations at IMP 303

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Hexachlorobenzene (µg/L)	0.0002	0.0003	0.25	5.0

Anti-Backsliding:

The previous permit limitations are displayed below in Table 40 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 40: Previous Effluent Limitations for IMP 303

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for IMP 303

The effluent limitations and monitoring frequencies for IMP 303 are displayed below in Table 41 and 42**.** Based on the limitation development above, the IMP will receive new WQBELs. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance; therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. Monitor and report requirements will be imposed for the new parameters during the interim period, and the final WQBELs will be imposed three years after the permit effective date. Please note that Total Cadmium, Total Copper, Total Lead, Total Thallium, Benzo(a)Anthracene, Benzo(a)Pyrene, 3,4-Benxofluoranthene, Benzo(k)Fluoranthene, Bis(2-Ethylhexyl)Phthalate, Chrysene, Dibenzo (a,h) Anthracene, and Hexachlorobenzene are subject to water quality-based effluent limits (WQBELs) that are necessary to comply with state water quality standards, but may be less than quantitation limits (QLs), as defined in 25 Pa. Code § 252.1, that are generally achievable by conventional analytical technology. The permittee shall analyze the parameter(s) using methods that will achieve the Department Target QL(s). For the purpose of compliance, a statistical value reported on the DMR that is less than the QL(s) (i.e., "non-detect") will be considered to be in compliance.

Table 41: Proposed Interim Effluent Limitations for IMP 303

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Copper (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Iron (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Lead (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Pyrene(µg/L)	XXX	Report	Report	XXX	2/month	Grab

Table 41: Proposed Interim Effluent Limitations for IMP 303

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
3,4-Benxofluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Chrysene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Table 42: Proposed Final Effluent Limitations for IMP 303

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	0.12	0.19	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	36.0	56.2	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	11.2	17.5	XXX	2/month	Grab
Total Copper (µg/L)	XXX	3.74	5.08	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	324	505	XXX	2/month	Grab
Total Iron (µg/L)	XXX	1619	2526	XXX	2/month	Grab
Total Lead (µg/L)	XXX	0.79	1.23	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	0.52	0.56	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	0.26	0.4	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	0.003	0.004	XXX	2/month	Grab
Benzo(a)Pyrene(µg/L)	XXX	0.0003	0.0004	XXX	2/month	Grab
3,4-Benxofluoranthene (µg/L)	XXX	0.003	0.004	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	0.025	0.04	XXX	2/month	Grab
Bis(2-Ethylhexyl) Phthalate (µg/L)	XXX	0.81	1.27	XXX	2/month	Grab
Chrysene (µg/L)	XXX	0.3	0.47	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	0.0003	0.0004	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	0.0002	0.0003	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Development of Effluent Limitations

IMP.	403	**Design Flow (MGD)**	0.0023
Latitude	40º 33' 08"	**Longitude**	-79º 48' 42"

Wastewater Description: De-ionized wastewater (Test Loop P)

Technology Based Effluent limits

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 43: TBELs for IMP 403

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 403

Discharges from IMP 403 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 44. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or

exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment O of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 45. Note that the TMS model recommended effluent limitations for Acrylamide. CW-EMD has certified that none of the chemicals used at the facility contain Acrylamide; therefore, limitations for Acrylamide will not be imposed.

Table 44: TMS Inputs for IMP 403

Parameter	**Value**
River Mile Index	0.8
Discharge Flow (MGD)	0.0023
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.11
Q_{7-10} (cfs)	0.00049
Low-flow yield (cfs/mi^2)	0.0817
Elevation (ft)	900
Slope	0.0001

Table 45: Water Quality Based Effluent Limitations at IMP 403

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Total Copper (µg/L)	1.95	2.46	76	4.0
Dissolved Iron (µg/L)	Report	Report	92	20
Total Lead (µg/L)	0.29	0.45	1.4	1.0
Total Nickel (µg/L)	11.1	17.3	98	4.0
Total Zinc (µg/L)	22.3	25.4	30.0	5.0
Bis(2-Ethylhexyl)Phthalate (µg/L)	Report	Report	0.326	5.0

Anti-Backsliding

The previous permit limitations are displayed below in Table 46 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 46: Previous Effluent Limitations for IMP 403

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for IMP 403

The effluent limitations and monitoring frequencies for IMP 403 are displayed below in Table 47 and 48**.** Based on the limitation development above, the IMP will receive new WQBELs. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance; therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. Monitor and report requirements will be imposed for the new parameters during the interim period, and the final WQBELs will be imposed three years after the permit effective date. Please note that Total Copper and Total Lead are subject to water quality-based effluent limits (WQBELs) that are necessary to comply with state water quality standards, but may be less than quantitation limits (QLs), as defined in 25 Pa. Code § 252.1, that are generally achievable by conventional analytical technology. The permittee shall analyze the parameter(s) using methods that will achieve the Department Target QL(s). For the purpose of compliance, a statistical value reported on the DMR that is less than the QL(s) (i.e., "non-detect") will be considered to be in compliance.

Table 47: Proposed Interim Effluent Limitations for IMP 403

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Iron, dissolved (mg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Copper (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Lead (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Nickel (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Table 48: Proposed Final Effluent Limitations for IMP 403

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Iron, dissolved (mg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Copper (µg/L)	XXX	1.95	2.46	XXX	2/month	Grab
Total Lead (µg/L)	XXX	0.29	0.45	XXX	2/month	Grab
Total Nickel (µg/L)	XXX	11.1	17.3	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	22.3	25.4	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Development of Effluent Limitations

IMP. 603 **Design Flow (MGD)** 0.0002
Latitude 40º 33' 08" **Longitude** -79º 48' 42"
Wastewater Description: De-ionized wastewater (Test Loop M)

Technology Based Effluent limits

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 49: TBELs for IMP 603 –

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 603

Discharges from IMP 603 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 50. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the

maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment P of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 51. Note that the TMS recommended limitation for Acrylamide. CW-EMD has certified that none of the chemicals used at the facility contain Acrylamide; therefore, limitation for Acrylamide will not be imposed.

Table 50: TMS Inputs for IMP 603

Parameter	**Value**
River Mile Index	0.8
Discharge Flow (MGD)	0.0002
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.11
Q_{7-10} (cfs)	0.00049
Low-flow yield (cfs/mi^2)	0.0817
Elevation (ft)	900
Slope	0.0001

Table 51: Water Quality Based Effluent Limitations at IMP 603

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Total Copper (µg/L)	14.8	23.1	76	4.0
Dissolved Iron (µg/L)	Report	Report	92	20
Total Lead (µg/L)	Report	Report	1.4	1.0
Total Nickel (µg/L)	90.0	140	98	4.0
Total Zinc (µg/L)	Report	Report	30.0	2.0

Anti-Backsliding

The previous permit limitations are displayed below in Table 52 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 52: Previous Effluent Limitations for IMP 603

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for IMP 603

The effluent limitations and monitoring frequencies for IMP 603 are displayed below in Table 53 and 54**.** Based on the limitation development above, the IMP will receive new WQBELs. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance; therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. Monitor and report requirements will be imposed for the new parameters during the interim period, and the final WQBELs will be imposed three years after the permit effective date.

Table 53: Proposed Interim Effluent Limitations for IMP 603

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Iron, dissolved (mg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Copper (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Lead (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Nickel (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Table 54: Proposed Final Effluent Limitations for IMP 603

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Iron, dissolved (mg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Copper (µg/L)	XXX	14.8	23.1	XXX	2/month	Grab
Total Lead (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Nickel (µg/L)	XXX	90.0	140	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	2/month	Grab

Development of Effluent Limitations

IMP.	903	**Design Flow (MGD)**	0.005
Latitude	40º 33' 08"	**Longitude**	-79º 48' 42"

Wastewater Description: Lithium Hydroxide wastewater (Test Loop Y)

Technology Based Effluent limits:

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Dissolved iron limitations are imposed pursuant to 25 Pa. Code §§ 95.2(4).

Table 55: TBELs for IMP 903

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, dissolved	Report	7.0	$^{mg}/_{L}$
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for IMP 903

Discharges from IMP 903 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion is considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 56. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent

limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment Q of this Fact Sheet. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 57. Note that the TMS model recommended effluent limitations for Acrylamide. CW-EMD has certified that none of the chemicals used at the facility contain Acrylamide; therefore, limitations for Acrylamide will not be imposed.

Table 56: TMS Inputs for IMP 903

Parameter	**Value**
River Mile Index	0.8
Discharge Flow (MGD)	0.005
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.11
Q_{7-10} (cfs)	0.00049
Low-flow yield (cfs/mi^2)	0.0817
Elevation (ft)	900
Slope	0.0001

Table 57: Water Quality Based Effluent Limitations at IMP 903

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Total Aluminum (µg/L)	Report	Report	290	10
Total Antimony (µg/L)	Report	Report	0.8	2
Total Cadmium (µg/L)	0.12	0.19	0.53	0.2
Total Chromium (III) (µg/L)	34.6	53.9	51	4.0
Hexavalent Chromium (µg/L)	11.1	17.2	48	1.0
Total Copper (µg/L)	3.59	4.85	13	4.0
Dissolved Iron (µg/L)	319	498	610	20
Total Iron (µg/L)	1595	2488	4100	20
Total Lead (µg/L)	0.74	1.16	0.7	1.0
Total Manganese (µg/L)	Report	Report	360	2.0
Total Selenium (µg/L)	Report	Report	0.9	5.0
Total Silver (µg/L)	0.49	0.52	0.28	0.4
Total Thallium (µg/L)	0.26	0.4	1.2	2.0
Total Zinc (µg/L)	Report	Report	18	5.0
Benzo(a)Anthracene (µg/L)	0.002	0.003	1.0	2.5
Benzo(a)Pyrene(µg/L)	0.0002	0.0003	0.6	2.5
3,4-Benxofluoranthene (µg/L)	0.002	0.003	1.3	2.5
Benzo(k)Fluoranthene (µg/L)	0.022	0.035	1.1	2.5
Bis(2-Ethylhexyl)Phthalate (µg/L)	0.71	1.11	26	5.0
Chrysene (µg/L)	0.27	0.42	0.94	2.5

Table 57: Water Quality Based Effluent Limitations at IMP 903

Parameters	Average Monthly	Daily Maximum	Discharge Concentration	Department's QLs
Dibenzo (a, h) Anthracene (µg/L)	0.0002	0.0003	1.0	2.5
Hexachlorobenzene (µg/L)	0.0002	0.0003	0.25	5.0

Anti-Backsliding:

The previous permit limitations are displayed below in Table 58 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 58: Previous Effluent Limitations for IMP 903

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample Type
Flow (MGD)	Monitor and Report		2/month	Estimate
Total Suspended Solids (mg/L)	30	60	2/month	Grab
Dissolved Oxygen (mg/L)	-	5.0 minimum	2/month	Grab
Iron, dissolved (mg/L)	Report	7.0	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		2/month	Grab

Final Effluent Limitations for IMP 903

The effluent limitations and monitoring frequencies for IMP 903 are displayed below in Table 59 and 60**.** Based on the limitation development above, the IMP will receive new WQBELs. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance; therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. Monitor and report requirements will be imposed for the new parameters during the interim period, and the final WQBELs will be imposed three years after the permit effective date. Please note that Total Cadmium, Total Copper, Total Lead, Total Thallium, Benzo(a)Anthracene, Benzo(a)Pyrene, 3,4-Benxofluoranthene, Benzo(k)Fluoranthene, Bis(2-Ethylhexyl)Phthalate, Chrysene, Dibenzo (a,h) Anthracene, and Hexachlorobenzene are subject to water quality-based effluent limits (WQBELs) that are necessary to comply with state water quality standards, but may be less than quantitation limits (QLs), as defined in 25 Pa. Code § 252.1, that are generally achievable by conventional analytical technology. The permittee shall analyze the parameter(s) using methods that will achieve the Department Target QL(s). For the purpose of compliance, a statistical value reported on the DMR that is less than the QL(s) (i.e., "non-detect") will be considered to be in compliance.

Table 59: Proposed Interim Effluent Limitations for IMP 903

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Copper (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	Report	7.0	XXX	2/month	Grab
Total Iron (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Lead (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Pyrene(µg/L)	XXX	Report	Report	XXX	2/month	Grab
3,4-Benxofluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	Report	Report	XXX	2/month	Grab

Table 59: Proposed Interim Effluent Limitations for IMP 903

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Chrysene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	Report	Report	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Table 60: Proposed Final Effluent Limitations for IMP 903

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/month	Estimate
Total Suspended Solids (mg/L)	XXX	30	60	XXX	2/month	Grab
Dissolved Oxygen (mg/L)	5.0	XXX	XXX	XXX	2/month	Grab
Total Aluminum (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Antimony (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Cadmium (µg/L)	XXX	0.12	0.19	XXX	2/month	Grab
Total Chromium (III) (µg/L)	XXX	34.6	53.9	XXX	2/month	Grab
Hexavalent Chromium (µg/L)	XXX	11.1	17.2	XXX	2/month	Grab
Total Copper (µg/L)	XXX	3.59	4.85	XXX	2/month	Grab
Dissolved Iron (µg/L)	XXX	319	498	XXX	2/month	Grab
Total Iron (µg/L)	XXX	1595	2488	XXX	2/month	Grab
Total Lead (µg/L)	XXX	0.74	1.16	XXX	2/month	Grab
Total Manganese (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Selenium (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Total Silver (µg/L)	XXX	0.49	0.52	XXX	2/month	Grab
Total Thallium (µg/L)	XXX	0.26	0.4	XXX	2/month	Grab
Total Zinc (µg/L)	XXX	Report	Report	XXX	2/month	Grab
Benzo(a)Anthracene (µg/L)	XXX	0.002	0.003	XXX	2/month	Grab
Benzo(a)Pyrene(µg/L)	XXX	0.0002	0.0003	XXX	2/month	Grab
3,4-Benxofluoranthene (µg/L)	XXX	0.002	0.003	XXX	2/month	Grab
Benzo(k)Fluoranthene (µg/L)	XXX	0.022	0.035	XXX	2/month	Grab
Bis(2-Ethylhexyl)Phthalate (µg/L)	XXX	0.71	1.11	XXX	2/month	Grab
Chrysene (µg/L)	XXX	0.27	0.42	XXX	2/month	Grab
Dibenzo (a, h) Anthracene (µg/L)	XXX	0.0002	0.0003	XXX	2/month	Grab
Hexachlorobenzene (µg/L)	XXX	0.0002	0.0003	XXX	2/month	Grab
pH (S.U.)	6.0	XXX	XXX	9.0.	2/month	Grab

Development of Effluent Limitations

Outfall No.	004	**Design Flow (MGD)**	0.053
Latitude	40º 33' 00"	**Longitude**	-79º 48' 50"

Wastewater Description: Non-Contact Cooling Water and Stormwater

Technology Based Effluent Limits

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1).

Temperature limits will be imposed per the Department's "*Implementation Guidance for Temperature Criteria*." As a policy, DEP normally imposes a maximum temperature limit of 110°F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water.

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific BPJ evaluation.

TRC was not analyzed in the discharge from Outfall 004 and chlorination isn't used at the facility, however, the other outfalls that discharge Non-Contact Cooling Water had detections of TRC in the discharge. Because TRC is present in the other Non-Contact Cooling Water, a monitor and report requirement will be imposed on Outfall 004 to verify that it is not present in the discharge.

Table 61: Regulatory Effluent Standards and Monitoring Requirements for Outfall 004

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Temperature	-	110	°F
Total Residual Chlorine	Report	Report	mg/L
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality Based Effluent Limits

Toxic Pollutants Water Quality Analysis

The discharges from Outfall 004 are non-contact cooling water and are non-process discharges, therefore a toxic pollutant water quality analysis was not conducted for the discharge from Outfall 004.

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using DEP's "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate ($Q_{7\text{-}10}$ or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

Since the temperature criteria from 25 Pa. Code Chapter 93.7(a) are expressed on monthly and semi-monthly bases for three different aquatic life-uses—cold water fishes, warm water fishes and trout stocking—the program generates monthly and semi-monthly limits for each use. DEP selects the output that corresponds to the aquatic life-use of the receiving stream and consequently which limits apply to the discharge. Temperature WLAs are bounded by an upper limit of 110°F for the

safety of sampling personnel and anyone who may come into contact with the heated discharge where it enters the receiving water. If no WLAs below 110°F are calculated, an instantaneous maximum limit of 110°F is recommended by the program.

Discharges from Outfall 004 are classified under Case 2 because water is obtained via groundwater wells. The results of the thermal analysis, included in Attachment S, indicate that WQBELs for temperature are required at Outfall 004 and are displayed below in Table 62.

Table 62. Thermal limitations at Outfall 004

Monitoring Period	Instantaneous Maximum Temperature Limits (ºF)
Jan 1 -31	40.3
Feb 1-29	40.3
Mar 1-31	46.8
Apr 1-15	52.9
April 16-30	58.9
May 1-15	64.6
May 16-30	73.0
Jun 1-15	80.8
Jun 16-30	84.8
Jul 1-31	87.4
Aug 1-15	87.4
Aug 16-30	87.4
Sep 1-15	84.3
Sep 16-30	78.3
Oct 1-15	72.3
Oct 16-31	66.3
Nov 1-15	58.3
Nov 16-30	50.2
Dec 1-31	42.2

Anti-Backsliding

The previous permit limitations are displayed below in Table 63 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 63: Current Effluent Limitations for Outfall 004

Parameter	Monthly Average	Daily Maximum	Monitor Frequency	Sample type
Flow (MGD)	Monitor and Report		1/discharge	Estimate
Temperature (°F)	-	110	1/discharge	I-S
Total Suspended Solids (mg/L)		Monitor and Report	1/discharge	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0		1/discharge	Grab

Final Effluent Limitations for Outfall 004

The effluent limitations and monitoring frequencies for Outfall 004 are displayed below in Table 64 and 65**.** Based on the limitation development above Outfall 004 will receive new WQBELs for Temperature. At this time CW-EMD may not be able to achieve these new WQBELs upon permit issuance, therefore in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, the Department is granting a three-year compliance schedule for CW-EMD to come into compliance with the new limits. During the interim period, the previous temperature limit will be imposed.

Table 64: Proposed Interim Effluent Limitations for Outfall 004

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Flow (MGD)	XXX	Report	Report	XXX	1/discharge	Estimate
Temperature (°F)	XXX	XXX	XXX	110	1/discharge	I-S
Total Suspended Solids (mg/L)	XXX	Report	Report	XXX	1/discharge	Grab
Total Residual Chloride (mg/L)	XXX	Report	Report	XXX	1/discharge	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	1/discharge	Grab

Table 65: Proposed Final Effluent Limitations for Outfall 004

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Flow (MGD)	XXX	Report	Report	XXX	1/discharge	Estimate
Temperature (°F) Jan 1-31 Feb 1-29 Mar 1-31 Apr 1-15 Apr 16-30 May 1-15 May 16-30 Jun 1-15 Jun 16-30 Jul 1-31 Aug 1-15 Aug 16-31 Sep 1-15 Sep 16-30 Oct 1-15 Oct 16-31 Nov 1-15 Nov 16-30 Dec 1-31	XXX	XXX	XXX	40.3 40.3 46.8 52.9 58.9 64.6 73.0 80.8 84.8 87.4 87.4 87.4 84.3 78.3 72.3 66.3 58.3 50.2 42.2	1/discharge	I-S
Total Suspended Solids (mg/L)	XXX	XXX	Report	XXX	1/discharge	Grab
Total Residual Chloride (mg/L)	XXX	Report	Report	XXX	1/discharge	Grab
pH (S.U.)	6.0	XXX	XXX	9.0	1/discharge	Grab

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	0
Latitude	40º 32' 55"	**Longitude**	-79º 48' 50"
Wastewater Description:	Stormwater		

Outfall No.	005	**Design Flow (MGD)**	0
Latitude	40º 33' 10"	**Longitude**	-79º 48' 50"
Wastewater Description:	Stormwater		

Outfall No.	006	**Design Flow (MGD)**	0
Latitude	40º 33' 9.0"	**Longitude**	-79º 48' 53"
Wastewater Description:	Stormwater		

Outfalls 002, 005, and 006 are non-industrial stormwater outfalls. The discharges via Outfalls 002, 005, and 006 are comprised of only stormwater runoff from areas of the facility in which industrial activities are not performed. These outfalls will not receive any monitoring requirements in Part A of the permit. These outfalls will be included in Part C of the permit authorizing discharges of stormwater from these outfalls.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachments **F, G, H, L, M, N, O, P, and Q**)
☒	TRC Model Spreadsheet (see Attachments **E, K, and T**)
☒	Temperature Model Spreadsheet (see Attachments **D, J, and S**)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachments

Attachment A: Site Plan

Attachment B: Site Flow Diagram

Attachment C: Outfall 001 Stream Stats Report

Attachment D: Outfall 001 Temperature Model Evaluation

Attachment E: Outfall 001 TRC Spreadsheet Evaluation

Attachment F: IMP 901 Toxics Management Spreadsheet Evaluation

Attachment G: IMP 911 Toxics Management Spreadsheet Evaluation

Attachment H: IMP 921 Toxics Management Spreadsheet Evaluation

Attachment I: Outfall 003 Stream Stats Report

Attachment J: Outfall 003 Temperature Model Evaluation

Attachment K: Outfall 003 TRC Spreadsheet Evaluation

Attachment L: IMP 113 Toxics Management Spreadsheet Evaluation

Attachment M: IMP 123 Toxics Management Spreadsheet Evaluation

Attachment N: IMP 303 Toxics Management Spreadsheet Evaluation

Attachment O: IMP 403 Toxics Management Spreadsheet Evaluation

Attachment P: IMP 603 Toxics Management Spreadsheet Evaluation

Attachment Q: IMP 903 Toxics Management Spreadsheet Evaluation

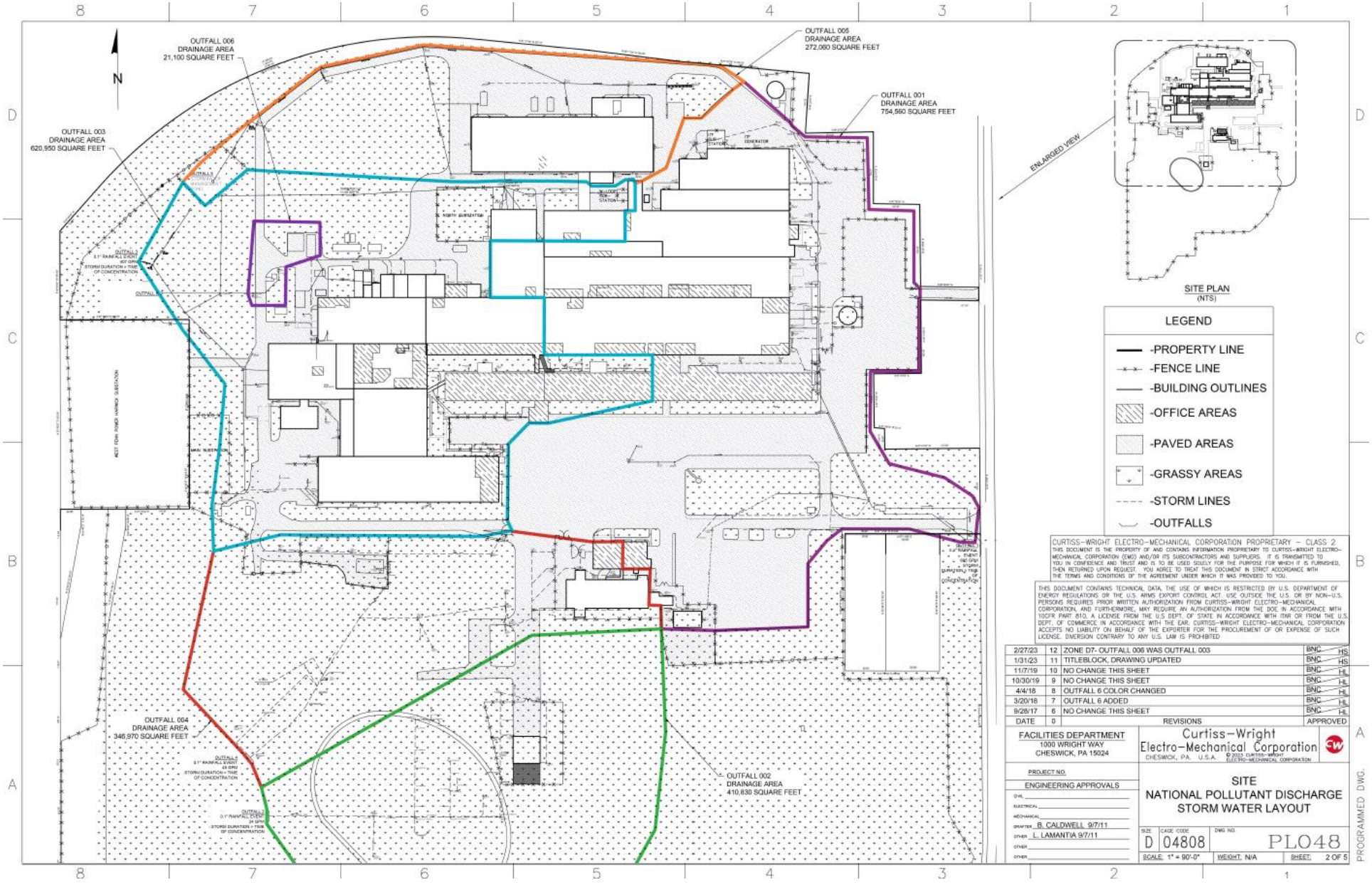
Attachment R: Outfall 004 Stream Stats Report

Attachment S: Outfall 004 Temperature Model Evaluation

Attachment T: Outfall 004 TRC Spreadsheet Evaluation

Attachment A:

Site Plan


OUTFALL 006
DRAINAGE AREA
21,100 SQUARE FEET
OUTFALL 005
DRAINAGE AREA
272,060 SQUARE FEET
OUTFALL 001
DRAINAGE AREA
754,560 SQUARE FEET
OUTFALL 003
DRAINAGE AREA
620,950 SQUARE FEET
OUTFALL 004
DRAINAGE AREA
346,970 SQUARE FEET
OUTFALL 002
DRAINAGE AREA
410,830 SQUARE FEET
N
ENLARGED VIEW
SITE PLAN
(NTS)
LEGEND
-PROPERTY LINE
-FENCE LINE
-BUILDING OUTLINES
-OFFICE AREAS
-PAVED AREAS
-GRASSY AREAS
-STORM LINES
-OUTFALLS
CURTISS-WRIGHT ELECTRO-MECHANICAL CORPORATION PROPRIETARY – CLASS 2
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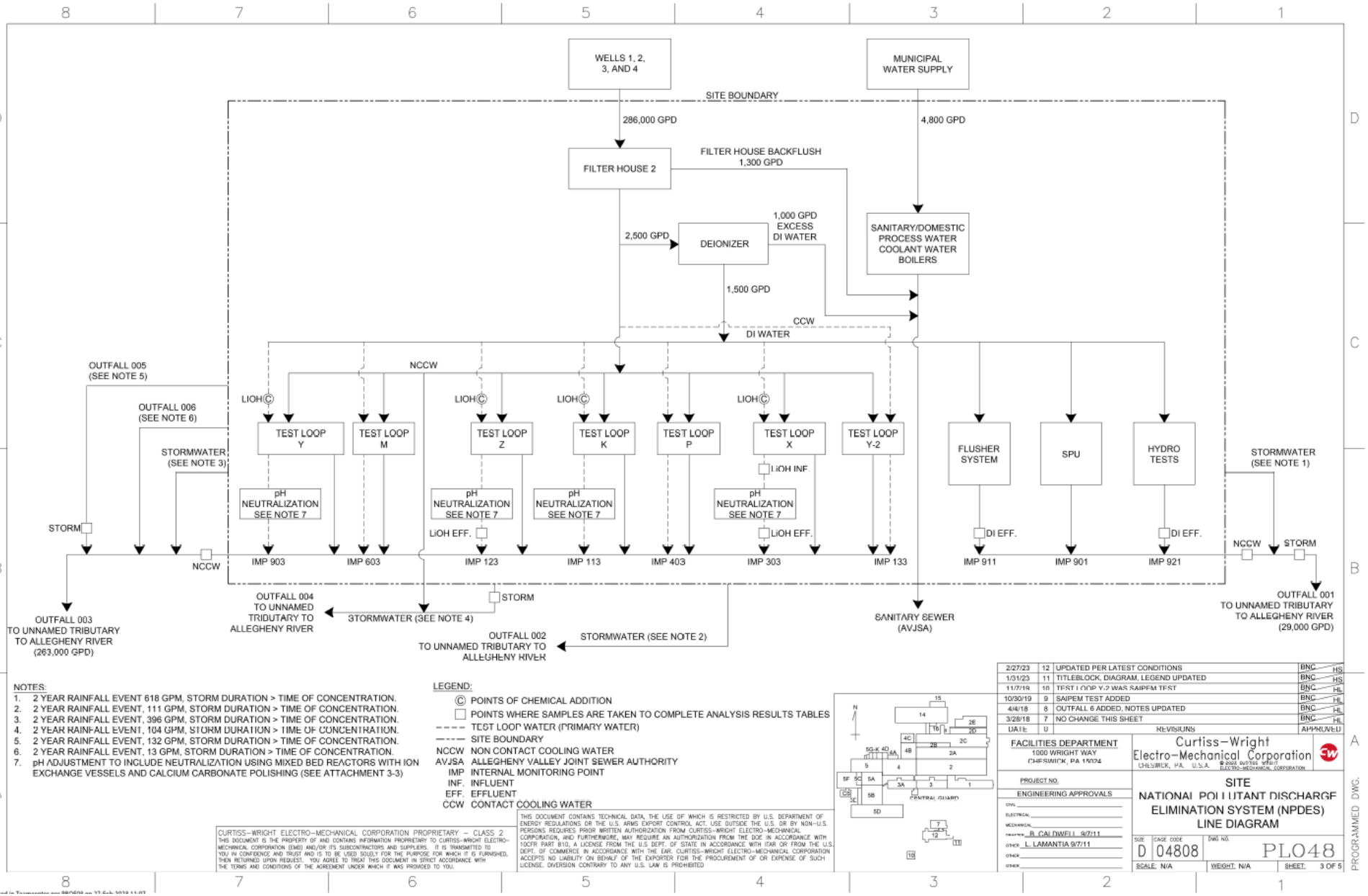
2/27/23 12 ZONE D7- OUTFALL 006 WAS OUTFALL 003 BNC HS
1/31/23 11 TITLEBLOCK, DRAWING UPDATED BNC HS
11/7/19 10 NO CHANGE THIS SHEET BNC HL
10/30/19 9 NO CHANGE THIS SHEET BNC HL
4/4/18 8 OUTFALL 6 COLOR CHANGED BNC HL
3/20/18 7 OUTFALL 6 ADDED BNC HL
9/28/17 6 NO CHANGE THIS SHEET BNC HL
DATE 0 REVISIONS APPROVED
FACILITIES DEPARTMENT
1000 WRIGHT WAY
CHESWICK, PA 15024
Curtiss-Wright
Electro-Mechanical Corporation
CHESWICK, PA. U.S.A.
PROJECT NO.
ENGINEERING APPROVALS
DRAFTER B. CALDWELL 9/7/11
OTHER L. LAMANTIA 9/7/11
SITE
NATIONAL POLLUTANT DISCHARGE
STORM WATER LAYOUT
SIZE D
CAGE CODE 04808
DWG NO. PLO48
SCALE: 1" = 90'-0"
WEIGHT: N/A
SHEET: 2 OF 5
PROGRAMMED DWG.

Attachment B:

Site Flow Diagram



NOTES:
1. 2 YEAR RAINFALL EVENT 618 GPM, STORM DURATION > TIME OF CONCENTRATION.
2. 2 YEAR RAINFALL EVENT, 111 GPM, STORM DURATION > TIME OF CONCENTRATION.
3. 2 YEAR RAINFALL EVENT, 396 GPM, STORM DURATION > TIME OF CONCENTRATION.
4. 2 YEAR RAINFALL EVENT, 104 GPM, STORM DURATION > TIME OF CONCENTRATION.
5. 2 YEAR RAINFALL EVENT, 132 GPM, STORM DURATION > TIME OF CONCENTRATION.
6. 2 YEAR RAINFALL EVENT, 13 GPM, STORM DURATION > TIME OF CONCENTRATION.
7. pH ADJUSTMENT TO INCLUDE NEUTRALIZATION USING MIXED BED REACTORS WITH ION EXCHANGE VESSELS AND CALCIUM CARBONATE POLISHING (SEE ATTACHMENT 3-3)

LEGEND:
- Ⓒ POINTS OF CHEMICAL ADDITION
- □ POINTS WHERE SAMPLES ARE TAKEN TO COMPLETE ANALYSIS RESULTS TABLES
- ---- TEST LOOP WATER (PRIMARY WATER)
- ---- SITE BOUNDARY
- NCCW NON CONTACT COOLING WATER
- AVJSA ALLEGHENY VALLEY JOINT SEWER AUTHORITY
- IMP INTERNAL MONITORING POINT
- INF. INFLUENT
- EFF. EFFLUENT
- CCW CONTACT COOLING WATER

DATE	U	REVISIONS	APPROVED
2/27/23	12	UPDATED PER LATEST CONDITIONS	BNC HS
1/31/23	11	TITLEBLOCK, DIAGRAM, LEGEND UPDATED	BNC HS
11/7/19	10	TEST LOOP Y-2 WAS SAIPEM TEST	BNC HL
10/30/19	9	SAIPEM TEST ADDED	BNC HL
4/4/18	8	OUTFALL 6 ADDED, NOTES UPDATED	BNC HL
3/28/18	7	NO CHANGE THIS SHEET	BNC HL

FACILITIES DEPARTMENT
1000 WRIGHT WAY
CHESWICK, PA 15024

Curtiss–Wright Electro–Mechanical Corporation
CHESWICK, PA. U.S.A.

PROJECT NO.

ENGINEERING APPROVALS
CIVIL
ELECTRICAL
MECHANICAL
drawing R. CALDWELL 9/7/11
OTHER L. LAMANTIA 9/7/11
OTHER
OTHER

SITE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) LINE DIAGRAM

SIZE D | CAGE CODE 04808 | DWG NO. PL048
SCALE: N/A | WEIGHT: N/A | SHEET 3 OF 5

PROGRAMMED DWG.

Attachment C:

Outfall 001 StreamStats Report

Outfall 001 StreamStats Report

Region ID: PA
Workspace ID: PA20240417124243995000
Clicked Point (Latitude, Longitude): 40.53699, -79.80718
Time: 2024-04-17 08:43:20 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	11500	square miles
FOREST	Percentage of area covered by forest	73.9024	percent
PRECIP	Mean Annual Precipitation	44	inches
URBAN	Percentage of basin with urban development	2.3871	percent

General Flow Statistics

General Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	11500	square miles	2.26	1720
PRECIP	Mean Annual Precipitation	44	inches	33.1	50.4
CARBON	Percent Carbonate	0	percent	0	99
FOREST	Percent Forest	73.9024	percent	5.1	100
URBAN	Percent Urban	2.3871	percent	0	89

General Flow Statistics Disclaimers [Statewide Mean and Base Flow]

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

General Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Harmonic Mean Streamflow	7240	ft^3/s

General 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/)

Attachment D:

Outfall 001 Temperature Model Evaluation

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *Inputs*

Facility: Curtiss-Wright
Permit No.: PA001228
Stream Name: Allegheny River
Analyst/Engineer: Olesnanik
Stream Q7-10 (cfs)*: 2,390.0
Outfall No.: 001
Analysis Type*: WWF

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31		0.249		0.249
Feb 1-29		0.249		0.249
Mar 1-31		0.249		0.249
Apr 1-15		0.249		0.249
Apr 16-30		0.249		0.249
May 1-15		0.249		0.249
May 16-31		0.249		0.249
Jun 1-15		0.249		0.249
Jun 16-30		0.249		0.249
Jul 1-31		0.249		0.249
Aug 1-15		0.249		0.249
Aug 16-31		0.249		0.249
Sep 1-15		0.249		0.249
Sep 16-30		0.249		0.249
Oct 1-15		0.249		0.249
Oct 16-31		0.249		0.249
Nov 1-15		0.249		0.249
Nov 16-30		0.249		0.249
Dec 1-31		0.249		0.249

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	7648.00	7648.39
3.5	1.00	8365.00	8365.39
7	1.00	16730.00	16730.39
9.3	1.00	22227.00	22227.39
9.3	1.00	22227.00	22227.39
5.1	1.00	12189.00	12189.39
5.1	1.00	12189.00	12189.39
3	1.00	7170.00	7170.39
3	1.00	7170.00	7170.39
1.7	1.00	4063.00	4063.39
1.4	1.00	3346.00	3346.39
1.4	1.00	3346.00	3346.39
1.1	1.00	2629.00	2629.39
1.1	1.00	2629.00	2629.39
1.2	1.00	2868.00	2868.39
1.2	1.00	2868.00	2868.39
1.6	1.00	3824.00	3824.39
1.6	1.00	3824.00	3824.39
2.4	1.00	5736.00	5736.39

Temperature

Ambient Stream Temperature (°F)*

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Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *WWF Results*

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	WWF Target Maximum Stream Temp. (ºF)	Case 1 Daily WLA (Million BTUs/day)	Case 2 Daily WLA (ºF)
Jan 1-31	40	N/A -- Case 2	110.0
Feb 1-29	40	N/A -- Case 2	110.0
Mar 1-31	46	N/A -- Case 2	110.0
Apr 1-15	52	N/A -- Case 2	110.0
Apr 16-30	58	N/A -- Case 2	110.0
May 1-15	64	N/A -- Case 2	110.0
May 16-31	72	N/A -- Case 2	110.0
Jun 1-15	80	N/A -- Case 2	110.0
Jun 16-30	84	N/A -- Case 2	110.0
Jul 1-31	87	N/A -- Case 2	110.0
Aug 1-15	87	N/A -- Case 2	110.0
Aug 16-31	87	N/A -- Case 2	110.0
Sep 1-15	84	N/A -- Case 2	110.0
Sep 16-30	78	N/A -- Case 2	110.0
Oct 1-15	72	N/A -- Case 2	110.0
Oct 16-31	66	N/A -- Case 2	110.0
Nov 1-15	58	N/A -- Case 2	110.0
Nov 16-30	50	N/A -- Case 2	110.0
Dec 1-31	42	N/A -- Case 2	110.0

Attachment E:

Outfall 001 TRC Spreadsheet Evaluation

TRC EVALUATION

2390	= Q stream (cfs)	0.5	= CV Daily
0.249	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= 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)
	= %Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	1969.365	1.3.2.iii	WLA cfc =	1929.617
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	733.832	5.1d	LTA_cfc =	1121.789

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.170	

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)**

(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

Attachment F:

IMP 901 Toxics Management Spreadsheet Evaluation

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 901

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: DI Test Loop Wastewater

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.001	1.9	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		10									
	Chloride (PWS)	mg/L		0.712									
	Bromide	mg/L		0.054									
	Sulfate (PWS)	mg/L		0.758									
	Fluoride (PWS)	mg/L		0.026									
Group 2	Total Aluminum	µg/L	<	13									
	Total Antimony	µg/L	<	0.91									
	Total Arsenic	µg/L	<	0.3									
	Total Barium	µg/L	<	1.2									
	Total Beryllium	µg/L	<	0.25									
	Total Boron	µg/L		120									
	Total Cadmium	µg/L	<	0.21									
	Total Chromium (III)	µg/L	<	0.76									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L	<	0.1									
	Total Copper	µg/L		76									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		92									
	Total Iron	µg/L	<	41									
	Total Lead	µg/L		1.4									
	Total Manganese	µg/L	<	2.2									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		98									
	Total Phenols (Phenolics) (PWS)	µg/L	<	9.3									
	Total Selenium	µg/L	<	0.7									
	Total Silver	µg/L	<	0.79									
	Total Thallium	µg/L	<	0.38									
	Total Zinc	µg/L	<	6.3									
	Total Molybdenum	µg/L	<	0.7									
	Acrolein	µg/L	<	16									
	Acrylamide	µg/L	<	10									
	Acrylonitrile	µg/L	<	7.8									
	Benzene	µg/L	<	0.6									
	Bromoform	µg/L	<	0.98									

Group 3	Carbon Tetrachloride	µg/L	<	0.88										
	Chlorobenzene	µg/L	<	0.5										
	Chlorodibromomethane	µg/L	<	0.84										
	Chloroethane	µg/L	<	0.9										
	2-Chloroethyl Vinyl Ether	µg/L	<	1.7										
	Chloroform	µg/L	<	0.6										
	Dichlorobromomethane	µg/L	<	0.64										
	1,1-Dichloroethane	µg/L	<	0.31										
	1,2-Dichloroethane	µg/L	<	0.57										
	1,1-Dichloroethylene	µg/L	<	0.55										
	1,2-Dichloropropane	µg/L	<	0.66										
	1,3-Dichloropropylene	µg/L	<	1.1										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.51										
	Methyl Bromide	µg/L	<	0.89										
	Methyl Chloride	µg/L	<	0.9										
	Methylene Chloride	µg/L	<	0.89										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.6										
	Tetrachloroethylene	µg/L	<	0.47										
	Toluene	µg/L	<	0.46										
	1,2-trans-Dichloroethylene	µg/L	<	0.67										
	1,1,1-Trichloroethane	µg/L	<	0.6										
	1,1,2-Trichloroethane	µg/L	<	0.45										
	Trichloroethylene	µg/L	<	0.69										
	Vinyl Chloride	µg/L	<	0.4										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.149										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.18										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.26										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.46										
	2,4,6-Trichlorophenol	µg/L	<	0.21										
Group 5	Acenaphthene	µg/L	<	0.062										
	Acenaphthylene	µg/L	<	0.062										
	Anthracene	µg/L	<	0.047										
	Benzidine	µg/L	<	8.7										
	Benzo(a)Anthracene	µg/L	<	0.071										
	Benzo(a)Pyrene	µg/L	<	0.05										
	3,4-Benzofluoranthene	µg/L	<	0.092										
	Benzo(ghi)Perylene	µg/L	<	0.066										
	Benzo(k)Fluoranthene	µg/L	<	0.084										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.14										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.055										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5.9										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.3										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.056										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L	<	0.077										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.069										
	1,2-Dichlorobenzene	µg/L	<	0.09										
	1,3-Dichlorobenzene	µg/L	<	0.094										
	1,4-Dichlorobenzene	µg/L	<	0.058										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.54										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L	<	0.98										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.16										
	Di-n-Octyl Phthalate	µg/L	<	0.65										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L	<	0.057										
	Fluorene	µg/L	<	0.66										
	Hexachlorobenzene	µg/L	<	0.053										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.47										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.081										
	Isophorone	µg/L	<	0.2										
	Naphthalene	µg/L	<	0.056										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.052										
	Pyrene	µg/L	<	0.051										
	1,2,4-Trichlorobenzene	µg/L	<	0.12										
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 901

Instructions | Discharge | Stream

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	15.2	736	11500			Yes
End of Reach 1	042122	13.3	735	11501		9.2	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	15.2	0.1	2390			1000	15					100	7		
End of Reach 1	13.3	0.1	2390			1000	15								

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	15.2														
End of Reach 1	13.3														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 901

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.080 Analysis Hardness (mg/l): 99.999 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	92,315,804	
Total Antimony	0	0		0	1,100	1,100	#########	
Total Arsenic	0	0		0	340	340	41,849,831	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	#########	
Total Boron	0	0		0	8,100	8,100	#########	
Total Cadmium	0	0		0	2.014	2.13	262,567	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.760	1,803	#########	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	2,005,503	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	11,693,335	
Total Copper	0	0		0	13.439	14.0	1,723,102	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	10,049,407	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	202,733	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.233	469	57,749,193	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	465,809	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	8,000,703	
Total Zinc	0	0		0	117.180	120	14,747,832	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	369,263	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	80,007,030	
Benzene	0	0		0	640	640	78,776,153	
Bromoform	0	0		0	1,800	1,800	#########	
Carbon Tetrachloride	0	0		0	2,800	2,800	#########	
Chlorobenzene	0	0		0	1,200	1,200	#########	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	#########	
Chloroform	0	0		0	1,900	1,900	#########	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	#########	
1,1-Dichloroethylene	0	0		0	7,500	7,500	#########	
1,2-Dichloropropane	0	0		0	11,000	11,000	#########	
1,3-Dichloropropylene	0	0		0	310	310	38,157,199	
Ethylbenzene	0	0		0	2,900	2,900	#########	
Methyl Bromide	0	0		0	550	550	67,698,256	
Methyl Chloride	0	0		0	28,000	28,000	#########	
Methylene Chloride	0	0		0	12,000	12,000	#########	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	#########	
Tetrachloroethylene	0	0		0	700	700	86,161,417	
Toluene	0	0		0	1,700	1,700	#########	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	#########	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	#########	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	#########	
Trichloroethylene	0	0		0	2,300	2,300	#########	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	68,929,134	
2,4-Dichlorophenol	0	0		0	1,700	1,700	#########	
2,4-Dimethylphenol	0	0		0	660	660	81,237,907	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	9,847,019	
2,4-Dinitrophenol	0	0		0	660	660	81,237,907	
2-Nitrophenol	0	0		0	8,000	8,000	#########	
4-Nitrophenol	0	0		0	2,300	2,300	#########	
p-Chloro-m-Cresol	0	0		0	160	160	19,694,038	
Pentachlorophenol	0	0		0	8.723	8.72	1,073,734	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	56,620,360	
Acenaphthene	0	0		0	83	83.0	10,216,282	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	36,926,322	
Benzo(a)Anthracene	0	0		0	0.5	0.5	61,544	
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	#########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	#########	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	33,233,689	

Butyl Benzyl Phthalate	0	0		0	140	140	17,232,283	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	#########	
1,3-Dichlorobenzene	0	0		0	350	350	43,080,708	
1,4-Dichlorobenzene	0	0		0	730	730	89,854,049	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	#########	
Dimethyl Phthalate	0	0		0	2,500	2,500	#########	
Di-n-Butyl Phthalate	0	0		0	110	110	13,539,651	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	#########	
2,6-Dinitrotoluene	0	0		0	990	990	#########	
1,2-Diphenylhydrazine	0	0		0	15	15.0	1,846,316	
Fluoranthene	0	0		0	200	200	24,617,548	
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	1,230,877	
Hexachlorocyclopentadiene	0	0		0	5	5.0	615,439	
Hexachloroethane	0	0		0	60	60.0	7,385,264	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	#########	
Naphthalene	0	0		0	140	140	17,232,283	
Nitrobenzene	0	0		0	4,000	4,000	#########	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	#########	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	36,926,322	
Phenanthrene	0	0		0	5	5.0	615,439	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	16,001,406	

☑ *CFC* CCT (min): 720 PMF: 0.552 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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	
Fluoride (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	#########	
Total Arsenic	0	0		0	150	150	#########	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	#########	
Total Boron	0	0		0	1,600	1,600	#########	
Total Cadmium	0	0		0	0.246	0.27	230,779	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.114	86.2	73,491,455	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	8,864,563	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	16,202,648	
Total Copper	0	0		0	8.956	9.33	7,955,413	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	#########	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	2,713,165	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	772,510	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.006	52.2	44,483,071	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	4,254,606	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	11,086,022	
Total Zinc	0	0		0	118.139	120	#########	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	2,558,313	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	#########	
Benzene	0	0		0	130	130	#########	
Bromoform	0	0		0	370	370	#########	
Carbon Tetrachloride	0	0		0	560	560	#########	
Chlorobenzene	0	0		0	240	240	#########	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	#########	
Chloroform	0	0		0	390	390	#########	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	#########	
1,1-Dichloroethylene	0	0		0	1,500	1,500	#########	
1,2-Dichloropropane	0	0		0	2,200	2,200	#########	
1,3-Dichloropropylene	0	0		0	61	61.0	52,019,027	
Ethylbenzene	0	0		0	580	580	#########	
Methyl Bromide	0	0		0	110	110	93,804,803	
Methyl Chloride	0	0		0	5,500	5,500	#########	
Methylene Chloride	0	0		0	2,400	2,400	#########	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	#########	
Tetrachloroethylene	0	0		0	140	140	#########	
Toluene	0	0		0	330	330	#########	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	#########	
1,1,1-Trichloroethane	0	0		0	610	610	#########	
1,1,2-Trichloroethane	0	0		0	680	680	#########	
Trichloroethylene	0	0		0	450	450	#########	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	93,804,803	
2,4-Dichlorophenol	0	0		0	340	340	#########	
2,4-Dimethylphenol	0	0		0	130	130	#########	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	13,644,335	
2,4-Dinitrophenol	0	0		0	130	130	#########	

2-Nitrophenol	0	0		0	1,600	1,600	#########	
4-Nitrophenol	0	0		0	470	470	#########	
p-Chloro-m-Cresol	0	0		0	500	500	#########	
Pentachlorophenol	0	0		0	6.693	6.69	5,707,241	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	77,602,155	
Acenaphthene	0	0		0	17	17.0	14,497,106	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	50,313,485	
Benzo(a)Anthracene	0	0		0	0.1	0.1	85,277	
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	#########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	#########	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	46,049,631	
Butyl Benzyl Phthalate	0	0		0	35	35.0	29,846,983	
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	#########	
1,3-Dichlorobenzene	0	0		0	69	69.0	58,841,195	
1,4-Dichlorobenzene	0	0		0	150	150	#########	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	#########	
Dimethyl Phthalate	0	0		0	500	500	#########	
Di-n-Butyl Phthalate	0	0		0	21	21.0	17,908,190	
2,4-Dinitrotoluene	0	0		0	320	320	#########	
2,6-Dinitrotoluene	0	0		0	200	200	#########	
1,2-Diphenylhydrazine	0	0		0	3	3.0	2,558,313	
Fluoranthene	0	0		0	40	40.0	34,110,838	
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	1,705,542	
Hexachlorocyclopentadiene	0	0		0	1	1.0	852,771	
Hexachloroethane	0	0		0	12	12.0	10,233,251	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	#########	
Naphthalene	0	0		0	43	43.0	36,669,150	
Nitrobenzene	0	0		0	810	810	#########	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	#########	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	50,313,485	
Phenanthrene	0	0		0	1	1.0	852,771	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	22,172,044	

☑ ***THH*** CCT (min): 720 THH PMF: 0.552 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.6664

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	#########	WQC applied at RMI 13.3 with a design stream flow of 2390 cfs
Chloride (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 13.3 with a design stream flow of 2390 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 13.3 with a design stream flow of 2390 cfs
Fluoride (PWS)	0	0		0	2,000	2,000	#########	WQC applied at RMI 13.3 with a design stream flow of 2390 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	4,775,517	
Total Arsenic	0	0		0	10	10.0	8,527,709	
Total Barium	0	0		0	2,400	2,400	#########	
Total Boron	0	0		0	3,100	3,100	#########	
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	
Dissolved Iron	0	0		0	300	300	#########	
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	#########	
Total Mercury	0	0		0	0.050	0.05	42,639	
Total Nickel	0	0		0	610	610	#########	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	5,147,552	WQC applied at RMI 13.3 with a design stream flow of 2390 cfs
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	204,665	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	2,558,313	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	85,277,094	
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	4,860,794	
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	28,141,441	

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	57,988,424	
Methyl Bromide	0	0		0	100	100.0	85,277,094	
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	48,607,944	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	85,277,094	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	#########	
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	25,583,128	
2,4-Dichlorophenol	0	0		0	10	10.0	8,527,709	
2,4-Dimethylphenol	0	0		0	100	100.0	85,277,094	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	1,705,542	
2,4-Dinitrophenol	0	0		0	10	10.0	8,527,709	
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	#########	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	59,693,966	
Anthracene	0	0		0	300	300	#########	
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	#########	
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	85,277	
2-Chloronaphthalene	0	0		0	800	800	#########	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	#########	
1,3-Dichlorobenzene	0	0		0	7	7.0	5,969,397	
1,4-Dichlorobenzene	0	0		0	300	300	#########	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	#########	

Dimethyl Phthalate	0	0		0	2,000	2,000	#########	
Di-n-Butyl Phthalate	0	0		0	20	20.0	17,055,419	
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	17,055,419	
Fluorene	0	0		0	50	50.0	42,638,547	
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	3,411,084	
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	28,994,212	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	8,527,709	
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	17,055,419	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	59,694	

☑ *CRL* CCT (min): 720 PMF: 0.774 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	233,450	
Acrylonitrile	0	0		0	0.06	0.06	200,100	
Benzene	0	0		0	0.58	0.58	1,934,296	
Bromoform	0	0		0	7	7.0	23,344,954	
Carbon Tetrachloride	0	0		0	0.4	0.4	1,333,997	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	2,667,995	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	3,168,244	
1,2-Dichloroethane	0	0		0	9.9	9.9	33,016,434	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	3,001,494	
1,3-Dichloropropylene	0	0		0	0.27	0.27	900,448	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	66,699,867	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	666,999	
Tetrachloroethylene	0	0		0	10	10.0	33,349,934	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	1,834,246	
Trichloroethylene	0	0		0	0.6	0.6	2,000,996	
Vinyl Chloride	0	0		0	0.02	0.02	66,700	
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	100,050	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	5,002,490	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	333	
Benzo(a)Anthracene	0	0		0	0.001	0.001	3,335	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	333	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	3,335	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	33,350	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	100,050	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1,067,198	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	400,199	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	333	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	166,750	
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	166,750	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	166,750	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	100,050	
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	267	
Hexachlorobutadiene	0	0		0	0.01	0.01	33,350	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	333,499	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	3,335	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	2,334	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	16,675	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	11,005,478	
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* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments

☑ ***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)	#########	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	#########	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	#########	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	2,059,021	mg/L	Discharge Conc ≤ 10% WQBEL
Total Aluminum	59,170,703	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	#########	µg/L	Discharge Conc < TQL
Total Beryllium	N/A	N/A	No WQS
Total Boron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	168,295	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	73,491,455	µg/L	Discharge Conc < TQL
Hexavalent Chromium	1,285,446	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	7,494,956	µg/L	Discharge Conc < TQL

Total Copper	1,104,439	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	2,713,165	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	42,639	µg/L	Discharge Conc < TQL
Total Nickel	37,014,901	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	5,147,552	µg/L	Discharge Conc ≤ 10% WQBEL
Total Selenium	4,254,606	µg/L	Discharge Conc < TQL
Total Silver	298,565	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	204,665	µg/L	Discharge Conc < TQL
Total Zinc	9,452,765	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	236,683	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylamide	233,450	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	200,100	µg/L	Discharge Conc ≤ 25% WQBEL
Benzene	1,934,296	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	23,344,954	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	1,333,997	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	85,277,094	µg/L	Discharge Conc < TQL
Chlorodibromomethane	2,667,995	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	#########	µg/L	Discharge Conc < TQL
Chloroform	4,860,794	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	3,168,244	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	33,016,434	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	28,141,441	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	3,001,494	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	900,448	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	57,988,424	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	43,391,849	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	66,699,867	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	666,999	µg/L	Discharge Conc ≤ 25% WQBEL
Tetrachloroethylene	33,349,934	µg/L	Discharge Conc < TQL
Toluene	48,607,944	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	85,277,094	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	1,834,246	µg/L	Discharge Conc < TQL
Trichloroethylene	2,000,996	µg/L	Discharge Conc ≤ 25% WQBEL
Vinyl Chloride	66,700	µg/L	Discharge Conc < TQL
2-Chlorophenol	25,583,128	µg/L	Discharge Conc < TQL

2,4-Dichlorophenol	8,527,709	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	52,070,219	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	1,705,542	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	8,527,709	µg/L	Discharge Conc < TQL
2-Nitrophenol	#########	µg/L	Discharge Conc < TQL
4-Nitrophenol	#########	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	12,623,083	µg/L	Discharge Conc < TQL
Pentachlorophenol	100,050	µg/L	Discharge Conc < TQL
Phenol	#########	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	5,002,490	µg/L	Discharge Conc < TQL
Acenaphthene	6,548,224	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	#########	µg/L	Discharge Conc < TQL
Benzidine	333	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	3,335	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	333	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	3,335	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	33,350	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	100,050	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	#########	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	1,067,198	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	21,301,453	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	85,277	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	#########	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	400,199	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	333	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	64,693,302	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	5,969,397	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	57,592,818	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	166,750	µg/L	Discharge Conc < TQL
Diethyl Phthalate	#########	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	#########	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	8,678,370	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	166,750	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	166,750	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	100,050	µg/L	Discharge Conc < TQL
Fluoranthene	15,778,854	µg/L	Discharge Conc < TQL
Fluorene	42,638,547	µg/L	Discharge Conc < TQL
Hexachlorobenzene	267	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	33,350	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	394,471	µg/L	Discharge Conc < TQL

Hexachloroethane	333,499	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	3,335	µg/L	Discharge Conc < TQL
Isophorone	28,994,212	µg/L	Discharge Conc < TQL
Naphthalene	11,045,198	µg/L	Discharge Conc < TQL
Nitrobenzene	8,527,709	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	2,334	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	16,675	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	11,005,478	µg/L	Discharge Conc < TQL
Phenanthrene	394,471	µg/L	Discharge Conc < TQL
Pyrene	17,055,419	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	59,694	µg/L	Discharge Conc < TQL

Attachment G:

IMP 911 Toxics Management Spreadsheet Evaluation

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 911

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: DI Test Loop Wastewater

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.000012	1.9	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Strea m CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteri a Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		10									
	Chloride (PWS)	mg/L		0.712									
	Bromide	mg/L		0.054									
	Sulfate (PWS)	mg/L		0.758									
	Fluoride (PWS)	mg/L		0.026									
Group 2	Total Aluminum	µg/L	<	13									
	Total Antimony	µg/L	<	0.91									
	Total Arsenic	µg/L	<	0.3									
	Total Barium	µg/L	<	1.2									
	Total Beryllium	µg/L	<	0.25									
	Total Boron	µg/L		120									
	Total Cadmium	µg/L	<	0.21									
	Total Chromium (III)	µg/L	<	0.76									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L	<	0.1									
	Total Copper	µg/L		76									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		92									
	Total Iron	µg/L	<	41									
	Total Lead	µg/L		1.4									
	Total Manganese	µg/L	<	2.2									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		98									
	Total Phenols (Phenolics) (PWS)	µg/L	<	9.3									
	Total Selenium	µg/L	<	0.7									
	Total Silver	µg/L	<	0.79									
	Total Thallium	µg/L	<	0.38									
	Total Zinc	µg/L	<	6.3									
	Total Molybdenum	µg/L	<	0.7									
	Acrolein	µg/L	<	16									
	Acrylamide	µg/L	<	10									
	Acrylonitrile	µg/L	<	7.8									
	Benzene	µg/L	<	0.6									
	Bromoform	µg/L	<	0.98									

Group 3	Carbon Tetrachloride	µg/L	<	0.88										
	Chlorobenzene	µg/L	<	0.5										
	Chlorodibromomethane	µg/L	<	0.84										
	Chloroethane	µg/L	<	0.9										
	2-Chloroethyl Vinyl Ether	µg/L	<	1.7										
	Chloroform	µg/L	<	0.6										
	Dichlorobromomethane	µg/L	<	0.64										
	1,1-Dichloroethane	µg/L	<	0.31										
	1,2-Dichloroethane	µg/L	<	0.57										
	1,1-Dichloroethylene	µg/L	<	0.55										
	1,2-Dichloropropane	µg/L	<	0.66										
	1,3-Dichloropropylene	µg/L	<	1.1										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.51										
	Methyl Bromide	µg/L	<	0.89										
	Methyl Chloride	µg/L	<	0.9										
	Methylene Chloride	µg/L	<	0.89										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.6										
	Tetrachloroethylene	µg/L	<	0.47										
	Toluene	µg/L	<	0.46										
	1,2-trans-Dichloroethylene	µg/L	<	0.67										
	1,1,1-Trichloroethane	µg/L	<	0.6										
	1,1,2-Trichloroethane	µg/L	<	0.45										
	Trichloroethylene	µg/L	<	0.69										
	Vinyl Chloride	µg/L	<	0.4										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.149										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.18										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.26										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.46										
	2,4,6-Trichlorophenol	µg/L	<	0.21										
Group 5	Acenaphthene	µg/L	<	0.062										
	Acenaphthylene	µg/L	<	0.062										
	Anthracene	µg/L	<	0.047										
	Benzidine	µg/L	<	8.7										
	Benzo(a)Anthracene	µg/L	<	0.071										
	Benzo(a)Pyrene	µg/L	<	0.05										
	3,4-Benzofluoranthene	µg/L	<	0.092										
	Benzo(ghi)Perylene	µg/L	<	0.066										
	Benzo(k)Fluoranthene	µg/L	<	0.084										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.14										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.055										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5.9										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.3										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.056										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L	<	0.077										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.069										
	1,2-Dichlorobenzene	µg/L	<	0.09										
	1,3-Dichlorobenzene	µg/L	<	0.094										
	1,4-Dichlorobenzene	µg/L	<	0.058										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.54										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L	<	0.98										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.16										
	Di-n-Octyl Phthalate	µg/L	<	0.65										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L	<	0.057										
	Fluorene	µg/L	<	0.66										
	Hexachlorobenzene	µg/L	<	0.053										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.47										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.081										
	Isophorone	µg/L	<	0.2										
	Naphthalene	µg/L	<	0.056										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.052										
	Pyrene	µg/L	<	0.051										
	1,2,4-Trichlorobenzene	µg/L	<	0.12										
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 911

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	15.2	736	11500			Yes
End of Reach 1	042122	13.3	735	11501			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	15.2	0.1	2390			1000	15					100	7		
End of Reach 1	13.3	0.1	2390			1000	15								

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	15.2														
End of Reach 1	13.3														

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Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 911

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.080 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	#########	
Total Antimony	0	0		0	1,100	1,100	#########	
Total Arsenic	0	0		0	340	340	#########	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	#########	
Total Boron	0	0		0	8,100	8,100	#########	
Total Cadmium	0	0		0	2.014	2.13	21,880,548	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	#########	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	#########	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	#########	
Total Copper	0	0		0	13.439	14.0	#########	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	#########	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	16,894,249	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	#########	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	38,817,635	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	#########	
Total Zinc	0	0		0	117.180	120	#########	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	30,771,668	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	#########	
Benzene	0	0		0	640	640	#########	
Bromoform	0	0		0	1,800	1,800	#########	
Carbon Tetrachloride	0	0		0	2,800	2,800	#########	
Chlorobenzene	0	0		0	1,200	1,200	#########	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	#########	
Chloroform	0	0		0	1,900	1,900	#########	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	#########	
1,1-Dichloroethylene	0	0		0	7,500	7,500	#########	
1,2-Dichloropropane	0	0		0	11,000	11,000	#########	
1,3-Dichloropropylene	0	0		0	310	310	#########	
Ethylbenzene	0	0		0	2,900	2,900	#########	
Methyl Bromide	0	0		0	550	550	#########	
Methyl Chloride	0	0		0	28,000	28,000	#########	
Methylene Chloride	0	0		0	12,000	12,000	#########	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	#########	
Tetrachloroethylene	0	0		0	700	700	#########	
Toluene	0	0		0	1,700	1,700	#########	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	#########	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	#########	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	#########	
Trichloroethylene	0	0		0	2,300	2,300	#########	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	#########	
2,4-Dichlorophenol	0	0		0	1,700	1,700	#########	
2,4-Dimethylphenol	0	0		0	660	660	#########	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	#########	
2,4-Dinitrophenol	0	0		0	660	660	#########	
2-Nitrophenol	0	0		0	8,000	8,000	#########	
4-Nitrophenol	0	0		0	2,300	2,300	#########	
p-Chloro-m-Cresol	0	0		0	160	160	#########	
Pentachlorophenol	0	0		0	8.723	8.72	89,477,044	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	#########	
Acenaphthene	0	0		0	83	83.0	#########	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	#########	
Benzo(a)Anthracene	0	0		0	0.5	0.5	5,128,611	
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	#########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	#########	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	#########	

Butyl Benzyl Phthalate	0	0		0	140	140	#########	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	#########	
1,3-Dichlorobenzene	0	0		0	350	350	#########	
1,4-Dichlorobenzene	0	0		0	730	730	#########	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	#########	
Dimethyl Phthalate	0	0		0	2,500	2,500	#########	
Di-n-Butyl Phthalate	0	0		0	110	110	#########	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	#########	
2,6-Dinitrotoluene	0	0		0	990	990	#########	
1,2-Diphenylhydrazine	0	0		0	15	15.0	#########	
Fluoranthene	0	0		0	200	200	#########	
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	#########	
Hexachlorocyclopentadiene	0	0		0	5	5.0	51,286,113	
Hexachloroethane	0	0		0	60	60.0	#########	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	#########	
Naphthalene	0	0		0	140	140	#########	
Nitrobenzene	0	0		0	4,000	4,000	#########	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	#########	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	#########	
Phenanthrene	0	0		0	5	5.0	51,286,113	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	#########	

☑ *CFC* CCT (min): 720 PMF: 0.552 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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	
Fluoride (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	#########	
Total Arsenic	0	0		0	150	150	#########	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	#########	
Total Boron	0	0		0	1,600	1,600	#########	
Total Cadmium	0	0		0	0.246	0.27	19,231,568	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.115	86.2	#########	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	#########	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	#########	
Total Copper	0	0		0	8.956	9.33	#########	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	#########	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	#########	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	64,375,730	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	#########	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	#########	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	#########	
Total Zinc	0	0		0	118.139	120	#########	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	#########	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	#########	
Benzene	0	0		0	130	130	#########	
Bromoform	0	0		0	370	370	#########	
Carbon Tetrachloride	0	0		0	560	560	#########	
Chlorobenzene	0	0		0	240	240	#########	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	#########	
Chloroform	0	0		0	390	390	#########	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	#########	
1,1-Dichloroethylene	0	0		0	1,500	1,500	#########	
1,2-Dichloropropane	0	0		0	2,200	2,200	#########	
1,3-Dichloropropylene	0	0		0	61	61.0	#########	
Ethylbenzene	0	0		0	580	580	#########	
Methyl Bromide	0	0		0	110	110	#########	
Methyl Chloride	0	0		0	5,500	5,500	#########	
Methylene Chloride	0	0		0	2,400	2,400	#########	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	#########	
Tetrachloroethylene	0	0		0	140	140	#########	
Toluene	0	0		0	330	330	#########	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	#########	
1,1,1-Trichloroethane	0	0		0	610	610	#########	
1,1,2-Trichloroethane	0	0		0	680	680	#########	
Trichloroethylene	0	0		0	450	450	#########	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	#########	
2,4-Dichlorophenol	0	0		0	340	340	#########	
2,4-Dimethylphenol	0	0		0	130	130	#########	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	#########	
2,4-Dinitrophenol	0	0		0	130	130	#########	

2-Nitrophenol	0	0		0	1,600	1,600	#########
4-Nitrophenol	0	0		0	470	470	#########
p-Chloro-m-Cresol	0	0		0	500	500	#########
Pentachlorophenol	0	0		0	6.693	6.69	#########
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	91	91.0	#########
Acenaphthene	0	0		0	17	17.0	#########
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	59	59.0	#########
Benzo(a)Anthracene	0	0		0	0.1	0.1	7,106,412
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	#########
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	#########
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	#########
Butyl Benzyl Phthalate	0	0		0	35	35.0	#########
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	#########
1,3-Dichlorobenzene	0	0		0	69	69.0	#########
1,4-Dichlorobenzene	0	0		0	150	150	#########
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	800	800	#########
Dimethyl Phthalate	0	0		0	500	500	#########
Di-n-Butyl Phthalate	0	0		0	21	21.0	#########
2,4-Dinitrotoluene	0	0		0	320	320	#########
2,6-Dinitrotoluene	0	0		0	200	200	#########
1,2-Diphenylhydrazine	0	0		0	3	3.0	#########
Fluoranthene	0	0		0	40	40.0	#########
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	#########
Hexachlorocyclopentadiene	0	0		0	1	1.0	71,064,117
Hexachloroethane	0	0		0	12	12.0	#########
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	2,100	2,100	#########
Naphthalene	0	0		0	43	43.0	#########
Nitrobenzene	0	0		0	810	810	#########
n-Nitrosodimethylamine	0	0		0	3,400	3,400	#########
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	59	59.0	#########
Phenanthrene	0	0		0	1	1.0	71,064,117

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	#########	

☑ ***THH*** CCT (min): 720 PMF: 0.552 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	#########	
Total Arsenic	0	0		0	10	10.0	#########	
Total Barium	0	0		0	2,400	2,400	#########	
Total Boron	0	0		0	3,100	3,100	#########	
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	
Dissolved Iron	0	0		0	300	300	#########	
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	#########	
Total Mercury	0	0		0	0.050	0.05	3,553,206	
Total Nickel	0	0		0	610	610	#########	
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	17,055,388	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	#########	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	#########	
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	#########	
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	#########	

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	#########	
Methyl Bromide	0	0		0	100	100.0	#########	
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	#########	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	#########	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	#########	
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	#########	
2,4-Dichlorophenol	0	0		0	10	10.0	#########	
2,4-Dimethylphenol	0	0		0	100	100.0	#########	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	#########	
2,4-Dinitrophenol	0	0		0	10	10.0	#########	
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	#########	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	#########	
Anthracene	0	0		0	300	300	#########	
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	#########	
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	7,106,412	
2-Chloronaphthalene	0	0		0	800	800	#########	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	#########	
1,3-Dichlorobenzene	0	0		0	7	7.0	#########	
1,4-Dichlorobenzene	0	0		0	300	300	#########	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	#########	

Dimethyl Phthalate	0	0		0	2,000	2,000	#########	
Di-n-Butyl Phthalate	0	0		0	20	20.0	#########	
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	#########	
Fluorene	0	0		0	50	50.0	#########	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	#########	
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	#########	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	#########	
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	#########	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	4,974,488	

☑ *CRL* CCT (min): 720 PMF: 0.774 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	19,454,120	
Acrylonitrile	0	0		0	0.06	0.06	16,674,960	
Benzene	0	0		0	0.58	0.58	#########	
Bromoform	0	0		0	7	7.0	#########	
Carbon Tetrachloride	0	0		0	0.4	0.4	#########	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	#########	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	#########	
1,2-Dichloroethane	0	0		0	9.9	9.9	#########	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	#########	
1,3-Dichloropropylene	0	0		0	0.27	0.27	75,037,322	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	#########	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	55,583,201	
Tetrachloroethylene	0	0		0	10	10.0	#########	
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	#########	
Trichloroethylene	0	0		0	0.6	0.6	#########	
Vinyl Chloride	0	0		0	0.02	0.02	5,558,320	
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	8,337,480	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	#########	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	27,792	
Benzo(a)Anthracene	0	0		0	0.001	0.001	277,916	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	27,792	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	277,916	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	2,779,160	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	8,337,480	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	88,933,122	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	33,349,921	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	27,792	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	13,895,800	
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	13,895,800	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	13,895,800	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	8,337,480	
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	22,233	
Hexachlorobutadiene	0	0		0	0.01	0.01	2,779,160	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	27,791,601	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	277,916	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	194,541	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	1,389,580	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	#########	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	#########	µg/L	Discharge Conc < TQL
Total Beryllium	N/A	N/A	No WQS
Total Boron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	14,024,548	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	#########	µg/L	Discharge Conc < TQL
Hexavalent Chromium	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	#########	µg/L	Discharge Conc < TQL

Total Copper	92,036,437	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	3,553,206	µg/L	Discharge Conc < TQL
Total Nickel	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	#########	µg/L	Discharge Conc < TQL
Total Silver	24,880,537	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	17,055,388	µg/L	Discharge Conc < TQL
Total Zinc	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	19,723,397	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylamide	19,454,120	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	16,674,960	µg/L	Discharge Conc ≤ 25% WQBEL
Benzene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	#########	µg/L	Discharge Conc < TQL
Chlorodibromomethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	#########	µg/L	Discharge Conc < TQL
Chloroform	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	75,037,322	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	55,583,201	µg/L	Discharge Conc ≤ 25% WQBEL
Tetrachloroethylene	#########	µg/L	Discharge Conc < TQL
Toluene	#########	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	#########	µg/L	Discharge Conc < TQL
Trichloroethylene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Vinyl Chloride	5,558,320	µg/L	Discharge Conc < TQL
2-Chlorophenol	#########	µg/L	Discharge Conc < TQL

2,4-Dichlorophenol	#########	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	#########	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	#########	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	#########	µg/L	Discharge Conc < TQL
2-Nitrophenol	#########	µg/L	Discharge Conc < TQL
4-Nitrophenol	#########	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	#########	µg/L	Discharge Conc < TQL
Pentachlorophenol	8,337,480	µg/L	Discharge Conc < TQL
Phenol	#########	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	#########	µg/L	Discharge Conc < TQL
Acenaphthene	#########	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	#########	µg/L	Discharge Conc < TQL
Benzidine	27,792	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	277,916	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	27,792	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	277,916	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	2,779,160	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	8,337,480	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	#########	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	88,933,122	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	#########	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	7,106,412	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	#########	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	33,349,921	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	27,792	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	#########	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	#########	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	#########	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	13,895,800	µg/L	Discharge Conc < TQL
Diethyl Phthalate	#########	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	#########	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	#########	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	13,895,800	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	13,895,800	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	8,337,480	µg/L	Discharge Conc < TQL
Fluoranthene	#########	µg/L	Discharge Conc < TQL
Fluorene	#########	µg/L	Discharge Conc < TQL
Hexachlorobenzene	22,233	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	2,779,160	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	32,872,328	µg/L	Discharge Conc < TQL

Hexachloroethane	27,791,601	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	277,916	µg/L	Discharge Conc < TQL
Isophorone	#########	µg/L	Discharge Conc < TQL
Naphthalene	#########	µg/L	Discharge Conc < TQL
Nitrobenzene	#########	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	194,541	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	1,389,580	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	#########	µg/L	Discharge Conc < TQL
Phenanthrene	32,872,328	µg/L	Discharge Conc < TQL
Pyrene	#########	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	4,974,488	µg/L	Discharge Conc < TQL

Attachment H:

IMP 921 Toxics Management Spreadsheet Evaluation

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 921

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: DI Test Loop Wastewater

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.00002	1.9	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		10									
	Chloride (PWS)	mg/L		0.712									
	Bromide	mg/L		0.054									
	Sulfate (PWS)	mg/L		0.758									
	Fluoride (PWS)	mg/L		0.026									
Group 2	Total Aluminum	µg/L	<	13									
	Total Antimony	µg/L	<	0.91									
	Total Arsenic	µg/L	<	0.3									
	Total Barium	µg/L	<	1.2									
	Total Beryllium	µg/L	<	0.25									
	Total Boron	µg/L		120									
	Total Cadmium	µg/L	<	0.21									
	Total Chromium (III)	µg/L	<	0.76									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L	<	0.1									
	Total Copper	µg/L		76									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		92									
	Total Iron	µg/L	<	41									
	Total Lead	µg/L		1.4									
	Total Manganese	µg/L	<	2.2									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		98									
	Total Phenols (Phenolics) (PWS)	µg/L	<	9.3									
	Total Selenium	µg/L	<	0.7									
	Total Silver	µg/L	<	0.79									
	Total Thallium	µg/L	<	0.38									
	Total Zinc	µg/L	<	6.3									
	Total Molybdenum	µg/L	<	0.7									
	Acrolein	µg/L	<	16									
	Acrylamide	µg/L	<	10									
	Acrylonitrile	µg/L	<	7.8									
	Benzene	µg/L	<	0.6									
	Bromoform	µg/L	<	0.98									

Group 3	Carbon Tetrachloride	µg/L	<	0.88										
	Chlorobenzene	µg/L	<	0.5										
	Chlorodibromomethane	µg/L	<	0.84										
	Chloroethane	µg/L	<	0.9										
	2-Chloroethyl Vinyl Ether	µg/L	<	1.7										
	Chloroform	µg/L	<	0.6										
	Dichlorobromomethane	µg/L	<	0.64										
	1,1-Dichloroethane	µg/L	<	0.31										
	1,2-Dichloroethane	µg/L	<	0.57										
	1,1-Dichloroethylene	µg/L	<	0.55										
	1,2-Dichloropropane	µg/L	<	0.66										
	1,3-Dichloropropylene	µg/L	<	1.1										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.51										
	Methyl Bromide	µg/L	<	0.89										
	Methyl Chloride	µg/L	<	0.9										
	Methylene Chloride	µg/L	<	0.89										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.6										
	Tetrachloroethylene	µg/L	<	0.47										
	Toluene	µg/L	<	0.46										
	1,2-trans-Dichloroethylene	µg/L	<	0.67										
	1,1,1-Trichloroethane	µg/L	<	0.6										
	1,1,2-Trichloroethane	µg/L	<	0.45										
	Trichloroethylene	µg/L	<	0.69										
	Vinyl Chloride	µg/L	<	0.4										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.149										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.18										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.26										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.46										
	2,4,6-Trichlorophenol	µg/L	<	0.21										
Group 5	Acenaphthene	µg/L	<	0.062										
	Acenaphthylene	µg/L	<	0.062										
	Anthracene	µg/L	<	0.047										
	Benzidine	µg/L	<	8.7										
	Benzo(a)Anthracene	µg/L	<	0.071										
	Benzo(a)Pyrene	µg/L	<	0.05										
	3,4-Benzofluoranthene	µg/L	<	0.092										
	Benzo(ghi)Perylene	µg/L	<	0.066										
	Benzo(k)Fluoranthene	µg/L	<	0.084										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.14										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.055										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5.9										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.3										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.056										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L	<	0.077										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.069										
	1,2-Dichlorobenzene	µg/L	<	0.09										
	1,3-Dichlorobenzene	µg/L	<	0.094										
	1,4-Dichlorobenzene	µg/L	<	0.058										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.54										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L	<	0.98										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.16										
	Di-n-Octyl Phthalate	µg/L	<	0.65										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L	<	0.057										
	Fluorene	µg/L	<	0.66										
	Hexachlorobenzene	µg/L	<	0.053										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.47										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.081										
	Isophorone	µg/L	<	0.2										
	Naphthalene	µg/L	<	0.056										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.052										
	Pyrene	µg/L	<	0.051										
	1,2,4-Trichlorobenzene	µg/L	<	0.12										
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												

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 921

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.080 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	#########	
Total Antimony	0	0		0	1,100	1,100	#########	
Total Arsenic	0	0		0	340	340	#########	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	#########	
Total Boron	0	0		0	8,100	8,100	#########	
Total Cadmium	0	0		0	2.014	2.13	13,128,329	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	#########	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	#########	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	#########	
Total Copper	0	0		0	13.439	14.0	86,154,979	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	#########	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	10,136,550	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	#########	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	23,290,580	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	#########	
Total Zinc	0	0		0	117.180	120	#########	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	18,463,002	

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 921

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

(●) Statewide Criteria
( ) Great Lakes Criteria
( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	15.2	736	11500			Yes
End of Reach 1	042122	13.3	735	11501			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	15.2	0.1	2390			1000	15					100	7		
End of Reach 1	13.3	0.1	2390			1000	15								

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	15.2														
End of Reach 1	13.3														

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	#########	
Benzene	0	0		0	640	640	#########	
Bromoform	0	0		0	1,800	1,800	#########	
Carbon Tetrachloride	0	0		0	2,800	2,800	#########	
Chlorobenzene	0	0		0	1,200	1,200	#########	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	#########	
Chloroform	0	0		0	1,900	1,900	#########	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	#########	
1,1-Dichloroethylene	0	0		0	7,500	7,500	#########	
1,2-Dichloropropane	0	0		0	11,000	11,000	#########	
1,3-Dichloropropylene	0	0		0	310	310	#########	
Ethylbenzene	0	0		0	2,900	2,900	#########	
Methyl Bromide	0	0		0	550	550	#########	
Methyl Chloride	0	0		0	28,000	28,000	#########	
Methylene Chloride	0	0		0	12,000	12,000	#########	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	#########	
Tetrachloroethylene	0	0		0	700	700	#########	
Toluene	0	0		0	1,700	1,700	#########	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	#########	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	#########	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	#########	
Trichloroethylene	0	0		0	2,300	2,300	#########	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	#########	
2,4-Dichlorophenol	0	0		0	1,700	1,700	#########	
2,4-Dimethylphenol	0	0		0	660	660	#########	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	#########	
2,4-Dinitrophenol	0	0		0	660	660	#########	
2-Nitrophenol	0	0		0	8,000	8,000	#########	
4-Nitrophenol	0	0		0	2,300	2,300	#########	
p-Chloro-m-Cresol	0	0		0	160	160	#########	
Pentachlorophenol	0	0		0	8.723	8.72	53,686,230	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	#########	
Acenaphthene	0	0		0	83	83.0	#########	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	#########	
Benzo(a)Anthracene	0	0		0	0.5	0.5	3,077,167	
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	#########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	#########	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	#########	

Butyl Benzyl Phthalate	0	0		0	140	140	#########	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	#########	
1,3-Dichlorobenzene	0	0		0	350	350	#########	
1,4-Dichlorobenzene	0	0		0	730	730	#########	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	#########	
Dimethyl Phthalate	0	0		0	2,500	2,500	#########	
Di-n-Butyl Phthalate	0	0		0	110	110	#########	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	#########	
2,6-Dinitrotoluene	0	0		0	990	990	#########	
1,2-Diphenylhydrazine	0	0		0	15	15.0	92,315,010	
Fluoranthene	0	0		0	200	200	#########	
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	61,543,340	
Hexachlorocyclopentadiene	0	0		0	5	5.0	30,771,670	
Hexachloroethane	0	0		0	60	60.0	#########	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	#########	
Naphthalene	0	0		0	140	140	#########	
Nitrobenzene	0	0		0	4,000	4,000	#########	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	#########	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	#########	
Phenanthrene	0	0		0	5	5.0	30,771,670	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	#########	

☑ *CFC* CCT (min): 720 PMF: 0.552 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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	
Fluoride (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	#########	
Total Arsenic	0	0		0	150	150	#########	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	#########	
Total Boron	0	0		0	1,600	1,600	#########	
Total Cadmium	0	0		0	0.246	0.27	11,538,941	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.115	86.2	#########	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	#########	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	#########	
Total Copper	0	0		0	8.956	9.33	#########	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	#########	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	#########	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	38,625,438	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	#########	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	#########	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	#########	
Total Zinc	0	0		0	118.139	120	#########	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	#########	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	#########	
Benzene	0	0		0	130	130	#########	
Bromoform	0	0		0	370	370	#########	
Carbon Tetrachloride	0	0		0	560	560	#########	
Chlorobenzene	0	0		0	240	240	#########	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	#########	
Chloroform	0	0		0	390	390	#########	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	#########	
1,1-Dichloroethylene	0	0		0	1,500	1,500	#########	
1,2-Dichloropropane	0	0		0	2,200	2,200	#########	
1,3-Dichloropropylene	0	0		0	61	61.0	#########	
Ethylbenzene	0	0		0	580	580	#########	
Methyl Bromide	0	0		0	110	110	#########	
Methyl Chloride	0	0		0	5,500	5,500	#########	
Methylene Chloride	0	0		0	2,400	2,400	#########	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	#########	
Tetrachloroethylene	0	0		0	140	140	#########	
Toluene	0	0		0	330	330	#########	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	#########	
1,1,1-Trichloroethane	0	0		0	610	610	#########	
1,1,2-Trichloroethane	0	0		0	680	680	#########	
Trichloroethylene	0	0		0	450	450	#########	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	#########	
2,4-Dichlorophenol	0	0		0	340	340	#########	
2,4-Dimethylphenol	0	0		0	130	130	#########	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	#########	
2,4-Dinitrophenol	0	0		0	130	130	#########	

2-Nitrophenol	0	0		0	1,600	1,600	#########	
4-Nitrophenol	0	0		0	470	470	#########	
p-Chloro-m-Cresol	0	0		0	500	500	#########	
Pentachlorophenol	0	0		0	6.693	6.69	#########	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	#########	
Acenaphthene	0	0		0	17	17.0	#########	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	#########	
Benzo(a)Anthracene	0	0		0	0.1	0.1	4,263,847	
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	#########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	#########	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	#########	
Butyl Benzyl Phthalate	0	0		0	35	35.0	#########	
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	#########	
1,3-Dichlorobenzene	0	0		0	69	69.0	#########	
1,4-Dichlorobenzene	0	0		0	150	150	#########	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	#########	
Dimethyl Phthalate	0	0		0	500	500	#########	
Di-n-Butyl Phthalate	0	0		0	21	21.0	#########	
2,4-Dinitrotoluene	0	0		0	320	320	#########	
2,6-Dinitrotoluene	0	0		0	200	200	#########	
1,2-Diphenylhydrazine	0	0		0	3	3.0	#########	
Fluoranthene	0	0		0	40	40.0	#########	
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	85,276,942	
Hexachlorocyclopentadiene	0	0		0	1	1.0	42,638,471	
Hexachloroethane	0	0		0	12	12.0	#########	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	#########	
Naphthalene	0	0		0	43	43.0	#########	
Nitrobenzene	0	0		0	810	810	#########	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	#########	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	#########	
Phenanthrene	0	0		0	1	1.0	42,638,471	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	#########	

☑ ***THH*** CCT (min): 720 PMF: 0.552 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	#########	
Total Arsenic	0	0		0	10	10.0	#########	
Total Barium	0	0		0	2,400	2,400	#########	
Total Boron	0	0		0	3,100	3,100	#########	
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	
Dissolved Iron	0	0		0	300	300	#########	
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	#########	
Total Mercury	0	0		0	0.050	0.05	2,131,924	
Total Nickel	0	0		0	610	610	#########	
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	10,233,233	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	#########	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	#########	
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	#########	
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	#########	

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	#########	
Methyl Bromide	0	0		0	100	100.0	#########	
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	#########	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	#########	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	#########	
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	#########	
2,4-Dichlorophenol	0	0		0	10	10.0	#########	
2,4-Dimethylphenol	0	0		0	100	100.0	#########	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	85,276,942	
2,4-Dinitrophenol	0	0		0	10	10.0	#########	
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	#########	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	#########	
Anthracene	0	0		0	300	300	#########	
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	#########	
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	4,263,847	
2-Chloronaphthalene	0	0		0	800	800	#########	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	#########	
1,3-Dichlorobenzene	0	0		0	7	7.0	#########	
1,4-Dichlorobenzene	0	0		0	300	300	#########	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	#########	

Dimethyl Phthalate	0	0		0	2,000	2,000	#########	
Di-n-Butyl Phthalate	0	0		0	20	20.0	#########	
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	#########	
Fluorene	0	0		0	50	50.0	#########	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	#########	
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	#########	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	#########	
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	#########	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	2,984,693	

☑ *CRL* CCT (min): 720 PMF: 0.774 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	11,672,472	
Acrylonitrile	0	0		0	0.06	0.06	10,004,976	
Benzene	0	0		0	0.58	0.58	96,714,770	
Bromoform	0	0		0	7	7.0	#########	
Carbon Tetrachloride	0	0		0	0.4	0.4	66,699,842	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	#########	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	#########	
1,2-Dichloroethane	0	0		0	9.9	9.9	#########	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	#########	
1,3-Dichloropropylene	0	0		0	0.27	0.27	45,022,393	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	#########	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	33,349,921	
Tetrachloroethylene	0	0		0	10	10.0	#########	
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	91,712,282	
Trichloroethylene	0	0		0	0.6	0.6	#########	
Vinyl Chloride	0	0		0	0.02	0.02	3,334,992	
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	5,002,488	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	#########	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	16,675	
Benzo(a)Anthracene	0	0		0	0.001	0.001	166,750	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	16,675	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	166,750	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	1,667,496	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	5,002,488	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	53,359,873	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	20,009,952	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	16,675	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	8,337,480	
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	8,337,480	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	8,337,480	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	5,002,488	
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	13,340	
Hexachlorobutadiene	0	0		0	0.01	0.01	1,667,496	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	16,674,960	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	166,750	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	116,725	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	833,748	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	#########	
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* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments

☑ ***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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	#########	µg/L	Discharge Conc < TQL
Total Beryllium	N/A	N/A	No WQS
Total Boron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	8,414,729	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	#########	µg/L	Discharge Conc < TQL
Hexavalent Chromium	64,271,766	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	#########	µg/L	Discharge Conc < TQL

Total Copper	55,221,863	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	2,131,924	µg/L	Discharge Conc < TQL
Total Nickel	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	#########	µg/L	Discharge Conc < TQL
Total Silver	14,928,322	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	10,233,233	µg/L	Discharge Conc < TQL
Total Zinc	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	11,834,039	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylamide	11,672,472	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	10,004,976	µg/L	Discharge Conc ≤ 25% WQBEL
Benzene	96,714,770	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	66,699,842	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	#########	µg/L	Discharge Conc < TQL
Chlorodibromomethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	#########	µg/L	Discharge Conc < TQL
Chloroform	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	45,022,393	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	33,349,921	µg/L	Discharge Conc ≤ 25% WQBEL
Tetrachloroethylene	#########	µg/L	Discharge Conc < TQL
Toluene	#########	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	#########	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	91,712,282	µg/L	Discharge Conc < TQL
Trichloroethylene	#########	µg/L	Discharge Conc ≤ 25% WQBEL
Vinyl Chloride	3,334,992	µg/L	Discharge Conc < TQL
2-Chlorophenol	#########	µg/L	Discharge Conc < TQL

2,4-Dichlorophenol	#########	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	#########	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	85,276,942	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	#########	µg/L	Discharge Conc < TQL
2-Nitrophenol	#########	µg/L	Discharge Conc < TQL
4-Nitrophenol	#########	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	#########	µg/L	Discharge Conc < TQL
Pentachlorophenol	5,002,488	µg/L	Discharge Conc < TQL
Phenol	#########	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	#########	µg/L	Discharge Conc < TQL
Acenaphthene	#########	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	#########	µg/L	Discharge Conc < TQL
Benzidine	16,675	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	166,750	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	16,675	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	166,750	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	1,667,496	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	5,002,488	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	#########	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	53,359,873	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	#########	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	4,263,847	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	#########	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	20,009,952	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	16,675	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	#########	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	#########	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	#########	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	8,337,480	µg/L	Discharge Conc < TQL
Diethyl Phthalate	#########	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	#########	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	#########	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	8,337,480	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	8,337,480	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	5,002,488	µg/L	Discharge Conc < TQL
Fluoranthene	#########	µg/L	Discharge Conc < TQL
Fluorene	#########	µg/L	Discharge Conc < TQL
Hexachlorobenzene	13,340	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	1,667,496	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	19,723,398	µg/L	Discharge Conc < TQL

Hexachloroethane	16,674,960	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	166,750	µg/L	Discharge Conc < TQL
Isophorone	#########	µg/L	Discharge Conc < TQL
Naphthalene	#########	µg/L	Discharge Conc < TQL
Nitrobenzene	#########	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	116,725	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	833,748	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	#########	µg/L	Discharge Conc < TQL
Phenanthrene	19,723,398	µg/L	Discharge Conc < TQL
Pyrene	#########	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	2,984,693	µg/L	Discharge Conc < TQL

Attachment I:

Outfall 003 StreamStats Report

StreamStats Report

Region ID: PA
Workspace ID: PA20230719144924592000
Clicked Point (Latitude, Longitude): 40.55276, -79.81595
Time: 2023-07-19 10:49:51 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.11	square miles
ELEV	Mean Basin Elevation	1009	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.11	square miles	2.26	1400
ELEV	Mean Basin Elevation	1009	feet	1050	2580

Low-Flow Statistics Disclaimers [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 [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00197	ft^3/s

Statistic	Value	Unit
30 Day 2 Year Low Flow	0.00416	ft^3/s
7 Day 10 Year Low Flow	0.00049	ft^3/s
30 Day 10 Year Low Flow	0.00122	ft^3/s
90 Day 10 Year Low Flow	0.00267	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/)

Application Version: 4.16.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment J:

Outfall 003 Temperature Model Evaluation

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, Draft, August, 2023

Instructions | *Inputs*

Facility: **Curtiss-Wright** Permit No.: **PA0001228**

Stream Name: **Unt to Allegheny** Analyst/Engineer: **Adam Olesnanik**

Stream Q7-10 (cfs)*: **0.0** Outfall No.: **003** Analysis Type*: **WWF**

	Facility Flows				Stream Flows				Temperature
Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)	Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)	Ambient Stream Temperature (°F)*
Jan 1-31		0.248		0.248	3.2	1.00	0.00	0.39	
Feb 1-29		0.248		0.248	3.5	1.00	0.00	0.39	
Mar 1-31		0.248		0.248	7	1.00	0.00	0.39	
Apr 1-15		0.248		0.248	9.3	1.00	0.00	0.39	
Apr 16-30		0.248		0.248	9.3	1.00	0.00	0.39	
May 1-15		0.248		0.248	5.1	1.00	0.00	0.39	
May 16-31		0.248		0.248	5.1	1.00	0.00	0.39	
Jun 1-15		0.248		0.248	3	1.00	0.00	0.39	
Jun 16-30		0.248		0.248	3	1.00	0.00	0.39	
Jul 1-31		0.248		0.248	1.7	1.00	0.00	0.38	
Aug 1-15		0.248		0.248	1.4	1.00	0.00	0.38	
Aug 16-31		0.248		0.248	1.4	1.00	0.00	0.38	
Sep 1-15		0.248		0.248	1.1	1.00	0.00	0.38	
Sep 16-30		0.248		0.248	1.1	1.00	0.00	0.38	
Oct 1-15		0.248		0.248	1.2	1.00	0.00	0.38	
Oct 16-31		0.248		0.248	1.2	1.00	0.00	0.38	
Nov 1-15		0.248		0.248	1.6	1.00	0.00	0.38	
Nov 16-30		0.248		0.248	1.6	1.00	0.00	0.38	
Dec 1-31		0.248		0.248	2.4	1.00	0.00	0.38	

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Thermal Limits Spreadsheet
Version 1.0, Draft, August, 2023

Instructions | *WWF Results*

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**WWF** Target Maximum Stream Temp. (ºF)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (ºF)
Jan 1-31	40	N/A -- Case 2	40.0
Feb 1-29	40	N/A -- Case 2	40.0
Mar 1-31	46	N/A -- Case 2	46.1
Apr 1-15	52	N/A -- Case 2	52.1
Apr 16-30	58	N/A -- Case 2	58.1
May 1-15	64	N/A -- Case 2	64.0
May 16-31	72	N/A -- Case 2	72.1
Jun 1-15	80	N/A -- Case 2	80.0
Jun 16-30	84	N/A -- Case 2	84.0
Jul 1-31	87	N/A -- Case 2	87.0
Aug 1-15	87	N/A -- Case 2	87.0
Aug 16-31	87	N/A -- Case 2	87.0
Sep 1-15	84	N/A -- Case 2	84.0
Sep 16-30	78	N/A -- Case 2	78.0
Oct 1-15	72	N/A -- Case 2	72.0
Oct 16-31	66	N/A -- Case 2	66.0
Nov 1-15	58	N/A -- Case 2	58.0
Nov 16-30	50	N/A -- Case 2	50.0
Dec 1-31	42	N/A -- Case 2	42.0

Attachment K:

Outfall 003 TRC Spreadsheet Evaluation

TRC EVALUATION

0.00049	= Q stream (cfs)	0.5	= CV Daily
0.248	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= 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)
	= %Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	**1.3.2.iii**	WLA afc =	0.019	**1.3.2.iii**	WLA cfc =	0.011
PENTOXSD TRG	**5.1a**	LTAMULT afc =	0.373	**5.1c**	LTAMULT cfc =	0.581
PENTOXSD TRG	**5.1b**	LTA_afc=	0.007	**5.1d**	LTA_cfc =	0.007

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.011	CFC
		INST MAX LIMIT (mg/l) =	0.027	

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)**

Attachment L:

IMP 113 Toxics Management Spreadsheet Evaluation

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 113

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: LiOH Test Loop Wastewater

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.0025	26	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Strea m CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteri a Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		180									
	Chloride (PWS)	mg/L		9.66									
	Bromide	mg/L		0.0578									
	Sulfate (PWS)	mg/L		4.66									
	Fluoride (PWS)	mg/L		0.105									
Group 2	Total Aluminum	µg/L		290									
	Total Antimony	µg/L		0.8									
	Total Arsenic	µg/L		0.8									
	Total Barium	µg/L		3									
	Total Beryllium	µg/L		0.47									
	Total Boron	µg/L	<	63									
	Total Cadmium	µg/L		0.53									
	Total Chromium (III)	µg/L		51									
	Hexavalent Chromium	µg/L		48									
	Total Cobalt	µg/L		0.5									
	Total Copper	µg/L		13									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		610									
	Total Iron	µg/L		4100									
	Total Lead	µg/L		0.7									
	Total Manganese	µg/L		360									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		1.6									
	Total Phenols (Phenolics) (PWS)	µg/L		44									
	Total Selenium	µg/L		0.9									
	Total Silver	µg/L		0.28									
	Total Thallium	µg/L		1.2									
	Total Zinc	µg/L		18									
	Total Molybdenum	µg/L		2.1									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<	11									
	Acrylonitrile	µg/L	<	1.1									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.2									

Group 3	Carbon Tetrachloride	µg/L	<	0.4										
	Chlorobenzene	µg/L	<	0.2										
	Chlorodibromomethane	µg/L	<	0.2										
	Chloroethane	µg/L	<	0.4										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5										
	Chloroform	µg/L	<	0.2										
	Dichlorobromomethane	µg/L	<	0.2										
	1,1-Dichloroethane	µg/L	<	0.2										
	1,2-Dichloroethane	µg/L	<	0.3										
	1,1-Dichloroethylene	µg/L	<	0.3										
	1,2-Dichloropropane	µg/L	<	0.2										
	1,3-Dichloropropylene	µg/L	<	0.2										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.2										
	Methyl Bromide	µg/L	<	0.4										
	Methyl Chloride	µg/L	<	0.6										
	Methylene Chloride	µg/L	<	0.3										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2										
	Tetrachloroethylene	µg/L	<	0.3										
	Toluene	µg/L	<	0.2										
	1,2-trans-Dichloroethylene	µg/L	<	0.2										
	1,1,1-Trichloroethane	µg/L	<	0.2										
	1,1,2-Trichloroethane	µg/L	<	0.2										
	Trichloroethylene	µg/L	<	0.2										
	Vinyl Chloride	µg/L	<	0.3										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.049										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.19										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.27										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.49										
	2,4,6-Trichlorophenol	µg/L	<	0.22										
Group 5	Acenaphthene	µg/L	<	0.063										
	Acenaphthylene	µg/L	<	0.063										
	Anthracene	µg/L		0.21										
	Benzidine	µg/L	<	8.8										
	Benzo(a)Anthracene	µg/L		1										
	Benzo(a)Pyrene	µg/L		0.6										
	3,4-Benzofluoranthene	µg/L		1.3										
	Benzo(ghi)Perylene	µg/L		0.76										
	Benzo(k)Fluoranthene	µg/L		1.1										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.15										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.056										
	Bis(2-Ethylhexyl)Phthalate	µg/L		26										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.31										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.057										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L		0.94										
	Dibenzo(a,h)Anthrancene	µg/L		1										
	1,2-Dichlorobenzene	µg/L	<	0.091										
	1,3-Dichlorobenzene	µg/L	<	0.095										
	1,4-Dichlorobenzene	µg/L	<	0.059										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.55										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L		0.76										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.17										
	Di-n-Octyl Phthalate	µg/L		1.6										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L		0.76										
	Fluorene	µg/L	<	0.066										
	Hexachlorobenzene	µg/L		0.25										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.48										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.1										
	Isophorone	µg/L	<	0.18										
	Naphthalene	µg/L		0.06										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.053										
	Pyrene	µg/L		0.69										
	1,2,4-Trichlorobenzene	µg/L	<	0.13										
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 113

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Unt to Allegheny 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	042368	0.8	900	0.11			Yes
End of Reach 1	042368	0.1	750	0.42			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	0.8	0.1	0.00049									100	7		
End of Reach 1	0.1	0.1	0.00246												

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	0.8														
End of Reach 1	0.1														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 113

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.001 PMF: 1 Analysis Hardness (mg/l): 34.321 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	845	
Total Antimony	0	0		0	1,100	1,100	1,239	
Total Arsenic	0	0		0	340	340	383	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	23,661	
Total Boron	0	0		0	8,100	8,100	9,126	
Total Cadmium	0	0		0	0.711	0.72	0.81	Chem Translator of 0.989 applied
Total Chromium (III)	0	0		0	237.313	751	846	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	18.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	107	
Total Copper	0	0		0	4.907	5.11	5.76	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	19.814	20.9	23.6	Chem Translator of 0.947 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.86	Chem Translator of 0.85 applied
Total Nickel	0	0		0	189.475	190	214	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	0.511	0.6	0.68	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	73.2	
Total Zinc	0	0		0	47.352	48.4	54.6	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.38	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	732	
Benzene	0	0		0	640	640	721	
Bromoform	0	0		0	1,800	1,800	2,028	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,155	
Chlorobenzene	0	0		0	1,200	1,200	1,352	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	20,281	
Chloroform	0	0		0	1,900	1,900	2,141	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	16,900	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,450	
1,2-Dichloropropane	0	0		0	11,000	11,000	12,394	
1,3-Dichloropropylene	0	0		0	310	310	349	
Ethylbenzene	0	0		0	2,900	2,900	3,267	
Methyl Bromide	0	0		0	550	550	620	
Methyl Chloride	0	0		0	28,000	28,000	31,548	
Methylene Chloride	0	0		0	12,000	12,000	13,520	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,127	
Tetrachloroethylene	0	0		0	700	700	789	
Toluene	0	0		0	1,700	1,700	1,915	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,662	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,380	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,831	
Trichloroethylene	0	0		0	2,300	2,300	2,591	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	631	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,915	
2,4-Dimethylphenol	0	0		0	660	660	744	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	90.1	
2,4-Dinitrophenol	0	0		0	660	660	744	
2-Nitrophenol	0	0		0	8,000	8,000	9,014	
4-Nitrophenol	0	0		0	2,300	2,300	2,591	
p-Chloro-m-Cresol	0	0		0	160	160	180	
Pentachlorophenol	0	0		0	8.723	8.72	9.83	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	518	
Acenaphthene	0	0		0	83	83.0	93.5	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	338	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.56	
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	33,801	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,070	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	304	

Butyl Benzyl Phthalate	0	0		0	140	140	158	
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	924	
1,3-Dichlorobenzene	0	0		0	350	350	394	
1,4-Dichlorobenzene	0	0		0	730	730	822	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,507	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,817	
Di-n-Butyl Phthalate	0	0		0	110	110	124	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,803	
2,6-Dinitrotoluene	0	0		0	990	990	1,115	
1,2-Diphenylhydrazine	0	0		0	15	15.0	16.9	
Fluoranthene	0	0		0	200	200	225	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	11.3	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.63	
Hexachloroethane	0	0		0	60	60.0	67.6	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	11,267	
Naphthalene	0	0		0	140	140	158	
Nitrobenzene	0	0		0	4,000	4,000	4,507	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	19,154	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	338	
Phenanthrene	0	0		0	5	5.0	5.63	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	146	

☑ *CFC* CCT (min): 0.001 PMF: 1 Analysis Hardness (mg/l): 34.321 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	
Fluoride (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	248	
Total Arsenic	0	0		0	150	150	169	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,619	
Total Boron	0	0		0	1,600	1,600	1,803	
Total Cadmium	0	0		0	0.117	0.12	0.14	Chem Translator of 0.954 applied
Total Chromium (III)	0	0		0	30.870	35.9	40.4	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.7	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	21.4	
Total Copper	0	0		0	3.591	3.74	4.21	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,690	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	0.772	0.82	0.92	Chem Translator of 0.947 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.02	Chem Translator of 0.85 applied
Total Nickel	0	0		0	21.045	21.1	23.8	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.62	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	14.6	
Total Zinc	0	0		0	47.739	48.4	54.6	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.38	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	146	
Benzene	0	0		0	130	130	146	
Bromoform	0	0		0	370	370	417	
Carbon Tetrachloride	0	0		0	560	560	631	
Chlorobenzene	0	0		0	240	240	270	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,943	
Chloroform	0	0		0	390	390	439	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,493	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,690	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,479	
1,3-Dichloropropylene	0	0		0	61	61.0	68.7	
Ethylbenzene	0	0		0	580	580	653	
Methyl Bromide	0	0		0	110	110	124	
Methyl Chloride	0	0		0	5,500	5,500	6,197	
Methylene Chloride	0	0		0	2,400	2,400	2,704	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	237	
Tetrachloroethylene	0	0		0	140	140	158	
Toluene	0	0		0	330	330	372	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,577	
1,1,1-Trichloroethane	0	0		0	610	610	687	
1,1,2-Trichloroethane	0	0		0	680	680	766	
Trichloroethylene	0	0		0	450	450	507	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	124	
2,4-Dichlorophenol	0	0		0	340	340	383	
2,4-Dimethylphenol	0	0		0	130	130	146	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	18.0	
2,4-Dinitrophenol	0	0		0	130	130	146	

2-Nitrophenol	0	0		0	1,600	1,600	1,803	
4-Nitrophenol	0	0		0	470	470	530	
p-Chloro-m-Cresol	0	0		0	500	500	563	
Pentachlorophenol	0	0		0	6.693	6.69	7.54	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	103	
Acenaphthene	0	0		0	17	17.0	19.2	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	66.5	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.11	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,760	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,025	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	60.8	
Butyl Benzyl Phthalate	0	0		0	35	35.0	39.4	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	180	
1,3-Dichlorobenzene	0	0		0	69	69.0	77.7	
1,4-Dichlorobenzene	0	0		0	150	150	169	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	901	
Dimethyl Phthalate	0	0		0	500	500	563	
Di-n-Butyl Phthalate	0	0		0	21	21.0	23.7	
2,4-Dinitrotoluene	0	0		0	320	320	361	
2,6-Dinitrotoluene	0	0		0	200	200	225	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.38	
Fluoranthene	0	0		0	40	40.0	45.1	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2.25	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.13	
Hexachloroethane	0	0		0	12	12.0	13.5	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,366	
Naphthalene	0	0		0	43	43.0	48.4	
Nitrobenzene	0	0		0	810	810	913	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,831	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	66.5	
Phenanthrene	0	0		0	1	1.0	1.13	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	29.3	

☑ ***THH*** CCT (min): 0.001 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.31	
Total Arsenic	0	0		0	10	10.0	11.3	
Total Barium	0	0		0	2,400	2,400	2,704	
Total Boron	0	0		0	3,100	3,100	3,493	
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	
Dissolved Iron	0	0		0	300	300	338	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,127	
Total Mercury	0	0		0	0.050	0.05	0.056	
Total Nickel	0	0		0	610	610	687	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.27	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.38	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	113	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	6.42	
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	37.2	

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	76.6	
Methyl Bromide	0	0		0	100	100.0	113	
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	64.2	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	113	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	11,267	
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	33.8	
2,4-Dichlorophenol	0	0		0	10	10.0	11.3	
2,4-Dimethylphenol	0	0		0	100	100.0	113	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.25	
2,4-Dinitrophenol	0	0		0	10	10.0	11.3	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,507	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	78.9	
Anthracene	0	0		0	300	300	338	
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	225	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.11	
2-Chloronaphthalene	0	0		0	800	800	901	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,127	
1,3-Dichlorobenzene	0	0		0	7	7.0	7.89	
1,4-Dichlorobenzene	0	0		0	300	300	338	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	676	

Dimethyl Phthalate	0	0		0	2,000	2,000	2,253	
Di-n-Butyl Phthalate	0	0		0	20	20.0	22.5	
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	22.5	
Fluorene	0	0		0	50	50.0	56.3	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.51	
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	38.3	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	11.3	
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	22.5	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.079	

☑ *CRL* CCT (min): 0.018 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	0.24	
Acrylonitrile	0	0		0	0.06	0.06	0.21	
Benzene	0	0		0	0.58	0.58	2.01	
Bromoform	0	0		0	7	7.0	24.2	
Carbon Tetrachloride	0	0		0	0.4	0.4	1.38	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	2.77	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	3.29	
1,2-Dichloroethane	0	0		0	9.9	9.9	34.2	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	3.11	
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.93	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	69.2	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.69	
Tetrachloroethylene	0	0		0	10	10.0	34.6	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	1.9	
Trichloroethylene	0	0		0	0.6	0.6	2.08	
Vinyl Chloride	0	0		0	0.02	0.02	0.069	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	5.19	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0003	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.003	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0003	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.003	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.035	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.1	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1.11	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.42	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0003	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.17	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.17	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.17	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.1	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0003	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.035	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.35	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.003	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.002	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.017	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	11.4	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	6.31	THH	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	0.000003	0.000004	0.14	0.22	0.35	µg/L	0.14	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Chromium (III)	0.0008	0.001	40.4	63.1	101	µg/L	40.4	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	0.0002	0.0004	11.7	18.3	29.3	µg/L	11.7	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	0.00009	0.0001	4.21	5.76	5.76	µg/L	4.21	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	0.007	0.011	338	527	845	µg/L	338	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	0.035	0.055	1,690	2,637	4,225	µg/L	1,690	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.00002	0.00003	0.92	1.43	2.3	µg/L	0.92	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,127	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	5.62	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Silver	Report	Report	Report	Report	Report	µg/L	0.6	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Thallium	0.000006	0.000009	0.27	0.42	0.68	µg/L	0.27	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	48.4	AFC	Discharge Conc > 10% WQBEL (no RP)
Acrylamide	0.000005	0.000008	0.24	0.38	0.61	µg/L	0.24	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	7.21E-08	1.13E-07	0.003	0.005	0.009	µg/L	0.003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	7.21E-09	1.13E-08	0.0003	0.0005	0.0009	µg/L	0.0003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	7.21E-08	1.13E-07	0.003	0.005	0.009	µg/L	0.003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	7.21E-07	0.000001	0.035	0.054	0.086	µg/L	0.035	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Ethylhexyl)Phthalate	0.00002	0.00004	1.11	1.73	2.77	µg/L	1.11	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	0.000009	0.00001	0.42	0.65	1.04	µg/L	0.42	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Dibenzo(a,h)Anthrancene	7.21E-09	1.13E-08	0.0003	0.0005	0.0009	µg/L	0.0003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobenzene	5.77E-09	9.00E-09	0.0003	0.0004	0.0007	µg/L	0.0003	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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Arsenic	11.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	2,704	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,803	µg/L	Discharge Conc < TQL
Total Cobalt	21.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS

Total Mercury	0.056	µg/L	Discharge Conc < TQL
Total Nickel	23.8	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.21	µg/L	Discharge Conc < TQL
Benzene	2.01	µg/L	Discharge Conc < TQL
Bromoform	24.2	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1.38	µg/L	Discharge Conc < TQL
Chlorobenzene	113	µg/L	Discharge Conc < TQL
Chlorodibromomethane	2.77	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,943	µg/L	Discharge Conc < TQL
Chloroform	6.42	µg/L	Discharge Conc < TQL
Dichlorobromomethane	3.29	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	34.2	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	37.2	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	3.11	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.93	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	76.6	µg/L	Discharge Conc < TQL
Methyl Bromide	113	µg/L	Discharge Conc < TQL
Methyl Chloride	6,197	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	69.2	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.69	µg/L	Discharge Conc < TQL
Tetrachloroethylene	34.6	µg/L	Discharge Conc < TQL
Toluene	64.2	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	113	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	687	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	1.9	µg/L	Discharge Conc < TQL
Trichloroethylene	2.08	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.069	µg/L	Discharge Conc < TQL
2-Chlorophenol	33.8	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	11.3	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	113	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.25	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	11.3	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,803	µg/L	Discharge Conc < TQL
4-Nitrophenol	530	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.1	µg/L	Discharge Conc < TQL
Phenol	4,507	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	5.19	µg/L	Discharge Conc < TQL
Acenaphthene	19.2	µg/L	Discharge Conc < TQL

Acenaphthylene	N/A	N/A	No WQS
Anthracene	338	µg/L	Discharge Conc ≤ 25% WQBEL
Benzidine	0.0003	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.1	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	225	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	60.8	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.11	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	901	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
1,2-Dichlorobenzene	180	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7.89	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	169	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.17	µg/L	Discharge Conc < TQL
Diethyl Phthalate	676	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	563	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	22.5	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.17	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.17	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.1	µg/L	Discharge Conc < TQL
Fluoranthene	22.5	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	56.3	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.035	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.13	µg/L	Discharge Conc < TQL
Hexachloroethane	0.35	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.003	µg/L	Discharge Conc < TQL
Isophorone	38.3	µg/L	Discharge Conc < TQL
Naphthalene	48.4	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	11.3	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.002	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.017	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	11.4	µg/L	Discharge Conc < TQL
Phenanthrene	1.13	µg/L	Discharge Conc < TQL
Pyrene	22.5	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	0.079	µg/L	Discharge Conc < TQL

Attachment M:

IMP 123 Toxics Management Spreadsheet Evaluation

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 123

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: LiOH Test Loop Wastewater

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.002	26	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Strea m CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteri a Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		180									
	Chloride (PWS)	mg/L		9.66									
	Bromide	mg/L		0.0578									
	Sulfate (PWS)	mg/L		4.66									
	Fluoride (PWS)	mg/L		0.105									
Group 2	Total Aluminum	µg/L		290									
	Total Antimony	µg/L		0.8									
	Total Arsenic	µg/L		0.8									
	Total Barium	µg/L		3									
	Total Beryllium	µg/L		0.47									
	Total Boron	µg/L	<	63									
	Total Cadmium	µg/L		0.53									
	Total Chromium (III)	µg/L		51									
	Hexavalent Chromium	µg/L		48									
	Total Cobalt	µg/L		0.5									
	Total Copper	µg/L		13									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		610									
	Total Iron	µg/L		4100									
	Total Lead	µg/L		0.7									
	Total Manganese	µg/L		360									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		1.6									
	Total Phenols (Phenolics) (PWS)	µg/L		44									
	Total Selenium	µg/L		0.9									
	Total Silver	µg/L		0.28									
	Total Thallium	µg/L		1.2									
	Total Zinc	µg/L		18									
	Total Molybdenum	µg/L		2.1									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<	11									
	Acrylonitrile	µg/L	<	1.1									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.2									

Group 3	Carbon Tetrachloride	µg/L	<	0.4										
	Chlorobenzene	µg/L	<	0.2										
	Chlorodibromomethane	µg/L	<	0.2										
	Chloroethane	µg/L	<	0.4										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5										
	Chloroform	µg/L	<	0.2										
	Dichlorobromomethane	µg/L	<	0.2										
	1,1-Dichloroethane	µg/L	<	0.2										
	1,2-Dichloroethane	µg/L	<	0.3										
	1,1-Dichloroethylene	µg/L	<	0.3										
	1,2-Dichloropropane	µg/L	<	0.2										
	1,3-Dichloropropylene	µg/L	<	0.2										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.2										
	Methyl Bromide	µg/L	<	0.4										
	Methyl Chloride	µg/L	<	0.6										
	Methylene Chloride	µg/L	<	0.3										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2										
	Tetrachloroethylene	µg/L	<	0.3										
	Toluene	µg/L	<	0.2										
	1,2-trans-Dichloroethylene	µg/L	<	0.2										
	1,1,1-Trichloroethane	µg/L	<	0.2										
	1,1,2-Trichloroethane	µg/L	<	0.2										
	Trichloroethylene	µg/L	<	0.2										
	Vinyl Chloride	µg/L	<	0.3										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.049										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.19										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.27										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.49										
	2,4,6-Trichlorophenol	µg/L	<	0.22										
Group 5	Acenaphthene	µg/L	<	0.063										
	Acenaphthylene	µg/L	<	0.063										
	Anthracene	µg/L		0.21										
	Benzidine	µg/L	<	8.8										
	Benzo(a)Anthracene	µg/L		1										
	Benzo(a)Pyrene	µg/L		0.6										
	3,4-Benzofluoranthene	µg/L		1.3										
	Benzo(ghi)Perylene	µg/L		0.76										
	Benzo(k)Fluoranthene	µg/L		1.1										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.15										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.056										
	Bis(2-Ethylhexyl)Phthalate	µg/L		26										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.31										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.057										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L		0.94										
	Dibenzo(a,h)Anthrancene	µg/L		1										
	1,2-Dichlorobenzene	µg/L	<	0.091										
	1,3-Dichlorobenzene	µg/L	<	0.095										
	1,4-Dichlorobenzene	µg/L	<	0.059										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.55										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L		0.76										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.17										
	Di-n-Octyl Phthalate	µg/L		1.6										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L		0.76										
	Fluorene	µg/L	<	0.066										
	Hexachlorobenzene	µg/L		0.25										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.48										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.1										
	Isophorone	µg/L	<	0.18										
	Naphthalene	µg/L		0.06										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.053										
	Pyrene	µg/L		0.69										
	1,2,4-Trichlorobenzene	µg/L	<	0.13										
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 123

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Unt to Allegheny 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	042368	0.8	900	0.11			Yes
End of Reach 1	042368	0.1	750	0.42			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	0.8	0.1	0.00049									100	7		
End of Reach 1	0.1	0.1	0.00246												

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	0.8														
End of Reach 1	0.1														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 123

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.001 PMF: 1 Analysis Hardness (mg/l): 36.117 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	869	
Total Antimony	0	0		0	1,100	1,100	1,274	
Total Arsenic	0	0		0	340	340	394	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	24,326	
Total Boron	0	0		0	8,100	8,100	9,383	
Total Cadmium	0	0		0	0.747	0.76	0.88	Chem Translator of 0.987 applied
Total Chromium (III)	0	0		0	247.436	783	907	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	18.9	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	110	
Total Copper	0	0		0	5.148	5.36	6.21	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	20.977	22.3	25.9	Chem Translator of 0.939 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.91	Chem Translator of 0.85 applied
Total Nickel	0	0		0	197.829	198	230	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	0.558	0.66	0.76	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	75.3	
Total Zinc	0	0		0	49.443	50.6	58.6	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.48	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	753	
Benzene	0	0		0	640	640	741	
Bromoform	0	0		0	1,800	1,800	2,085	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,243	
Chlorobenzene	0	0		0	1,200	1,200	1,390	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	20,851	
Chloroform	0	0		0	1,900	1,900	2,201	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	17,376	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,688	
1,2-Dichloropropane	0	0		0	11,000	11,000	12,742	
1,3-Dichloropropylene	0	0		0	310	310	359	
Ethylbenzene	0	0		0	2,900	2,900	3,359	
Methyl Bromide	0	0		0	550	550	637	
Methyl Chloride	0	0		0	28,000	28,000	32,434	
Methylene Chloride	0	0		0	12,000	12,000	13,900	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,158	
Tetrachloroethylene	0	0		0	700	700	811	
Toluene	0	0		0	1,700	1,700	1,969	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,877	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,475	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,938	
Trichloroethylene	0	0		0	2,300	2,300	2,664	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	649	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,969	
2,4-Dimethylphenol	0	0		0	660	660	765	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	92.7	
2,4-Dinitrophenol	0	0		0	660	660	765	
2-Nitrophenol	0	0		0	8,000	8,000	9,267	
4-Nitrophenol	0	0		0	2,300	2,300	2,664	
p-Chloro-m-Cresol	0	0		0	160	160	185	
Pentachlorophenol	0	0		0	8.723	8.72	10.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	533	
Acenaphthene	0	0		0	83	83.0	96.1	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	348	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.58	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	34,751	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,213	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	313	

Butyl Benzyl Phthalate	0	0		0	140	140	162	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	950	
1,3-Dichlorobenzene	0	0		0	350	350	405	
1,4-Dichlorobenzene	0	0		0	730	730	846	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,633	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,896	
Di-n-Butyl Phthalate	0	0		0	110	110	127	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,853	
2,6-Dinitrotoluene	0	0		0	990	990	1,147	
1,2-Diphenylhydrazine	0	0		0	15	15.0	17.4	
Fluoranthene	0	0		0	200	200	232	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	11.6	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.79	
Hexachloroethane	0	0		0	60	60.0	69.5	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	11,584	
Naphthalene	0	0		0	140	140	162	
Nitrobenzene	0	0		0	4,000	4,000	4,633	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	19,692	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	348	
Phenanthrene	0	0		0	5	5.0	5.79	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	151	

☑ *CFC* CCT (min): 0.001 PMF: 1 Analysis Hardness (mg/l): 36.117 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	
Fluoride (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	255	
Total Arsenic	0	0		0	150	150	174	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,749	
Total Boron	0	0		0	1,600	1,600	1,853	
Total Cadmium	0	0		0	0.121	0.13	0.15	Chem Translator of 0.952 applied
Total Chromium (III)	0	0		0	32.186	37.4	43.4	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	12.0	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	22.0	
Total Copper	0	0		0	3.751	3.91	4.53	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,738	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	0.817	0.87	1.01	Chem Translator of 0.939 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.05	Chem Translator of 0.85 applied
Total Nickel	0	0		0	21.973	22.0	25.5	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.78	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	15.1	
Total Zinc	0	0		0	49.848	50.6	58.6	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.48	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	151	
Benzene	0	0		0	130	130	151	
Bromoform	0	0		0	370	370	429	
Carbon Tetrachloride	0	0		0	560	560	649	
Chlorobenzene	0	0		0	240	240	278	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	4,054	
Chloroform	0	0		0	390	390	452	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,591	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,738	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,548	
1,3-Dichloropropylene	0	0		0	61	61.0	70.7	
Ethylbenzene	0	0		0	580	580	672	
Methyl Bromide	0	0		0	110	110	127	
Methyl Chloride	0	0		0	5,500	5,500	6,371	
Methylene Chloride	0	0		0	2,400	2,400	2,780	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	243	
Tetrachloroethylene	0	0		0	140	140	162	
Toluene	0	0		0	330	330	382	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,622	
1,1,1-Trichloroethane	0	0		0	610	610	707	
1,1,2-Trichloroethane	0	0		0	680	680	788	
Trichloroethylene	0	0		0	450	450	521	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	127	
2,4-Dichlorophenol	0	0		0	340	340	394	
2,4-Dimethylphenol	0	0		0	130	130	151	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	18.5	
2,4-Dinitrophenol	0	0		0	130	130	151	

2-Nitrophenol	0	0		0	1,600	1,600	1,853	
4-Nitrophenol	0	0		0	470	470	544	
p-Chloro-m-Cresol	0	0		0	500	500	579	
Pentachlorophenol	0	0		0	6.693	6.69	7.75	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	105	
Acenaphthene	0	0		0	17	17.0	19.7	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	68.3	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.12	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,950	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,054	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	62.6	
Butyl Benzyl Phthalate	0	0		0	35	35.0	40.5	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	185	
1,3-Dichlorobenzene	0	0		0	69	69.0	79.9	
1,4-Dichlorobenzene	0	0		0	150	150	174	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	927	
Dimethyl Phthalate	0	0		0	500	500	579	
Di-n-Butyl Phthalate	0	0		0	21	21.0	24.3	
2,4-Dinitrotoluene	0	0		0	320	320	371	
2,6-Dinitrotoluene	0	0		0	200	200	232	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.48	
Fluoranthene	0	0		0	40	40.0	46.3	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2.32	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.16	
Hexachloroethane	0	0		0	12	12.0	13.9	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,433	
Naphthalene	0	0		0	43	43.0	49.8	
Nitrobenzene	0	0		0	810	810	938	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,938	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	68.3	
Phenanthrene	0	0		0	1	1.0	1.16	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	30.1	

☑ ***THH*** CCT (min): 0.001 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.49	
Total Arsenic	0	0		0	10	10.0	11.6	
Total Barium	0	0		0	2,400	2,400	2,780	
Total Boron	0	0		0	3,100	3,100	3,591	
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	
Dissolved Iron	0	0		0	300	300	348	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,158	
Total Mercury	0	0		0	0.050	0.05	0.058	
Total Nickel	0	0		0	610	610	707	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.28	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.48	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	116	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	6.6	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	38.2	

1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	78.8	
Methyl Bromide	0	0		0	100	100.0	116	
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	66.0	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	116	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	11,584	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	34.8	
2,4-Dichlorophenol	0	0		0	10	10.0	11.6	
2,4-Dimethylphenol	0	0		0	100	100.0	116	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.32	
2,4-Dinitrophenol	0	0		0	10	10.0	11.6	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,633	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	81.1	
Anthracene	0	0		0	300	300	348	
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	232	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.12	
2-Chloronaphthalene	0	0		0	800	800	927	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,158	
1,3-Dichlorobenzene	0	0		0	7	7.0	8.11	
1,4-Dichlorobenzene	0	0		0	300	300	348	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	695	

Dimethyl Phthalate	0	0		0	2,000	2,000	2,317	
Di-n-Butyl Phthalate	0	0		0	20	20.0	23.2	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	23.2	
Fluorene	0	0		0	50	50.0	57.9	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.63	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	39.4	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	11.6	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	23.2	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.081	

☑ *CRL* CCT (min): 0.017 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	0.29	
Acrylonitrile	0	0		0	0.06	0.06	0.24	
Benzene	0	0		0	0.58	0.58	2.36	
Bromoform	0	0		0	7	7.0	28.5	
Carbon Tetrachloride	0	0		0	0.4	0.4	1.63	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	3.26	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	3.87	
1,2-Dichloroethane	0	0		0	9.9	9.9	40.3	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	3.67	
1,3-Dichloropropylene	0	0		0	0.27	0.27	1.1	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	81.5	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.81	
Tetrachloroethylene	0	0		0	10	10.0	40.7	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	2.24	
Trichloroethylene	0	0		0	0.6	0.6	2.44	
Vinyl Chloride	0	0		0	0.02	0.02	0.081	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.12	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	6.11	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0004	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.004	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0004	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.004	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.041	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.12	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1.3	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.49	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0004	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.2	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.2	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.2	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.12	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0003	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.041	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.41	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.004	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.003	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.02	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	13.4	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	6.49	THH	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	0.000002	0.000004	0.15	0.23	0.37	µg/L	0.15	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Chromium (III)	0.0007	0.001	43.4	67.6	108	µg/L	43.4	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	0.0002	0.0003	12.0	18.8	30.1	µg/L	12.0	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	0.00008	0.0001	4.53	6.21	6.21	µg/L	4.53	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	0.006	0.009	348	542	869	µg/L	348	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	0.029	0.045	1,738	2,711	4,344	µg/L	1,738	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.00002	0.00003	1.01	1.57	2.52	µg/L	1.01	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,158	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	5.78	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Silver	Report	Report	Report	Report	Report	µg/L	0.66	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Thallium	0.000005	0.000007	0.28	0.43	0.7	µg/L	0.28	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	50.6	AFC	Discharge Conc > 10% WQBEL (no RP)
Acrylamide	0.000005	0.000007	0.29	0.44	0.71	µg/L	0.29	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	6.80E-08	1.06E-07	0.004	0.006	0.01	µg/L	0.004	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	6.80E-09	1.06E-08	0.0004	0.0006	0.001	µg/L	0.0004	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	6.80E-08	1.06E-07	0.004	0.006	0.01	µg/L	0.004	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	6.80E-07	0.000001	0.041	0.064	0.1	µg/L	0.041	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Ethylhexyl)Phthalate	0.00002	0.00003	1.3	2.03	3.26	µg/L	1.3	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	0.000008	0.00001	0.49	0.76	1.22	µg/L	0.49	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Dibenzo(a,h)Anthrancene	6.80E-09	1.06E-08	0.0004	0.0006	0.001	µg/L	0.0004	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobenzene	5.44E-09	8.48E-09	0.0003	0.0005	0.0008	µg/L	0.0003	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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Arsenic	11.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	2,780	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,853	µg/L	Discharge Conc < TQL
Total Cobalt	22.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS

Total Mercury	0.058	µg/L	Discharge Conc < TQL
Total Nickel	25.5	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.24	µg/L	Discharge Conc < TQL
Benzene	2.36	µg/L	Discharge Conc < TQL
Bromoform	28.5	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1.63	µg/L	Discharge Conc < TQL
Chlorobenzene	116	µg/L	Discharge Conc < TQL
Chlorodibromomethane	3.26	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	4,054	µg/L	Discharge Conc < TQL
Chloroform	6.6	µg/L	Discharge Conc < TQL
Dichlorobromomethane	3.87	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	40.3	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	38.2	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	3.67	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	1.1	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	78.8	µg/L	Discharge Conc < TQL
Methyl Bromide	116	µg/L	Discharge Conc < TQL
Methyl Chloride	6,371	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	81.5	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.81	µg/L	Discharge Conc < TQL
Tetrachloroethylene	40.7	µg/L	Discharge Conc < TQL
Toluene	66.0	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	116	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	707	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	2.24	µg/L	Discharge Conc < TQL
Trichloroethylene	2.44	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.081	µg/L	Discharge Conc < TQL
2-Chlorophenol	34.8	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	11.6	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	116	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.32	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	11.6	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,853	µg/L	Discharge Conc < TQL
4-Nitrophenol	544	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.12	µg/L	Discharge Conc < TQL
Phenol	4,633	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	6.11	µg/L	Discharge Conc < TQL
Acenaphthene	19.7	µg/L	Discharge Conc < TQL

Acenaphthylene	N/A	N/A	No WQS
Anthracene	348	µg/L	Discharge Conc ≤ 25% WQBEL
Benzidine	0.0004	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.12	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	232	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	62.6	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.12	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	927	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
1,2-Dichlorobenzene	185	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	8.11	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	174	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.2	µg/L	Discharge Conc < TQL
Diethyl Phthalate	695	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	579	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	23.2	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.2	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.2	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.12	µg/L	Discharge Conc < TQL
Fluoranthene	23.2	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	57.9	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.041	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.16	µg/L	Discharge Conc < TQL
Hexachloroethane	0.41	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.004	µg/L	Discharge Conc < TQL
Isophorone	39.4	µg/L	Discharge Conc < TQL
Naphthalene	49.8	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	11.6	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.003	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.02	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	13.4	µg/L	Discharge Conc < TQL
Phenanthrene	1.16	µg/L	Discharge Conc < TQL
Pyrene	23.2	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	0.081	µg/L	Discharge Conc < TQL

Attachment N:

IMP 303 Toxics Management Spreadsheet Evaluation

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 303

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: LiOH Test Loop Wastewater

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.004	26	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
					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		180									
	Chloride (PWS)	mg/L		9.66									
	Bromide	mg/L		0.0578									
	Sulfate (PWS)	mg/L		4.66									
	Fluoride (PWS)	mg/L		0.105									
Group 2	Total Aluminum	µg/L		290									
	Total Antimony	µg/L		0.8									
	Total Arsenic	µg/L		0.8									
	Total Barium	µg/L		3									
	Total Beryllium	µg/L		0.47									
	Total Boron	µg/L	<	63									
	Total Cadmium	µg/L		0.53									
	Total Chromium (III)	µg/L		51									
	Hexavalent Chromium	µg/L		48									
	Total Cobalt	µg/L		0.5									
	Total Copper	µg/L		13									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		610									
	Total Iron	µg/L		4100									
	Total Lead	µg/L		0.7									
	Total Manganese	µg/L		360									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		1.6									
	Total Phenols (Phenolics) (PWS)	µg/L		44									
	Total Selenium	µg/L		0.9									
	Total Silver	µg/L		0.28									
	Total Thallium	µg/L		1.2									
	Total Zinc	µg/L		18									
	Total Molybdenum	µg/L		2.1									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<	11									
	Acrylonitrile	µg/L	<	1.1									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.2									

Group 3	Carbon Tetrachloride	µg/L	<	0.4										
	Chlorobenzene	µg/L	<	0.2										
	Chlorodibromomethane	µg/L	<	0.2										
	Chloroethane	µg/L	<	0.4										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5										
	Chloroform	µg/L	<	0.2										
	Dichlorobromomethane	µg/L	<	0.2										
	1,1-Dichloroethane	µg/L	<	0.2										
	1,2-Dichloroethane	µg/L	<	0.3										
	1,1-Dichloroethylene	µg/L	<	0.3										
	1,2-Dichloropropane	µg/L	<	0.2										
	1,3-Dichloropropylene	µg/L	<	0.2										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.2										
	Methyl Bromide	µg/L	<	0.4										
	Methyl Chloride	µg/L	<	0.6										
	Methylene Chloride	µg/L	<	0.3										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2										
	Tetrachloroethylene	µg/L	<	0.3										
	Toluene	µg/L	<	0.2										
	1,2-trans-Dichloroethylene	µg/L	<	0.2										
	1,1,1-Trichloroethane	µg/L	<	0.2										
	1,1,2-Trichloroethane	µg/L	<	0.2										
	Trichloroethylene	µg/L	<	0.2										
	Vinyl Chloride	µg/L	<	0.3										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.049										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.19										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.27										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.49										
	2,4,6-Trichlorophenol	µg/L	<	0.22										
Group 5	Acenaphthene	µg/L	<	0.063										
	Acenaphthylene	µg/L	<	0.063										
	Anthracene	µg/L		0.21										
	Benzidine	µg/L	<	8.8										
	Benzo(a)Anthracene	µg/L		1										
	Benzo(a)Pyrene	µg/L		0.6										
	3,4-Benzofluoranthene	µg/L		1.3										
	Benzo(ghi)Perylene	µg/L		0.76										
	Benzo(k)Fluoranthene	µg/L		1.1										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.15										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.056										
	Bis(2-Ethylhexyl)Phthalate	µg/L		26										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.31										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.057										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L		0.94										
	Dibenzo(a,h)Anthrancene	µg/L		1										
	1,2-Dichlorobenzene	µg/L	<	0.091										
	1,3-Dichlorobenzene	µg/L	<	0.095										
	1,4-Dichlorobenzene	µg/L	<	0.059										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.55										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L		0.76										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.17										
	Di-n-Octyl Phthalate	µg/L		1.6										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L		0.76										
	Fluorene	µg/L	<	0.066										
	Hexachlorobenzene	µg/L		0.25										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.48										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.1										
	Isophorone	µg/L	<	0.18										
	Naphthalene	µg/L		0.06										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.053										
	Pyrene	µg/L		0.69										
	1,2,4-Trichlorobenzene	µg/L	<	0.13										
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 303

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Unt to Allegheny 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	042368	0.8	900	0.11			Yes
End of Reach 1	042368	0.1	750	0.42			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	0.8	0.1	0.00049									100	7		
End of Reach 1	0.1	0.1	0.00246												

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	0.8														
End of Reach 1	0.1														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 303

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 31.43 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	809	
Total Antimony	0	0		0	1,100	1,100	1,187	
Total Arsenic	0	0		0	340	340	367	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	22,663	
Total Boron	0	0		0	8,100	8,100	8,741	
Total Cadmium	0	0		0	0.653	0.66	0.71	Chem Translator of 0.992 applied
Total Chromium (III)	0	0		0	220.809	699	754	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	17.6	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	103	
Total Copper	0	0		0	4.516	4.7	5.08	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	17.954	18.7	20.2	Chem Translator of 0.96 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.78	Chem Translator of 0.85 applied
Total Nickel	0	0		0	175.880	176	190	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	0.439	0.52	0.56	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	70.1	
Total Zinc	0	0		0	43.949	44.9	48.5	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.24	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	701	
Benzene	0	0		0	640	640	691	
Bromoform	0	0		0	1,800	1,800	1,943	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,022	
Chlorobenzene	0	0		0	1,200	1,200	1,295	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	19,425	
Chloroform	0	0		0	1,900	1,900	2,050	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	16,188	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,094	
1,2-Dichloropropane	0	0		0	11,000	11,000	11,871	
1,3-Dichloropropylene	0	0		0	310	310	335	
Ethylbenzene	0	0		0	2,900	2,900	3,130	
Methyl Bromide	0	0		0	550	550	594	
Methyl Chloride	0	0		0	28,000	28,000	30,217	
Methylene Chloride	0	0		0	12,000	12,000	12,950	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,079	
Tetrachloroethylene	0	0		0	700	700	755	
Toluene	0	0		0	1,700	1,700	1,835	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,338	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,238	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,669	
Trichloroethylene	0	0		0	2,300	2,300	2,482	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	604	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,835	
2,4-Dimethylphenol	0	0		0	660	660	712	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	86.3	
2,4-Dinitrophenol	0	0		0	660	660	712	
2-Nitrophenol	0	0		0	8,000	8,000	8,633	
4-Nitrophenol	0	0		0	2,300	2,300	2,482	
p-Chloro-m-Cresol	0	0		0	160	160	173	
Pentachlorophenol	0	0		0	8.723	8.72	9.41	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	496	
Acenaphthene	0	0		0	83	83.0	89.6	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	324	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.54	
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	32,376	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	4,856	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	291	

Butyl Benzyl Phthalate	0	0		0	140	140	151	
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	885	
1,3-Dichlorobenzene	0	0		0	350	350	378	
1,4-Dichlorobenzene	0	0		0	730	730	788	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,317	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,698	
Di-n-Butyl Phthalate	0	0		0	110	110	119	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,727	
2,6-Dinitrotoluene	0	0		0	990	990	1,068	
1,2-Diphenylhydrazine	0	0		0	15	15.0	16.2	
Fluoranthene	0	0		0	200	200	216	
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	10.8	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.4	
Hexachloroethane	0	0		0	60	60.0	64.8	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	10,792	
Naphthalene	0	0		0	140	140	151	
Nitrobenzene	0	0		0	4,000	4,000	4,317	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	18,346	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	324	
Phenanthrene	0	0		0	5	5.0	5.4	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	140	

☑ *CFC* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 31.43 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	
Fluoride (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	237	
Total Arsenic	0	0		0	150	150	162	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,425	
Total Boron	0	0		0	1,600	1,600	1,727	
Total Cadmium	0	0		0	0.110	0.11	0.12	Chem Translator of 0.957 applied
Total Chromium (III)	0	0		0	28.723	33.4	36.0	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.2	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	20.5	
Total Copper	0	0		0	3.331	3.47	3.74	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,619	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	0.700	0.73	0.79	Chem Translator of 0.96 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.98	Chem Translator of 0.85 applied
Total Nickel	0	0		0	19.535	19.6	21.1	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.38	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	14.0	
Total Zinc	0	0		0	44.309	44.9	48.5	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.24	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	140	
Benzene	0	0		0	130	130	140	
Bromoform	0	0		0	370	370	399	
Carbon Tetrachloride	0	0		0	560	560	604	
Chlorobenzene	0	0		0	240	240	259	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,777	
Chloroform	0	0		0	390	390	421	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,345	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,619	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,374	
1,3-Dichloropropylene	0	0		0	61	61.0	65.8	
Ethylbenzene	0	0		0	580	580	626	
Methyl Bromide	0	0		0	110	110	119	
Methyl Chloride	0	0		0	5,500	5,500	5,936	
Methylene Chloride	0	0		0	2,400	2,400	2,590	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	227	
Tetrachloroethylene	0	0		0	140	140	151	
Toluene	0	0		0	330	330	356	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,511	
1,1,1-Trichloroethane	0	0		0	610	610	658	
1,1,2-Trichloroethane	0	0		0	680	680	734	
Trichloroethylene	0	0		0	450	450	486	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	119	
2,4-Dichlorophenol	0	0		0	340	340	367	
2,4-Dimethylphenol	0	0		0	130	130	140	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	17.3	
2,4-Dinitrophenol	0	0		0	130	130	140	

2-Nitrophenol	0	0		0	1,600	1,600	1,727	
4-Nitrophenol	0	0		0	470	470	507	
p-Chloro-m-Cresol	0	0		0	500	500	540	
Pentachlorophenol	0	0		0	6.693	6.69	7.22	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	98.2	
Acenaphthene	0	0		0	17	17.0	18.3	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	63.7	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.11	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,475	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	982	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	58.3	
Butyl Benzyl Phthalate	0	0		0	35	35.0	37.8	
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	173	
1,3-Dichlorobenzene	0	0		0	69	69.0	74.5	
1,4-Dichlorobenzene	0	0		0	150	150	162	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	863	
Dimethyl Phthalate	0	0		0	500	500	540	
Di-n-Butyl Phthalate	0	0		0	21	21.0	22.7	
2,4-Dinitrotoluene	0	0		0	320	320	345	
2,6-Dinitrotoluene	0	0		0	200	200	216	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.24	
Fluoranthene	0	0		0	40	40.0	43.2	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2.16	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.08	
Hexachloroethane	0	0		0	12	12.0	13.0	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,266	
Naphthalene	0	0		0	43	43.0	46.4	
Nitrobenzene	0	0		0	810	810	874	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,669	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	63.7	
Phenanthrene	0	0		0	1	1.0	1.08	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	28.1	

☑ ***THH*** CCT (min): 0.000 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.04	
Total Arsenic	0	0		0	10	10.0	10.8	
Total Barium	0	0		0	2,400	2,400	2,590	
Total Boron	0	0		0	3,100	3,100	3,345	
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	
Dissolved Iron	0	0		0	300	300	324	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,079	
Total Mercury	0	0		0	0.050	0.05	0.054	
Total Nickel	0	0		0	610	610	658	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.26	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.24	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	108	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	6.15	
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	35.6	

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	73.4	
Methyl Bromide	0	0		0	100	100.0	108	
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	61.5	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	108	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	10,792	
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	32.4	
2,4-Dichlorophenol	0	0		0	10	10.0	10.8	
2,4-Dimethylphenol	0	0		0	100	100.0	108	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.16	
2,4-Dinitrophenol	0	0		0	10	10.0	10.8	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,317	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	75.5	
Anthracene	0	0		0	300	300	324	
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	216	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.11	
2-Chloronaphthalene	0	0		0	800	800	863	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,079	
1,3-Dichlorobenzene	0	0		0	7	7.0	7.55	
1,4-Dichlorobenzene	0	0		0	300	300	324	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	648	

Dimethyl Phthalate	0	0		0	2,000	2,000	2,158	
Di-n-Butyl Phthalate	0	0		0	20	20.0	21.6	
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	21.6	
Fluorene	0	0		0	50	50.0	54.0	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.32	
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	36.7	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	10.8	
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	21.6	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.076	

☑ *CRL* CCT (min): 0.017 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	0.18	
Acrylonitrile	0	0		0	0.06	0.06	0.15	
Benzene	0	0		0	0.58	0.58	1.47	
Bromoform	0	0		0	7	7.0	17.8	
Carbon Tetrachloride	0	0		0	0.4	0.4	1.01	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	2.03	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	2.41	
1,2-Dichloroethane	0	0		0	9.9	9.9	25.1	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	2.28	
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.68	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	50.7	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.51	
Tetrachloroethylene	0	0		0	10	10.0	25.4	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	1.4	
Trichloroethylene	0	0		0	0.6	0.6	1.52	
Vinyl Chloride	0	0		0	0.02	0.02	0.051	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.076	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	3.81	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0003	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.003	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0003	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.003	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.025	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.076	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.81	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.3	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0003	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.13	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.13	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.13	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.076	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0002	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.025	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.25	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.003	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.002	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.013	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	8.37	
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* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	6.04	THH	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	0.000004	0.000006	0.12	0.19	0.31	µg/L	0.12	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Chromium (III)	0.001	0.002	36.0	56.2	90.1	µg/L	36.0	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	0.0004	0.0006	11.2	17.5	28.0	µg/L	11.2	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	0.0001	0.0002	3.74	5.08	5.08	µg/L	3.74	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	0.011	0.017	324	505	809	µg/L	324	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	0.054	0.084	1,619	2,526	4,047	µg/L	1,619	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.00003	0.00004	0.79	1.23	1.97	µg/L	0.79	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,079	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	5.38	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Silver	0.00002	0.00002	0.52	0.56	0.56	µg/L	0.52	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Thallium	0.000009	0.00001	0.26	0.4	0.65	µg/L	0.26	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	44.9	AFC	Discharge Conc > 10% WQBEL (no RP)
Acrylamide	0.000006	0.000009	0.18	0.28	0.44	µg/L	0.18	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	8.46E-08	1.32E-07	0.003	0.004	0.006	µg/L	0.003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	8.46E-09	1.32E-08	0.0003	0.0004	0.0006	µg/L	0.0003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	8.46E-08	1.32E-07	0.003	0.004	0.006	µg/L	0.003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	8.46E-07	0.000001	0.025	0.04	0.063	µg/L	0.025	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Ethylhexyl)Phthalate	0.00003	0.00004	0.81	1.27	2.03	µg/L	0.81	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	0.00001	0.00002	0.3	0.47	0.76	µg/L	0.3	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Dibenzo(a,h)Anthrancene	8.46E-09	1.32E-08	0.0003	0.0004	0.0006	µg/L	0.0003	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobenzene	6.77E-09	1.06E-08	0.0002	0.0003	0.0005	µg/L	0.0002	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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Arsenic	10.8	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	2,590	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,727	µg/L	Discharge Conc < TQL
Total Cobalt	20.5	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS

Total Mercury	0.054	µg/L	Discharge Conc < TQL
Total Nickel	21.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.15	µg/L	Discharge Conc < TQL
Benzene	1.47	µg/L	Discharge Conc < TQL
Bromoform	17.8	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1.01	µg/L	Discharge Conc < TQL
Chlorobenzene	108	µg/L	Discharge Conc < TQL
Chlorodibromomethane	2.03	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,777	µg/L	Discharge Conc < TQL
Chloroform	6.15	µg/L	Discharge Conc < TQL
Dichlorobromomethane	2.41	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	25.1	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	35.6	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	2.28	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.68	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	73.4	µg/L	Discharge Conc < TQL
Methyl Bromide	108	µg/L	Discharge Conc < TQL
Methyl Chloride	5,936	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	50.7	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.51	µg/L	Discharge Conc < TQL
Tetrachloroethylene	25.4	µg/L	Discharge Conc < TQL
Toluene	61.5	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	108	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	658	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	1.4	µg/L	Discharge Conc < TQL
Trichloroethylene	1.52	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.051	µg/L	Discharge Conc < TQL
2-Chlorophenol	32.4	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	10.8	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	108	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.16	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	10.8	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,727	µg/L	Discharge Conc < TQL
4-Nitrophenol	507	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.076	µg/L	Discharge Conc < TQL
Phenol	4,317	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	3.81	µg/L	Discharge Conc < TQL
Acenaphthene	18.3	µg/L	Discharge Conc < TQL

Acenaphthylene	N/A	N/A	No WQS
Anthracene	324	µg/L	Discharge Conc ≤ 25% WQBEL
Benzidine	0.0003	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.076	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	216	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	58.3	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.11	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	863	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
1,2-Dichlorobenzene	173	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7.55	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	162	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.13	µg/L	Discharge Conc < TQL
Diethyl Phthalate	648	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	540	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	21.6	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.13	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.13	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.076	µg/L	Discharge Conc < TQL
Fluoranthene	21.6	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	54.0	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.025	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.08	µg/L	Discharge Conc < TQL
Hexachloroethane	0.25	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.003	µg/L	Discharge Conc < TQL
Isophorone	36.7	µg/L	Discharge Conc < TQL
Naphthalene	46.4	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	10.8	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.002	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.013	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	8.37	µg/L	Discharge Conc < TQL
Phenanthrene	1.08	µg/L	Discharge Conc < TQL
Pyrene	21.6	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	0.076	µg/L	Discharge Conc < TQL

Attachment O:

IMP 403 Toxics Management Spreadsheet Evaluation

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 403

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: DI Test Loop Wastewater

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.0023	1.9	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		10									
	Chloride (PWS)	mg/L		0.712									
	Bromide	mg/L		0.054									
	Sulfate (PWS)	mg/L		0.758									
	Fluoride (PWS)	mg/L		0.026									
Group 2	Total Aluminum	µg/L	<	13									
	Total Antimony	µg/L	<	0.91									
	Total Arsenic	µg/L	<	0.3									
	Total Barium	µg/L	<	1.2									
	Total Beryllium	µg/L	<	0.25									
	Total Boron	µg/L		120									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	0.76									
	Hexavalent Chromium	µg/L	<	0.1									
	Total Cobalt	µg/L	<	0.1									
	Total Copper	µg/L		76									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		92									
	Total Iron	µg/L	<	41									
	Total Lead	µg/L		1.4									
	Total Manganese	µg/L	<	2.2									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		98									
	Total Phenols (Phenolics) (PWS)	µg/L	<	9.3									
	Total Selenium	µg/L	<	0.7									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L	<	0.38									
	Total Zinc	µg/L		30									
	Total Molybdenum	µg/L	<	0.7									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<	10									
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.98									

Group 3	Carbon Tetrachloride	µg/L	<	0.5										
	Chlorobenzene	µg/L	<	0.5										
	Chlorodibromomethane	µg/L	<	0.5										
	Chloroethane	µg/L	<	0.9										
	2-Chloroethyl Vinyl Ether	µg/L	<	1.7										
	Chloroform	µg/L	<	0.6										
	Dichlorobromomethane	µg/L	<	0.64										
	1,1-Dichloroethane	µg/L	<	0.31										
	1,2-Dichloroethane	µg/L	<	0.57										
	1,1-Dichloroethylene	µg/L	<	0.55										
	1,2-Dichloropropane	µg/L	<	0.66										
	1,3-Dichloropropylene	µg/L	<	0.5										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.51										
	Methyl Bromide	µg/L	<	0.89										
	Methyl Chloride	µg/L	<	0.9										
	Methylene Chloride	µg/L	<	0.89										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5										
	Tetrachloroethylene	µg/L	<	0.47										
	Toluene	µg/L	<	0.46										
	1,2-trans-Dichloroethylene	µg/L	<	0.67										
	1,1,1-Trichloroethane	µg/L	<	0.6										
	1,1,2-Trichloroethane	µg/L	<	0.45										
	Trichloroethylene	µg/L	<	0.5										
	Vinyl Chloride	µg/L	<	0.4										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.149										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.18										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.26										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.46										
	2,4,6-Trichlorophenol	µg/L	<	0.21										
Group 5	Acenaphthene	µg/L	<	0.062										
	Acenaphthylene	µg/L	<	0.062										
	Anthracene	µg/L	<	0.047										
	Benzidine	µg/L	<	8.7										
	Benzo(a)Anthracene	µg/L	<	0.071										
	Benzo(a)Pyrene	µg/L	<	0.05										
	3,4-Benzofluoranthene	µg/L	<	0.092										
	Benzo(ghi)Perylene	µg/L	<	0.066										
	Benzo(k)Fluoranthene	µg/L	<	0.084										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.14										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.055										
	Bis(2-Ethylhexyl)Phthalate	µg/L		0.326										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.3										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.056										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L	<	0.077										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.069										
	1,2-Dichlorobenzene	µg/L	<	0.09										
	1,3-Dichlorobenzene	µg/L	<	0.094										
	1,4-Dichlorobenzene	µg/L	<	0.058										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.54										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L	<	0.98										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.16										
	Di-n-Octyl Phthalate	µg/L	<	0.65										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L	<	0.057										
	Fluorene	µg/L	<	0.66										
	Hexachlorobenzene	µg/L	<	0.053										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.47										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.081										
	Isophorone	µg/L	<	0.2										
	Naphthalene	µg/L	<	0.056										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.052										
	Pyrene	µg/L	<	0.051										
	1,2,4-Trichlorobenzene	µg/L	<	0.12										
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 403

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Unt to Allegheny 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	042368	0.8	900	0.11			Yes
End of Reach 1	042368	0.1	750	0.42			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	0.8	0.1	0.00049									100	7		
End of Reach 1	0.1	0.1	0.00246												

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	0.8														
End of Reach 1	0.1														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 403

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.001 PMF: 1 Analysis Hardness (mg/l): 13.774 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	853	
Total Antimony	0	0		0	1,100	1,100	1,251	
Total Arsenic	0	0		0	340	340	387	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	23,892	
Total Boron	0	0		0	8,100	8,100	9,215	
Total Cadmium	0	0		0	0.292	0.28	0.32	Chem Translator of 1.027 applied
Total Chromium (III)	0	0		0	112.356	356	405	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	18.5	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	108	
Total Copper	0	0		0	2.076	2.16	2.46	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	7.069	6.55	7.45	Chem Translator of 1.08 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.87	Chem Translator of 0.85 applied
Total Nickel	0	0		0	87.523	87.7	99.8	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	0.106	0.13	0.14	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	74.0	
Total Zinc	0	0		0	21.847	22.3	25.4	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.41	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	740	
Benzene	0	0		0	640	640	728	
Bromoform	0	0		0	1,800	1,800	2,048	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,186	
Chlorobenzene	0	0		0	1,200	1,200	1,365	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	20,479	
Chloroform	0	0		0	1,900	1,900	2,162	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	17,066	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,533	
1,2-Dichloropropane	0	0		0	11,000	11,000	12,515	
1,3-Dichloropropylene	0	0		0	310	310	353	
Ethylbenzene	0	0		0	2,900	2,900	3,299	
Methyl Bromide	0	0		0	550	550	626	
Methyl Chloride	0	0		0	28,000	28,000	31,856	
Methylene Chloride	0	0		0	12,000	12,000	13,653	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,138	
Tetrachloroethylene	0	0		0	700	700	796	
Toluene	0	0		0	1,700	1,700	1,934	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,736	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,413	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,868	
Trichloroethylene	0	0		0	2,300	2,300	2,617	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	637	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,934	
2,4-Dimethylphenol	0	0		0	660	660	751	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	91.0	
2,4-Dinitrophenol	0	0		0	660	660	751	
2-Nitrophenol	0	0		0	8,000	8,000	9,102	
4-Nitrophenol	0	0		0	2,300	2,300	2,617	
p-Chloro-m-Cresol	0	0		0	160	160	182	
Pentachlorophenol	0	0		0	8.723	8.72	9.92	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	523	
Acenaphthene	0	0		0	83	83.0	94.4	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	341	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.57	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	34,131	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,120	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	307	

Butyl Benzyl Phthalate	0	0		0	140	140	159	
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	933	
1,3-Dichlorobenzene	0	0		0	350	350	398	
1,4-Dichlorobenzene	0	0		0	730	730	831	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,551	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,844	
Di-n-Butyl Phthalate	0	0		0	110	110	125	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,820	
2,6-Dinitrotoluene	0	0		0	990	990	1,126	
1,2-Diphenylhydrazine	0	0		0	15	15.0	17.1	
Fluoranthene	0	0		0	200	200	228	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	11.4	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.69	
Hexachloroethane	0	0		0	60	60.0	68.3	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	11,377	
Naphthalene	0	0		0	140	140	159	
Nitrobenzene	0	0		0	4,000	4,000	4,551	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	19,341	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	341	
Phenanthrene	0	0		0	5	5.0	5.69	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	148	

☑ *CFC* CCT (min): 0.001 PMF: 1 Analysis Hardness (mg/l): 13.774 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	
Fluoride (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	250	
Total Arsenic	0	0		0	150	150	171	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,665	
Total Boron	0	0		0	1,600	1,600	1,820	
Total Cadmium	0	0		0	0.062	0.062	0.071	Chem Translator of 0.992 applied
Total Chromium (III)	0	0		0	14.615	17.0	19.3	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.8	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	21.6	
Total Copper	0	0		0	1.646	1.71	1.95	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,707	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	0.275	0.26	0.29	Chem Translator of 1.08 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.03	Chem Translator of 0.85 applied
Total Nickel	0	0		0	9.721	9.75	11.1	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.68	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	14.8	
Total Zinc	0	0		0	22.026	22.3	25.4	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.41	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	148	
Benzene	0	0		0	130	130	148	
Bromoform	0	0		0	370	370	421	
Carbon Tetrachloride	0	0		0	560	560	637	
Chlorobenzene	0	0		0	240	240	273	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,982	
Chloroform	0	0		0	390	390	444	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,527	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,707	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,503	
1,3-Dichloropropylene	0	0		0	61	61.0	69.4	
Ethylbenzene	0	0		0	580	580	660	
Methyl Bromide	0	0		0	110	110	125	
Methyl Chloride	0	0		0	5,500	5,500	6,257	
Methylene Chloride	0	0		0	2,400	2,400	2,731	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	239	
Tetrachloroethylene	0	0		0	140	140	159	
Toluene	0	0		0	330	330	375	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,593	
1,1,1-Trichloroethane	0	0		0	610	610	694	
1,1,2-Trichloroethane	0	0		0	680	680	774	
Trichloroethylene	0	0		0	450	450	512	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	125	
2,4-Dichlorophenol	0	0		0	340	340	387	
2,4-Dimethylphenol	0	0		0	130	130	148	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	18.2	
2,4-Dinitrophenol	0	0		0	130	130	148	

2-Nitrophenol	0	0		0	1,600	1,600	1,820	
4-Nitrophenol	0	0		0	470	470	535	
p-Chloro-m-Cresol	0	0		0	500	500	569	
Pentachlorophenol	0	0		0	6.693	6.69	7.61	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	104	
Acenaphthene	0	0		0	17	17.0	19.3	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	67.1	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.11	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,826	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,035	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	61.4	
Butyl Benzyl Phthalate	0	0		0	35	35.0	39.8	
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	182	
1,3-Dichlorobenzene	0	0		0	69	69.0	78.5	
1,4-Dichlorobenzene	0	0		0	150	150	171	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	910	
Dimethyl Phthalate	0	0		0	500	500	569	
Di-n-Butyl Phthalate	0	0		0	21	21.0	23.9	
2,4-Dinitrotoluene	0	0		0	320	320	364	
2,6-Dinitrotoluene	0	0		0	200	200	228	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.41	
Fluoranthene	0	0		0	40	40.0	45.5	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2.28	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.14	
Hexachloroethane	0	0		0	12	12.0	13.7	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,389	
Naphthalene	0	0		0	43	43.0	48.9	
Nitrobenzene	0	0		0	810	810	922	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,868	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	67.1	
Phenanthrene	0	0		0	1	1.0	1.14	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	29.6	

☑ ***THH*** CCT (min): 0.001 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.37	
Total Arsenic	0	0		0	10	10.0	11.4	
Total Barium	0	0		0	2,400	2,400	2,731	
Total Boron	0	0		0	3,100	3,100	3,527	
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	
Dissolved Iron	0	0		0	300	300	341	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,138	
Total Mercury	0	0		0	0.050	0.05	0.057	
Total Nickel	0	0		0	610	610	694	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.27	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.41	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	114	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	6.48	
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	37.5	

1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	77.4	
Methyl Bromide	0	0		0	100	100.0	114	
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	64.8	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	114	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	11,377	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	34.1	
2,4-Dichlorophenol	0	0		0	10	10.0	11.4	
2,4-Dimethylphenol	0	0		0	100	100.0	114	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.28	
2,4-Dinitrophenol	0	0		0	10	10.0	11.4	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,551	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	79.6	
Anthracene	0	0		0	300	300	341	
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	228	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.11	
2-Chloronaphthalene	0	0		0	800	800	910	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,138	
1,3-Dichlorobenzene	0	0		0	7	7.0	7.96	
1,4-Dichlorobenzene	0	0		0	300	300	341	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	683	

Dimethyl Phthalate	0	0		0	2,000	2,000	2,275	
Di-n-Butyl Phthalate	0	0		0	20	20.0	22.8	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	22.8	
Fluorene	0	0		0	50	50.0	56.9	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.55	
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	38.7	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	11.4	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	22.8	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.08	

☑ *CRL* CCT (min): 0.018 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	0.26	
Acrylonitrile	0	0		0	0.06	0.06	0.22	
Benzene	0	0		0	0.58	0.58	2.13	
Bromoform	0	0		0	7	7.0	25.7	
Carbon Tetrachloride	0	0		0	0.4	0.4	1.47	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	2.94	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	3.49	
1,2-Dichloroethane	0	0		0	9.9	9.9	36.4	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	3.31	
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.99	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	73.5	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.73	
Tetrachloroethylene	0	0		0	10	10.0	36.7	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	2.02	
Trichloroethylene	0	0		0	0.6	0.6	2.2	
Vinyl Chloride	0	0		0	0.02	0.02	0.073	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.11	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	5.51	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0004	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.004	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0004	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.004	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.037	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.11	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1.18	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.44	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0004	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.18	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.18	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.18	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.11	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0003	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.037	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.37	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.004	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.003	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.018	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	12.1	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.00004	0.00005	1.95	2.46	2.46	µg/L	1.95	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	341	THH	Discharge Conc > 10% WQBEL (no RP)
Total Lead	0.000006	0.000009	0.29	0.45	0.73	µg/L	0.29	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Nickel	0.0002	0.0003	11.1	17.3	27.7	µg/L	11.1	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	0.0004	0.0005	22.3	25.4	25.4	µg/L	22.3	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Acrylamide	0.000005	0.000008	0.26	0.4	0.64	µg/L	0.26	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Ethylhexyl)Phthalate	Report	Report	Report	Report	Report	µg/L	1.18	CRL	Discharge Conc > 25% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	750	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	2,731	µg/L	Discharge Conc < TQL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,820	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	0.071	µg/L	Discharge Conc < TQL
Total Chromium (III)	19.3	µg/L	Discharge Conc < TQL
Hexavalent Chromium	11.8	µg/L	Discharge Conc < TQL
Total Cobalt	21.6	µg/L	Discharge Conc < TQL

Total Cyanide	N/A	N/A	No WQS
Total Iron	1,707	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,138	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.057	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	5.68	µg/L	Discharge Conc < TQL
Total Silver	0.13	µg/L	Discharge Conc < TQL
Total Thallium	0.27	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.22	µg/L	Discharge Conc < TQL
Benzene	2.13	µg/L	Discharge Conc < TQL
Bromoform	25.7	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	1.47	µg/L	Discharge Conc < TQL
Chlorobenzene	114	µg/L	Discharge Conc < TQL
Chlorodibromomethane	2.94	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,982	µg/L	Discharge Conc < TQL
Chloroform	6.48	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	3.49	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	36.4	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	37.5	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	3.31	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	0.99	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	77.4	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	114	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	6,257	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	73.5	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	0.73	µg/L	Discharge Conc < TQL
Tetrachloroethylene	36.7	µg/L	Discharge Conc < TQL
Toluene	64.8	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	114	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	694	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	2.02	µg/L	Discharge Conc < TQL
Trichloroethylene	2.2	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.073	µg/L	Discharge Conc < TQL
2-Chlorophenol	34.1	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	11.4	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	114	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.28	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	11.4	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,820	µg/L	Discharge Conc < TQL
4-Nitrophenol	535	µg/L	Discharge Conc < TQL

p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.11	µg/L	Discharge Conc < TQL
Phenol	4,551	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	5.51	µg/L	Discharge Conc < TQL
Acenaphthene	19.3	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	341	µg/L	Discharge Conc < TQL
Benzidine	0.0004	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.004	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0004	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.004	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.037	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.11	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	228	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	61.4	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.11	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	910	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.44	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0004	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	182	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7.96	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	171	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.18	µg/L	Discharge Conc < TQL
Diethyl Phthalate	683	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	569	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	22.8	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.18	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.18	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.11	µg/L	Discharge Conc < TQL
Fluoranthene	22.8	µg/L	Discharge Conc < TQL
Fluorene	56.9	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0003	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.037	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.14	µg/L	Discharge Conc < TQL
Hexachloroethane	0.37	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.004	µg/L	Discharge Conc < TQL
Isophorone	38.7	µg/L	Discharge Conc < TQL
Naphthalene	48.9	µg/L	Discharge Conc < TQL
Nitrobenzene	11.4	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.003	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.018	µg/L	Discharge Conc < TQL

n-Nitrosodiphenylamine	12.1	µg/L	Discharge Conc < TQL
Phenanthrene	1.14	µg/L	Discharge Conc < TQL
Pyrene	22.8	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.08	µg/L	Discharge Conc < TQL

Attachment P:

IMP 603 Toxics Management Spreadsheet Evaluation

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Curtiss-Wright Electo-Mechanical Corportation** NPDES Permit No.: **PA0001228** Outfall No.: **603**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **DI Test Loop Wastewater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.0002	1.9	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		10									
	Chloride (PWS)	mg/L		0.712									
	Bromide	mg/L		0.054									
	Sulfate (PWS)	mg/L		0.758									
	Fluoride (PWS)	mg/L		0.026									
Group 2	Total Aluminum	µg/L	<	13									
	Total Antimony	µg/L	<	0.91									
	Total Arsenic	µg/L	<	0.3									
	Total Barium	µg/L	<	1.2									
	Total Beryllium	µg/L	<	0.25									
	Total Boron	µg/L		120									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	0.76									
	Hexavalent Chromium	µg/L	<	0.1									
	Total Cobalt	µg/L	<	0.1									
	Total Copper	µg/L		76									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		92									
	Total Iron	µg/L	<	41									
	Total Lead	µg/L		1.4									
	Total Manganese	µg/L	<	2.2									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		98									
	Total Phenols (Phenolics) (PWS)	µg/L	<	9.3									
	Total Selenium	µg/L	<	0.7									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L	<	0.38									
	Total Zinc	µg/L	<	30									
	Total Molybdenum	µg/L	<	0.7									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<	10									
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.98									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.9									
	2-Chloroethyl Vinyl Ether	µg/L	<	1.7									
	Chloroform	µg/L	<	0.6									
	Dichlorobromomethane	µg/L	<	0.64									
	1,1-Dichloroethane	µg/L	<	0.31									
	1,2-Dichloroethane	µg/L	<	0.57									
	1,1-Dichloroethylene	µg/L	<	0.55									
	1,2-Dichloropropane	µg/L	<	0.66									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	43									
	Ethylbenzene	µg/L	<	0.51									
	Methyl Bromide	µg/L	<	0.89									
	Methyl Chloride	µg/L	<	0.9									
	Methylene Chloride	µg/L	<	0.89									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.47									
	Toluene	µg/L	<	0.46									
	1,2-trans-Dichloroethylene	µg/L	<	0.67									
	1,1,1-Trichloroethane	µg/L	<	0.6									
	1,1,2-Trichloroethane	µg/L	<	0.45									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.4									
Group 4	2-Chlorophenol	µg/L	<	0.12									
	2,4-Dichlorophenol	µg/L	<	0.149									
	2,4-Dimethylphenol	µg/L	<	0.16									
	4,6-Dinitro-o-Cresol	µg/L	<	1.4									
	2,4-Dinitrophenol	µg/L	<	1.5									
	2-Nitrophenol	µg/L	<	0.18									
	4-Nitrophenol	µg/L	<	0.9									
	p-Chloro-m-Cresol	µg/L	<	0.26									
	Pentachlorophenol	µg/L	<	0.81									
	Phenol	µg/L	<	0.46									
	2,4,6-Trichlorophenol	µg/L	<	0.21									
Group 5	Acenaphthene	µg/L	<	0.062									
	Acenaphthylene	µg/L	<	0.062									
	Anthracene	µg/L	<	0.047									
	Benzidine	µg/L	<	8.7									
	Benzo(a)Anthracene	µg/L	<	0.071									
	Benzo(a)Pyrene	µg/L	<	0.05									
	3,4-Benzofluoranthene	µg/L	<	0.092									
	Benzo(ghi)Perylene	µg/L	<	0.066									
	Benzo(k)Fluoranthene	µg/L	<	0.084									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.14									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.055									
	Bis(2-Ethylhexyl)Phthalate	µg/L		0.326									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.3									
	Butyl Benzyl Phthalate	µg/L	<	0.44									
	2-Chloronaphthalene	µg/L	<	0.056									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21									
	Chrysene	µg/L	<	0.077									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.069									
	1,2-Dichlorobenzene	µg/L	<	0.09									
	1,3-Dichlorobenzene	µg/L	<	0.094									
	1,4-Dichlorobenzene	µg/L	<	0.058									
	3,3-Dichlorobenzidine	µg/L	<	0.56									
	Diethyl Phthalate	µg/L	<	0.54									
	Dimethyl Phthalate	µg/L	<	0.19									
	Di-n-Butyl Phthalate	µg/L	<	0.98									
	2,4-Dinitrotoluene	µg/L	<	0.34									

	2,6-Dinitrotoluene	µg/L	<	0.16									
	Di-n-Octyl Phthalate	µg/L	<	0.65									
	1,2-Diphenylhydrazine	µg/L	<	0.19									
	Fluoranthene	µg/L	<	0.057									
	Fluorene	µg/L	<	0.66									
	Hexachlorobenzene	µg/L	<	0.053									
	Hexachlorobutadiene	µg/L	<	0.066									
	Hexachlorocyclopentadiene	µg/L	<	0.47									
	Hexachloroethane	µg/L	<	0.13									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.081									
	Isophorone	µg/L	<	0.2									
	Naphthalene	µg/L	<	0.056									
	Nitrobenzene	µg/L	<	0.48									
	n-Nitrosodimethylamine	µg/L	<	0.064									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068									
	n-Nitrosodiphenylamine	µg/L	<	0.11									
	Phenanthrene	µg/L	<	0.052									
	Pyrene	µg/L	<	0.051									
	1,2,4-Trichlorobenzene	µg/L	<	0.12									
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 603

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Unt to Allegheny 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	042368	0.8	900	0.11			Yes
End of Reach 1	042368	0.1	750	0.42			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	0.8	0.1	0.00049									100	7		
End of Reach 1	0.1	0.1	0.00246												

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	0.8														
End of Reach 1	0.1														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 603

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.018 PMF: 1 Analysis Hardness (mg/l): 62.031 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,938	
Total Antimony	0	0		0	1,100	1,100	2,842	
Total Arsenic	0	0		0	340	340	878	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	54,258	
Total Boron	0	0		0	8,100	8,100	20,928	
Total Cadmium	0	0		0	1.266	1.31	3.39	Chem Translator of 0.964 applied
Total Chromium (III)	0	0		0	385.339	1,219	3,151	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	42.1	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	245	
Total Copper	0	0		0	8.570	8.93	23.1	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	38.258	44.5	115	Chem Translator of 0.861 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.26	Chem Translator of 0.85 applied
Total Nickel	0	0		0	312.618	313	809	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	1.415	1.66	4.3	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	168	
Total Zinc	0	0		0	78.187	79.9	207	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.75	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	1,679	
Benzene	0	0		0	640	640	1,654	
Bromoform	0	0		0	1,800	1,800	4,651	
Carbon Tetrachloride	0	0		0	2,800	2,800	7,234	
Chlorobenzene	0	0		0	1,200	1,200	3,100	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	46,507	
Chloroform	0	0		0	1,900	1,900	4,909	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	38,756	
1,1-Dichloroethylene	0	0		0	7,500	7,500	19,378	
1,2-Dichloropropane	0	0		0	11,000	11,000	28,421	
1,3-Dichloropropylene	0	0		0	310	310	801	
Ethylbenzene	0	0		0	2,900	2,900	7,493	
Methyl Bromide	0	0		0	550	550	1,421	
Methyl Chloride	0	0		0	28,000	28,000	72,344	
Methylene Chloride	0	0		0	12,000	12,000	31,005	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,584	
Tetrachloroethylene	0	0		0	700	700	1,809	
Toluene	0	0		0	1,700	1,700	4,392	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	17,569	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,751	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,785	
Trichloroethylene	0	0		0	2,300	2,300	5,943	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,447	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,392	
2,4-Dimethylphenol	0	0		0	660	660	1,705	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	207	
2,4-Dinitrophenol	0	0		0	660	660	1,705	
2-Nitrophenol	0	0		0	8,000	8,000	20,670	
4-Nitrophenol	0	0		0	2,300	2,300	5,943	
p-Chloro-m-Cresol	0	0		0	160	160	413	
Pentachlorophenol	0	0		0	8.723	8.72	22.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,189	
Acenaphthene	0	0		0	83	83.0	214	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	775	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.29	
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	77,511	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	11,627	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	698	

Butyl Benzyl Phthalate	0	0		0	140	140	362	
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	2,119	
1,3-Dichlorobenzene	0	0		0	350	350	904	
1,4-Dichlorobenzene	0	0		0	730	730	1,886	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	10,335	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,459	
Di-n-Butyl Phthalate	0	0		0	110	110	284	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	4,134	
2,6-Dinitrotoluene	0	0		0	990	990	2,558	
1,2-Diphenylhydrazine	0	0		0	15	15.0	38.8	
Fluoranthene	0	0		0	200	200	517	
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	25.8	
Hexachlorocyclopentadiene	0	0		0	5	5.0	12.9	
Hexachloroethane	0	0		0	60	60.0	155	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	25,837	
Naphthalene	0	0		0	140	140	362	
Nitrobenzene	0	0		0	4,000	4,000	10,335	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	43,923	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	775	
Phenanthrene	0	0		0	5	5.0	12.9	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	336	

☑ ***CFC*** CCT (min): 0.018 PMF: 1 Analysis Hardness (mg/l): 62.031 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	
Fluoride (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	568	
Total Arsenic	0	0		0	150	150	388	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	10,593	
Total Boron	0	0		0	1,600	1,600	4,134	
Total Cadmium	0	0		0	0.176	0.19	0.49	Chem Translator of 0.929 applied
Total Chromium (III)	0	0		0	50.125	58.3	151	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	26.9	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	49.1	
Total Copper	0	0		0	5.955	6.2	16.0	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	3,876	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	1.491	1.73	4.48	Chem Translator of 0.861 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.34	Chem Translator of 0.85 applied
Total Nickel	0	0		0	34.722	34.8	90.0	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	12.9	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	33.6	
Total Zinc	0	0		0	78.827	79.9	207	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	7.75	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	336	
Benzene	0	0		0	130	130	336	
Bromoform	0	0		0	370	370	956	
Carbon Tetrachloride	0	0		0	560	560	1,447	
Chlorobenzene	0	0		0	240	240	620	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	9,043	
Chloroform	0	0		0	390	390	1,008	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	8,010	
1,1-Dichloroethylene	0	0		0	1,500	1,500	3,876	
1,2-Dichloropropane	0	0		0	2,200	2,200	5,684	
1,3-Dichloropropylene	0	0		0	61	61.0	158	
Ethylbenzene	0	0		0	580	580	1,499	
Methyl Bromide	0	0		0	110	110	284	
Methyl Chloride	0	0		0	5,500	5,500	14,210	
Methylene Chloride	0	0		0	2,400	2,400	6,201	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	543	
Tetrachloroethylene	0	0		0	140	140	362	
Toluene	0	0		0	330	330	853	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	3,617	
1,1,1-Trichloroethane	0	0		0	610	610	1,576	
1,1,2-Trichloroethane	0	0		0	680	680	1,757	
Trichloroethylene	0	0		0	450	450	1,163	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	284	
2,4-Dichlorophenol	0	0		0	340	340	878	
2,4-Dimethylphenol	0	0		0	130	130	336	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	41.3	
2,4-Dinitrophenol	0	0		0	130	130	336	

2-Nitrophenol	0	0		0	1,600	1,600	4,134	
4-Nitrophenol	0	0		0	470	470	1,214	
p-Chloro-m-Cresol	0	0		0	500	500	1,292	
Pentachlorophenol	0	0		0	6.693	6.69	17.3	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	235	
Acenaphthene	0	0		0	17	17.0	43.9	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	152	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.26	
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	15,502	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,351	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	140	
Butyl Benzyl Phthalate	0	0		0	35	35.0	90.4	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	413	
1,3-Dichlorobenzene	0	0		0	69	69.0	178	
1,4-Dichlorobenzene	0	0		0	150	150	388	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,067	
Dimethyl Phthalate	0	0		0	500	500	1,292	
Di-n-Butyl Phthalate	0	0		0	21	21.0	54.3	
2,4-Dinitrotoluene	0	0		0	320	320	827	
2,6-Dinitrotoluene	0	0		0	200	200	517	
1,2-Diphenylhydrazine	0	0		0	3	3.0	7.75	
Fluoranthene	0	0		0	40	40.0	103	
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	5.17	
Hexachlorocyclopentadiene	0	0		0	1	1.0	2.58	
Hexachloroethane	0	0		0	12	12.0	31.0	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	5,426	
Naphthalene	0	0		0	43	43.0	111	
Nitrobenzene	0	0		0	810	810	2,093	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	8,785	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	152	
Phenanthrene	0	0		0	1	1.0	2.58	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	67.2	

☑ ***THH*** CCT (min): 0.018 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	14.5	
Total Arsenic	0	0		0	10	10.0	25.8	
Total Barium	0	0		0	2,400	2,400	6,201	
Total Boron	0	0		0	3,100	3,100	8,010	
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	
Dissolved Iron	0	0		0	300	300	775	
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	2,584	
Total Mercury	0	0		0	0.050	0.05	0.13	
Total Nickel	0	0		0	610	610	1,576	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.62	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	7.75	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	258	
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	14.7	
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	85.3	

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	176	
Methyl Bromide	0	0		0	100	100.0	258	
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	147	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	258	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	25,837	
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	77.5	
2,4-Dichlorophenol	0	0		0	10	10.0	25.8	
2,4-Dimethylphenol	0	0		0	100	100.0	258	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5.17	
2,4-Dinitrophenol	0	0		0	10	10.0	25.8	
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	10,335	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	181	
Anthracene	0	0		0	300	300	775	
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	517	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.26	
2-Chloronaphthalene	0	0		0	800	800	2,067	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	2,584	
1,3-Dichlorobenzene	0	0		0	7	7.0	18.1	
1,4-Dichlorobenzene	0	0		0	300	300	775	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,550	

Dimethyl Phthalate	0	0		0	2,000	2,000	5,167	
Di-n-Butyl Phthalate	0	0		0	20	20.0	51.7	
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	51.7	
Fluorene	0	0		0	50	50.0	129	
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	10.3	
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	87.8	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	25.8	
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	51.7	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.18	

☑ ***CRL*** CCT (min): 0.009 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	2.22	
Acrylonitrile	0	0		0	0.06	0.06	1.9	
Benzene	0	0		0	0.58	0.58	18.4	
Bromoform	0	0		0	7	7.0	222	
Carbon Tetrachloride	0	0		0	0.4	0.4	12.7	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	25.4	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	30.2	
1,2-Dichloroethane	0	0		0	9.9	9.9	314	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	28.6	
1,3-Dichloropropylene	0	0		0	0.27	0.27	8.57	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	635	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	6.35	
Tetrachloroethylene	0	0		0	10	10.0	317	
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	17.5	
Trichloroethylene	0	0		0	0.6	0.6	19.0	
Vinyl Chloride	0	0		0	0.02	0.02	0.63	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.95	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	47.6	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.003	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.032	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.003	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.032	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.32	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.95	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	10.2	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	3.81	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.003	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	1.59	
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	1.59	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	1.59	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.95	
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	0.003	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.32	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	3.17	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.032	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.022	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.16	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	105	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.00002	0.00004	14.8	23.1	37.0	µg/L	14.8	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	775	THH	Discharge Conc > 10% WQBEL (no RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	4.48	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Nickel	0.0002	0.0002	90.0	140	225	µg/L	90.0	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	132	AFC	Discharge Conc > 10% WQBEL (no RP)
Acrylamide	0.000004	0.000006	2.22	3.47	5.55	µg/L	2.22	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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,242	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	6,201	µg/L	Discharge Conc < TQL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,134	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	0.49	µg/L	Discharge Conc < TQL
Total Chromium (III)	151	µg/L	Discharge Conc < TQL
Hexavalent Chromium	26.9	µg/L	Discharge Conc < TQL
Total Cobalt	49.1	µg/L	Discharge Conc < TQL

Total Cyanide	N/A	N/A	No WQS
Total Iron	3,876	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	2,584	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.13	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	12.9	µg/L	Discharge Conc < TQL
Total Silver	2.76	µg/L	Discharge Conc < TQL
Total Thallium	0.62	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	4.97	µg/L	Discharge Conc < TQL
Acrylonitrile	1.9	µg/L	Discharge Conc < TQL
Benzene	18.4	µg/L	Discharge Conc < TQL
Bromoform	222	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	12.7	µg/L	Discharge Conc < TQL
Chlorobenzene	258	µg/L	Discharge Conc < TQL
Chlorodibromomethane	25.4	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	9,043	µg/L	Discharge Conc < TQL
Chloroform	14.7	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	30.2	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	314	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	85.3	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	28.6	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	8.57	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	176	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	258	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	14,210	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	635	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	6.35	µg/L	Discharge Conc < TQL
Tetrachloroethylene	317	µg/L	Discharge Conc < TQL
Toluene	147	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	258	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	1,576	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	17.5	µg/L	Discharge Conc < TQL
Trichloroethylene	19.0	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.63	µg/L	Discharge Conc < TQL
2-Chlorophenol	77.5	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	25.8	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	258	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5.17	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	25.8	µg/L	Discharge Conc < TQL
2-Nitrophenol	4,134	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,214	µg/L	Discharge Conc < TQL

p-Chloro-m-Cresol	265	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.95	µg/L	Discharge Conc < TQL
Phenol	10,335	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	47.6	µg/L	Discharge Conc < TQL
Acenaphthene	43.9	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	775	µg/L	Discharge Conc < TQL
Benzidine	0.003	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.032	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.003	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.032	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.32	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.95	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	517	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	10.2	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	140	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.26	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	2,067	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	3.81	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.003	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	413	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	18.1	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	388	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	1.59	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,550	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	1,292	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	51.7	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	1.59	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	1.59	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.95	µg/L	Discharge Conc < TQL
Fluoranthene	51.7	µg/L	Discharge Conc < TQL
Fluorene	129	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.003	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.32	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	2.58	µg/L	Discharge Conc < TQL
Hexachloroethane	3.17	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.032	µg/L	Discharge Conc < TQL
Isophorone	87.8	µg/L	Discharge Conc < TQL
Naphthalene	111	µg/L	Discharge Conc < TQL
Nitrobenzene	25.8	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.022	µg/L	Discharge Conc < TQL

n-Nitrosodi-n-Propylamine	0.16	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	105	µg/L	Discharge Conc < TQL
Phenanthrene	2.58	µg/L	Discharge Conc < TQL
Pyrene	51.7	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.18	µg/L	Discharge Conc < TQL

Attachment Q:

IMP 903 Toxics Management Spreadsheet Evaluation

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Curtiss-Wright Electo-Mechanical Corportation NPDES Permit No.: PA0001228 Outfall No.: 903

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: LiOH Test Loop Wastewater

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.005	26	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		180									
	Chloride (PWS)	mg/L		9.66									
	Bromide	mg/L		0.0578									
	Sulfate (PWS)	mg/L		4.66									
	Fluoride (PWS)	mg/L		0.105									
Group 2	Total Aluminum	µg/L		290									
	Total Antimony	µg/L		0.8									
	Total Arsenic	µg/L		0.8									
	Total Barium	µg/L		3									
	Total Beryllium	µg/L		0.47									
	Total Boron	µg/L	<	63									
	Total Cadmium	µg/L		0.53									
	Total Chromium (III)	µg/L		51									
	Hexavalent Chromium	µg/L		48									
	Total Cobalt	µg/L		0.5									
	Total Copper	µg/L		13									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L		610									
	Total Iron	µg/L		4100									
	Total Lead	µg/L		0.7									
	Total Manganese	µg/L		360									
	Total Mercury	µg/L	<	0.13									
	Total Nickel	µg/L		1.6									
	Total Phenols (Phenolics) (PWS)	µg/L		44									
	Total Selenium	µg/L		0.9									
	Total Silver	µg/L		0.28									
	Total Thallium	µg/L		1.2									
	Total Zinc	µg/L		18									
	Total Molybdenum	µg/L		2.1									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<	11									
	Acrylonitrile	µg/L	<	1.1									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.2									

Group 3	Carbon Tetrachloride	µg/L	<	0.4										
	Chlorobenzene	µg/L	<	0.2										
	Chlorodibromomethane	µg/L	<	0.2										
	Chloroethane	µg/L	<	0.4										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5										
	Chloroform	µg/L	<	0.2										
	Dichlorobromomethane	µg/L	<	0.2										
	1,1-Dichloroethane	µg/L	<	0.2										
	1,2-Dichloroethane	µg/L	<	0.3										
	1,1-Dichloroethylene	µg/L	<	0.3										
	1,2-Dichloropropane	µg/L	<	0.2										
	1,3-Dichloropropylene	µg/L	<	0.2										
	1,4-Dioxane	µg/L	<	43										
	Ethylbenzene	µg/L	<	0.2										
	Methyl Bromide	µg/L	<	0.4										
	Methyl Chloride	µg/L	<	0.6										
	Methylene Chloride	µg/L	<	0.3										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2										
	Tetrachloroethylene	µg/L	<	0.3										
	Toluene	µg/L	<	0.2										
	1,2-trans-Dichloroethylene	µg/L	<	0.2										
	1,1,1-Trichloroethane	µg/L	<	0.2										
	1,1,2-Trichloroethane	µg/L	<	0.2										
	Trichloroethylene	µg/L	<	0.2										
	Vinyl Chloride	µg/L	<	0.3										
Group 4	2-Chlorophenol	µg/L	<	0.12										
	2,4-Dichlorophenol	µg/L	<	0.049										
	2,4-Dimethylphenol	µg/L	<	0.16										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.5										
	2-Nitrophenol	µg/L	<	0.19										
	4-Nitrophenol	µg/L	<	0.9										
	p-Chloro-m-Cresol	µg/L	<	0.27										
	Pentachlorophenol	µg/L	<	0.81										
	Phenol	µg/L	<	0.49										
	2,4,6-Trichlorophenol	µg/L	<	0.22										
Group 5	Acenaphthene	µg/L	<	0.063										
	Acenaphthylene	µg/L	<	0.063										
	Anthracene	µg/L		0.21										
	Benzidine	µg/L	<	8.8										
	Benzo(a)Anthracene	µg/L		1										
	Benzo(a)Pyrene	µg/L		0.6										
	3,4-Benzofluoranthene	µg/L		1.3										
	Benzo(ghi)Perylene	µg/L		0.76										
	Benzo(k)Fluoranthene	µg/L		1.1										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.15										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.038										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.056										
	Bis(2-Ethylhexyl)Phthalate	µg/L		26										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.31										
	Butyl Benzyl Phthalate	µg/L	<	0.44										
	2-Chloronaphthalene	µg/L	<	0.057										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.21										
	Chrysene	µg/L		0.94										
	Dibenzo(a,h)Anthrancene	µg/L		1										
	1,2-Dichlorobenzene	µg/L	<	0.091										
	1,3-Dichlorobenzene	µg/L	<	0.095										
	1,4-Dichlorobenzene	µg/L	<	0.059										
	3,3-Dichlorobenzidine	µg/L	<	0.56										
	Diethyl Phthalate	µg/L	<	0.55										
	Dimethyl Phthalate	µg/L	<	0.19										
	Di-n-Butyl Phthalate	µg/L		0.76										
	2,4-Dinitrotoluene	µg/L	<	0.34										

	2,6-Dinitrotoluene	µg/L	<	0.17										
	Di-n-Octyl Phthalate	µg/L		1.6										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L		0.76										
	Fluorene	µg/L	<	0.066										
	Hexachlorobenzene	µg/L		0.25										
	Hexachlorobutadiene	µg/L	<	0.066										
	Hexachlorocyclopentadiene	µg/L	<	0.48										
	Hexachloroethane	µg/L	<	0.13										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.1										
	Isophorone	µg/L	<	0.18										
	Naphthalene	µg/L		0.06										
	Nitrobenzene	µg/L	<	0.48										
	n-Nitrosodimethylamine	µg/L	<	0.064										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.068										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.053										
	Pyrene	µg/L		0.69										
	1,2,4-Trichlorobenzene	µg/L	<	0.13										
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

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 903

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Unt to Allegheny 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	042368	0.8	900	0.11			Yes
End of Reach 1	042368	0.1	750	0.42			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	0.8	0.1	0.00049									100	7		
End of Reach 1	0.1	0.1	0.00246												

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	0.8														
End of Reach 1	0.1														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Curtiss-Wright Electo-Mechanical Corportation, NPDES Permit No. PA0001228, Outfall 903

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 30.409 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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	798	
Total Antimony	0	0		0	1,100	1,100	1,170	
Total Arsenic	0	0		0	340	340	362	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	22,330	
Total Boron	0	0		0	8,100	8,100	8,613	
Total Cadmium	0	0		0	0.632	0.64	0.68	Chem Translator of 0.994 applied
Total Chromium (III)	0	0		0	214.915	680	723	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	17.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	101	
Total Copper	0	0		0	4.378	4.56	4.85	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	17.301	17.9	19.1	Chem Translator of 0.964 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.75	Chem Translator of 0.85 applied
Total Nickel	0	0		0	171.032	171	182	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	0.415	0.49	0.52	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	69.1	
Total Zinc	0	0		0	42.736	43.7	46.5	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.19	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	691	
Benzene	0	0		0	640	640	681	
Bromoform	0	0		0	1,800	1,800	1,914	
Carbon Tetrachloride	0	0		0	2,800	2,800	2,977	
Chlorobenzene	0	0		0	1,200	1,200	1,276	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	19,140	
Chloroform	0	0		0	1,900	1,900	2,020	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	15,950	
1,1-Dichloroethylene	0	0		0	7,500	7,500	7,975	
1,2-Dichloropropane	0	0		0	11,000	11,000	11,697	
1,3-Dichloropropylene	0	0		0	310	310	330	
Ethylbenzene	0	0		0	2,900	2,900	3,084	
Methyl Bromide	0	0		0	550	550	585	
Methyl Chloride	0	0		0	28,000	28,000	29,774	
Methylene Chloride	0	0		0	12,000	12,000	12,760	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,063	
Tetrachloroethylene	0	0		0	700	700	744	
Toluene	0	0		0	1,700	1,700	1,808	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,231	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,190	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,615	
Trichloroethylene	0	0		0	2,300	2,300	2,446	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	595	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,808	
2,4-Dimethylphenol	0	0		0	660	660	702	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	85.1	
2,4-Dinitrophenol	0	0		0	660	660	702	
2-Nitrophenol	0	0		0	8,000	8,000	8,507	
4-Nitrophenol	0	0		0	2,300	2,300	2,446	
p-Chloro-m-Cresol	0	0		0	160	160	170	
Pentachlorophenol	0	0		0	8.723	8.72	9.28	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	489	
Acenaphthene	0	0		0	83	83.0	88.3	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	319	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.53	
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	31,900	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	4,785	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	287	

Butyl Benzyl Phthalate	0	0		0	140	140	149	
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	872	
1,3-Dichlorobenzene	0	0		0	350	350	372	
1,4-Dichlorobenzene	0	0		0	730	730	776	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,253	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,658	
Di-n-Butyl Phthalate	0	0		0	110	110	117	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,701	
2,6-Dinitrotoluene	0	0		0	990	990	1,053	
1,2-Diphenylhydrazine	0	0		0	15	15.0	16.0	
Fluoranthene	0	0		0	200	200	213	
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	10.6	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.32	
Hexachloroethane	0	0		0	60	60.0	63.8	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	10,633	
Naphthalene	0	0		0	140	140	149	
Nitrobenzene	0	0		0	4,000	4,000	4,253	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	18,077	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	319	
Phenanthrene	0	0		0	5	5.0	5.32	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	138	

☑ *CFC* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 30.409 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	
Fluoride (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	234	
Total Arsenic	0	0		0	150	150	160	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,360	
Total Boron	0	0		0	1,600	1,600	1,701	
Total Cadmium	0	0		0	0.107	0.11	0.12	Chem Translator of 0.959 applied
Total Chromium (III)	0	0		0	27.956	32.5	34.6	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.1	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	20.2	
Total Copper	0	0		0	3.238	3.37	3.59	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,595	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	0.674	0.7	0.74	Chem Translator of 0.964 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.96	Chem Translator of 0.85 applied
Total Nickel	0	0		0	18.996	19.1	20.3	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.31	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	13.8	
Total Zinc	0	0		0	43.086	43.7	46.5	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.19	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	138	
Benzene	0	0		0	130	130	138	
Bromoform	0	0		0	370	370	393	
Carbon Tetrachloride	0	0		0	560	560	595	
Chlorobenzene	0	0		0	240	240	255	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,722	
Chloroform	0	0		0	390	390	415	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,296	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,595	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,339	
1,3-Dichloropropylene	0	0		0	61	61.0	64.9	
Ethylbenzene	0	0		0	580	580	617	
Methyl Bromide	0	0		0	110	110	117	
Methyl Chloride	0	0		0	5,500	5,500	5,848	
Methylene Chloride	0	0		0	2,400	2,400	2,552	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	223	
Tetrachloroethylene	0	0		0	140	140	149	
Toluene	0	0		0	330	330	351	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,489	
1,1,1-Trichloroethane	0	0		0	610	610	649	
1,1,2-Trichloroethane	0	0		0	680	680	723	
Trichloroethylene	0	0		0	450	450	479	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	117	
2,4-Dichlorophenol	0	0		0	340	340	362	
2,4-Dimethylphenol	0	0		0	130	130	138	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	17.0	
2,4-Dinitrophenol	0	0		0	130	130	138	

2-Nitrophenol	0	0		0	1,600	1,600	1,701	
4-Nitrophenol	0	0		0	470	470	500	
p-Chloro-m-Cresol	0	0		0	500	500	532	
Pentachlorophenol	0	0		0	6.693	6.69	7.12	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	96.8	
Acenaphthene	0	0		0	17	17.0	18.1	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	62.7	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.11	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,380	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	968	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	57.4	
Butyl Benzyl Phthalate	0	0		0	35	35.0	37.2	
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	170	
1,3-Dichlorobenzene	0	0		0	69	69.0	73.4	
1,4-Dichlorobenzene	0	0		0	150	150	160	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	851	
Dimethyl Phthalate	0	0		0	500	500	532	
Di-n-Butyl Phthalate	0	0		0	21	21.0	22.3	
2,4-Dinitrotoluene	0	0		0	320	320	340	
2,6-Dinitrotoluene	0	0		0	200	200	213	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.19	
Fluoranthene	0	0		0	40	40.0	42.5	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2.13	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.06	
Hexachloroethane	0	0		0	12	12.0	12.8	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,233	
Naphthalene	0	0		0	43	43.0	45.7	
Nitrobenzene	0	0		0	810	810	861	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,615	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	62.7	
Phenanthrene	0	0		0	1	1.0	1.06	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	27.6	

☑ ***THH*** CCT (min): 0.000 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.95	
Total Arsenic	0	0		0	10	10.0	10.6	
Total Barium	0	0		0	2,400	2,400	2,552	
Total Boron	0	0		0	3,100	3,100	3,296	
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	
Dissolved Iron	0	0		0	300	300	319	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,063	
Total Mercury	0	0		0	0.050	0.05	0.053	
Total Nickel	0	0		0	610	610	649	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.26	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.19	
Acrylamide	0	0		0	N/A	N/A	N/A	
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	106	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	6.06	
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	35.1	

1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	72.3	
Methyl Bromide	0	0		0	100	100.0	106	
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	60.6	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	106	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	10,633	
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	31.9	
2,4-Dichlorophenol	0	0		0	10	10.0	10.6	
2,4-Dimethylphenol	0	0		0	100	100.0	106	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.13	
2,4-Dinitrophenol	0	0		0	10	10.0	10.6	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,253	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	74.4	
Anthracene	0	0		0	300	300	319	
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	213	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.11	
2-Chloronaphthalene	0	0		0	800	800	851	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,063	
1,3-Dichlorobenzene	0	0		0	7	7.0	7.44	
1,4-Dichlorobenzene	0	0		0	300	300	319	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	638	

Dimethyl Phthalate	0	0		0	2,000	2,000	2,127	
Di-n-Butyl Phthalate	0	0		0	20	20.0	21.3	
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	21.3	
Fluorene	0	0		0	50	50.0	53.2	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.25	
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	36.2	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	10.6	
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	21.3	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.074	

☑ *CRL* CCT (min): 0.016 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	0.16	
Acrylonitrile	0	0		0	0.06	0.06	0.13	
Benzene	0	0		0	0.58	0.58	1.29	
Bromoform	0	0		0	7	7.0	15.6	
Carbon Tetrachloride	0	0		0	0.4	0.4	0.89	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	1.78	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	2.12	
1,2-Dichloroethane	0	0		0	9.9	9.9	22.1	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	2.01	
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.6	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	44.6	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.45	
Tetrachloroethylene	0	0		0	10	10.0	22.3	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	1.23	
Trichloroethylene	0	0		0	0.6	0.6	1.34	
Vinyl Chloride	0	0		0	0.02	0.02	0.045	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.067	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	3.34	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0002	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.002	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0002	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.002	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.022	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.067	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.71	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.27	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0002	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.11	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.11	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.11	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.067	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0002	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.022	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.22	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.002	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.002	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.011	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	7.36	
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* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	5.95	THH	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	0.000005	0.000008	0.12	0.19	0.3	µg/L	0.12	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Chromium (III)	0.001	0.002	34.6	53.9	86.4	µg/L	34.6	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	0.0005	0.0007	11.1	17.2	27.6	µg/L	11.1	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	0.0001	0.0002	3.59	4.85	4.85	µg/L	3.59	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	0.013	0.021	319	498	798	µg/L	319	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	0.067	0.1	1,595	2,488	3,988	µg/L	1,595	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.00003	0.00005	0.74	1.16	1.86	µg/L	0.74	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,063	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	5.31	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Silver	0.00002	0.00002	0.49	0.52	0.52	µg/L	0.49	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Thallium	0.00001	0.00002	0.26	0.4	0.64	µg/L	0.26	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	43.7	AFC	Discharge Conc > 10% WQBEL (no RP)
Acrylamide	0.000007	0.00001	0.16	0.24	0.39	µg/L	0.16	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	9.30E-08	1.45E-07	0.002	0.003	0.006	µg/L	0.002	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	9.30E-09	1.45E-08	0.0002	0.0003	0.0006	µg/L	0.0002	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	9.30E-08	1.45E-07	0.002	0.003	0.006	µg/L	0.002	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	9.30E-07	0.000001	0.022	0.035	0.056	µg/L	0.022	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Ethylhexyl)Phthalate	0.00003	0.00005	0.71	1.11	1.78	µg/L	0.71	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	0.00001	0.00002	0.27	0.42	0.67	µg/L	0.27	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Dibenzo(a,h)Anthrancene	9.30E-09	1.45E-08	0.0002	0.0003	0.0006	µg/L	0.0002	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobenzene	7.44E-09	1.16E-08	0.0002	0.0003	0.0004	µg/L	0.0002	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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Arsenic	10.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	2,552	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,701	µg/L	Discharge Conc < TQL
Total Cobalt	20.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS

Total Mercury	0.053	µg/L	Discharge Conc < TQL
Total Nickel	20.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.13	µg/L	Discharge Conc < TQL
Benzene	1.29	µg/L	Discharge Conc < TQL
Bromoform	15.6	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	0.89	µg/L	Discharge Conc < TQL
Chlorobenzene	106	µg/L	Discharge Conc < TQL
Chlorodibromomethane	1.78	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,722	µg/L	Discharge Conc < TQL
Chloroform	6.06	µg/L	Discharge Conc < TQL
Dichlorobromomethane	2.12	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	22.1	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	35.1	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	2.01	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.6	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	72.3	µg/L	Discharge Conc < TQL
Methyl Bromide	106	µg/L	Discharge Conc < TQL
Methyl Chloride	5,848	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	44.6	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.45	µg/L	Discharge Conc < TQL
Tetrachloroethylene	22.3	µg/L	Discharge Conc < TQL
Toluene	60.6	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	106	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	649	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	1.23	µg/L	Discharge Conc < TQL
Trichloroethylene	1.34	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.045	µg/L	Discharge Conc < TQL
2-Chlorophenol	31.9	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	10.6	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	106	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.13	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	10.6	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,701	µg/L	Discharge Conc < TQL
4-Nitrophenol	500	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.067	µg/L	Discharge Conc < TQL
Phenol	4,253	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	3.34	µg/L	Discharge Conc < TQL
Acenaphthene	18.1	µg/L	Discharge Conc < TQL

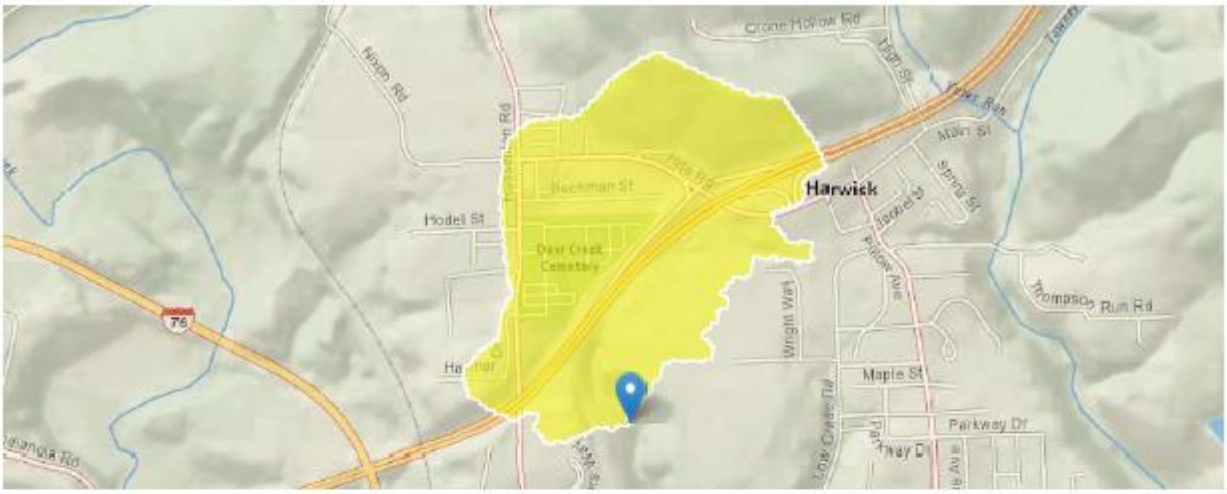
Acenaphthylene	N/A	N/A	No WQS
Anthracene	319	µg/L	Discharge Conc ≤ 25% WQBEL
Benzidine	0.0002	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.067	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	213	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	57.4	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.11	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	851	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
1,2-Dichlorobenzene	170	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7.44	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	160	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.11	µg/L	Discharge Conc < TQL
Diethyl Phthalate	638	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	532	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	21.3	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.11	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.11	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.067	µg/L	Discharge Conc < TQL
Fluoranthene	21.3	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	53.2	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.022	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.06	µg/L	Discharge Conc < TQL
Hexachloroethane	0.22	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.002	µg/L	Discharge Conc < TQL
Isophorone	36.2	µg/L	Discharge Conc < TQL
Naphthalene	45.7	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	10.6	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.002	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.011	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	7.36	µg/L	Discharge Conc < TQL
Phenanthrene	1.06	µg/L	Discharge Conc < TQL
Pyrene	21.3	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	0.074	µg/L	Discharge Conc < TQL

Attachment R:

Outfall 004 StreamStats Report

StreamStats Report

Region ID: PA
Workspace ID: PA20230726144343644000
Clicked Point (Latitude, Longitude): 40.54939, -79.81539
Time: 2023-07-26 10:44:05 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.29	square miles
ELEV	Mean Basin Elevation	980	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.29	square miles	2.26	1400
ELEV	Mean Basin Elevation	980	feet	1050	2580

Low-Flow Statistics Disclaimers [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 [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00579	ft^3/s
30 Day 2 Year Low Flow	0.0117	ft^3/s
7 Day 10 Year Low Flow	0.00159	ft^3/s
30 Day 10 Year Low Flow	0.00367	ft^3/s

Statistic	Value	Unit
90 Day 10 Year Low Flow	0.00762	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/)

Application Version: 4.16.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment S:

Outfall 004 Temperature Model Evaluation

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, Draft, August, 2023

Instructions | *Inputs*

Facility: **Curtiss-Wright**

Permit No.: **PA0001228**

Stream Name: **Unt to Allegheny**

Analyst/Engineer: **Adam Olesnanik**

Stream Q7-10 (cfs)*: **0.0**

Outfall No.: **004**

Analysis Type*: **WWF**

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31		0.053		0.053
Feb 1-29		0.053		0.053
Mar 1-31		0.053		0.053
Apr 1-15		0.053		0.053
Apr 16-30		0.053		0.053
May 1-15		0.053		0.053
May 16-31		0.053		0.053
Jun 1-15		0.053		0.053
Jun 16-30		0.053		0.053
Jul 1-31		0.053		0.053
Aug 1-15		0.053		0.053
Aug 16-31		0.053		0.053
Sep 1-15		0.053		0.053
Sep 16-30		0.053		0.053
Oct 1-15		0.053		0.053
Oct 16-31		0.053		0.053
Nov 1-15		0.053		0.053
Nov 16-30		0.053		0.053
Dec 1-31		0.053		0.053

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	0.01	0.09
3.5	1.00	0.01	0.09
7	1.00	0.01	0.09
9.3	1.00	0.01	0.10
9.3	1.00	0.01	0.10
5.1	1.00	0.01	0.09
5.1	1.00	0.01	0.09
3	1.00	0.00	0.09
3	1.00	0.00	0.09
1.7	1.00	0.00	0.08
1.4	1.00	0.00	0.08
1.4	1.00	0.00	0.08
1.1	1.00	0.00	0.08
1.1	1.00	0.00	0.08
1.2	1.00	0.00	0.08
1.2	1.00	0.00	0.08
1.6	1.00	0.00	0.08
1.6	1.00	0.00	0.08
2.4	1.00	0.00	0.09

Temperature

Ambient Stream Temperature (°F)*

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, Draft, August, 2023

Instructions | *WWF Results*

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**WWF** Target Maximum Stream Temp. (°F)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (°F)
Jan 1-31	40	N/A -- Case 2	40.3
Feb 1-29	40	N/A -- Case 2	40.3
Mar 1-31	46	N/A -- Case 2	46.8
Apr 1-15	52	N/A -- Case 2	52.9
Apr 16-30	58	N/A -- Case 2	58.9
May 1-15	64	N/A -- Case 2	64.6
May 16-31	72	N/A -- Case 2	73.0
Jun 1-15	80	N/A -- Case 2	80.8
Jun 16-30	84	N/A -- Case 2	84.8
Jul 1-31	87	N/A -- Case 2	87.4
Aug 1-15	87	N/A -- Case 2	87.4
Aug 16-31	87	N/A -- Case 2	87.4
Sep 1-15	84	N/A -- Case 2	84.3
Sep 16-30	78	N/A -- Case 2	78.3
Oct 1-15	72	N/A -- Case 2	72.3
Oct 16-31	66	N/A -- Case 2	66.3
Nov 1-15	58	N/A -- Case 2	58.3
Nov 16-30	50	N/A -- Case 2	50.2
Dec 1-31	42	N/A -- Case 2	42.2