pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0245399**
Facility Type	**Industrial**	APS ID	**1068243**
Major / Minor	**Major**	Authorization ID	**1425389**

NPDES PERMIT FACT SHEET
INDIVIDUAL INDUSTRIAL WASTE (IW)

Applicant and Facility Information

Applicant Name	**Municipal Authority of Borough of Morrisville**	Facility Name	**Morrisville KTC WWTP**
Applicant Address	35 Union Street	Facility Address	1 Sessa Circle
	Morrisville, PA 19067		Fairless Hills, PA 19030
Applicant Contact	Robert Campbell	Facility Contact	Scott Haws
Applicant Phone	(215) 254-7747	Facility Phone	(215) 295-8181
Client ID	64800	Site ID	858859
SIC Code	4952	Municipality	Falls Township
SIC Description	Trans. & Utilities - Sewerage Systems	County	Bucks
Date Application Received	January 2023	EPA Waived?	No
Date Application Accepted		If No, Reason	Major NPDES Permit, PCBs TMDL

Purpose of Application: Application for discharge of treated industrial wastewater and treated sewage into Delaware River.

Summary of Review

The applicant, Municipal Authority of Borough of Morrisville (MMA) has submitted National Pollutant Discharge Elimination System (NPDES) permit application to discharge treated industrial waste, treated sewage from the facility known as Morrisville KTC WWTP located in Falls Township, Bucks County. The treated wastewater will be continued to be discharge to Delaware River, Estuary Zone 2.

The Department issued an NPDES permit PA0013463 to U. S. Steel on November 10, 2021 which approves discharge of process wastewater, noncontact cooling water, sewage wastewater, and stormwater from the USS facility located in Falls Township, Bucks County. The treated wastewaters are being discharged through several existing outfalls to Biles Creek and Delaware River Estuary (Zone 2).

On December 23, 2020, U. S. Steel sold the Real Estate assets and utilities including cooling water intake structures (CWIS) to NP Falls Township Industrial, LLC (Northpoint). U. S. Steel continues to own and operate the Galvanize Line and Finishing Mill Treatment Plant (FMTP). After the sale to Northpoint, majority of the water infrastructure assts were transferred to Morrisville Municipal Authority (MMA), who now owns and operates the CWIS, Sewage Treatment Plant, Industrial Treatment Plant (ITP), Potable Treatment Plant as well as water distribution systems. The Department is working with U. S. Steel, Northpoint, and MMA to separate the current NPDES permit into their own respective permits.

Outfall Descriptions and Current Property Ownership

Existing Permit PA0013463 includes the following 7 outfalls, to be separated based on the current ownership

- 002 Noncontact cooling water from U. S. Steel galvanizing operation and stormwater runoff from U. S. Steel Galvanize Process area, Mazza Iron & Steel, GMA,

Approve	Deny	Signatures	Date
X		Ketan Thaker Ketan Thaker / Project Manager	10/24/2023
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	10/24/2023

Summary of Review

Covanta, and FMTP area – Transferred Ownership to Northpoint for Outfall 002, (discharge of NCCW from USS will be monitored under MP102 under USS Permit)

- 003 Process wastewater, sewage wastewater, and Fairless Energy – Transferred to MMA (Note that wastewater contributing to Outfall 003 is monitored at internal monitoring points.)
- 004 Stormwater from eastern portion of Site and discharge from stormwater basins adjacent to Air Products property & Kinder Morgan properties - Transferred Ownership to Northpoint
- 008 Stormwater Runoff (north yard and main gate area and other non-U. S. Steel properties) - Transferred Ownership to Northpoint
- 009 Stormwater Runoff (wire mill area) - Transferred Ownership to Northpoint
- 010 Intake Screen Discharge Water – Transferred Ownership to MMA
- 011 ("C Well") Intake Screen Discharge Water - Transferred Ownership to Northpoint

Due to tidal conditions at Outfall 003, effluent monitoring is not possible and wastewater that discharges through Outfall 003 is monitored at internal monitoring points, as follows:

- 103 Treated Industrial / Process Wastewater from ITP - Transferred Ownership to MMA
- 203 Treated Sewage Wastewater from STP - Transferred Ownership to MMA
- 303 Stormwater Runoff - Transferred Ownership to Northpoint
- 403 Treated Industrial / Process Wastewater from FMTP – discharges will be redirected to ITP and the discharge from MP 403 will be monitored by MMA until it is authorized under the MMA pretreatment Program

This NPDES permit PA0245399 for MMA includes Outfall 003, Internal Monitoring MP 103, MP 203, MP 403 and Outfall 010.

Outfall 010 receives Intake Screen Discharge Water.

Outfall 003:

Submerged outfall and tidal conditions at Outfall 003 make monitoring at the outfall 003 impossible. Therefore, contribution to Outfall 003 are monitored at the following monitoring points:

Monitoring Point		Description of Wastewater
MP 103	-	Treated Process Wastewater from Industrial Treatment Plant
MP 203	-	Treated Sewage Wastewater
MP 303	-	SWRO covered under Northpoint NPDES Permit PA0245402
MP 403	-	Treated Process Wastewater from Finishing Mill Treatment Plant (interim limit until MMA will have approved pretreatment program with Local Limits

The sources of wastewater to MP 103 are:

(1) Cooling Tower blow down, HRSG blow down, and Water Treatment blow down, Housekeeping and Stormwater from Fairless Energy (Dominion). (2.442 MGD)
(2) Wastewater from filter backwash and feed water treatment. (0.0014 MGD)
(3) Effluent from FMTP (MP 403). (0.856 MGD)

Process wastewater flows are subject to Environmental Protection Agency's (EPA) Effluent limit guidelines for the Steam Electric Power Plant subcategory 40 C.F.R. 423. The average flow rate through MP 103 will be 3.75 MGD are as follows: It is noted that Exelon Fairless Hills Generating Station and AE Polysilicon (AEP) have ceased operations, the long-term average flow will remain at 3.75 MGD as future operations are anticipated to have similar to flows as in the current permit.

Sources	Average Monthly Flow (MGD)	Max. Daily Flow (MGD)
Fairless Energy - HRSG blow down	0.073	0.073
Fairless Energy - Cooling Tower blow down	2.01	2.01
Fairless Energy - water treatment blow down	0.208	0.208
Fairless Energy - housekeeping and stormwater	0.151	0.151
Filter Backwash	0.0014	0.0014
From FMTP (MP 403)	0.856	1.96
Total (approx.)	3.75	5.44

MP 103:

Industrial wastewater generated on the site by US Steel and its industrial tenants is treated through the Industrial Treatment Plant (ITP) prior to discharge into the Delaware River through Outfall 103. Influent wastewater is conveyed through a series of lift station to ITP, either from users or from the effluent stream of the Finishing Mill Treatment Plant (FMTP) to ITP intake. On arrival to the to the treatment plant, wastewater flows to the lift station, which has lift pumps that generate the forward flow to the ITP processes. Wastewater is transferred from pumping station to an open flume, flowing by gravity to the aeration basins. Four aerations act as preliminary settling basins for the removal of solids and grits. After flowing through aeration basins, wastewater flows via distribution channel to four sedimentation basins. Settleable solids pulled from sedimentation basins are fed to a hopper and pumped to FMTP. Skimmer pipes are available in the sedimentation basins to remove oil and grease or other accumulated floatable solids. Wastewater treated by sedimentation basins flow to the stabilization lagoons, two large clay-lined settling ponds to provide additional residence time for settleable solids to be removed from water. The effluent from the sedimentation basins flows by gravity to Lagoon #3, where a floating surface is aerator is available to aerate water prior to leaving the pond. Water flows from Lagoon #3 to Lagoon #5 via underground pipe and is discharged from Lagoon #5 to Outfall 103 through a rectangular weir to the Delaware River.

Effluent limits for MP 103 in MMA NPDES permit are carried over and are same as was in U. S. Steel NPDES permit PA0013463 before the split.

Effluent Limit Summary: (Technology Based limitation):

For Fairless Energy Power Plant:

Fairless Energy, a limited liability company owned by Dominion Energy, Inc., is a natural gas fired combined cycle electrical power generation facility, a tenant of USS.

The project includes four combustion turbine, four recovery steam generators, and two steam turbines. The project generates approximately 1,190 mega-watts during normal operation.

USS Corporation provides water and wastewater needed for the project under the service agreement with Fairless Energy. The project discharges process wastewater to the existing USS terminal treatment plant, and sanitary waste to sanitary wastewater treatment plant. The stormwater from the transformer containment areas will be collected and combined with the process wastewater and sent to terminal treatment plant.

The primary source of the wastewater is cooling tower blow down of 2.01 MGD. Other source includes filter wash, HRSG blow down, housekeeping, and on-site stormwater (0.432 MGD). The total discharge for the project will be 2.442 MGD average long-term flow.

With respect to wastewater discharge, the project falls within the EPA team Electric Generating Point Sources Category 40 C.F.R. Part 423 (New Source Performance Standard/Best Available Technology). The ELG limits are as follows:

Summary of Review

Parameter	Effluent Conc. limits (mg/l)		Mass Loading (lb/day)		Applicable Flow (mgd)
	Ave. Month	Max. Daily	Ave. Month	Max. Daily	Long term Ave.
TSS**	30	100	108	360	0.432
TSS***	5		84	84	2.01
Oil and Grease**	15	20	54	72	0.432
Oil and Grease***	5		84	84	2.01
Chromium	0.2	0.2	4.06	4.06	2.01
Zinc	1.0	1.0	18.23	18.23	2.01
TDS*	1,100	2,200			2.442 (DRBC)
TRC	0.2	0.2			2.442
PCBs	N/D	N/D			2.442
pH	Within limits of 6.0 to 9.0 at all times				2.442

* DRBC requirements applied due to various chemical additives being proposed for use.

** Applicable to all other wastewater except cooling tower blow down (0.432 mgd flow). This is final effluent concentration based on ELGs.

*** Applicable to Cooling Tower blow down wastewater only (2.01 MGD flow). These allowances are given based on existing discharge concentration of TSS in the ITP effluent. Data provided by applicant as part of the current permit requirement for the treatment plant efficiency. No TSS removal of this portion of the waste stream is assumed at low influent concentration and 69 percent removal is assumed at higher influent concentration. Therefore, 5 mg/l effluent concentrations are used for average and daily maximum limit calculation at all conditions.

From Finishing Mill Treatment Plant:

Also, the following mass loading (TSS and Oil and Grease) from effluent of finishing mill treatment plant is given to MP 103. These limits are not given at MP 403.

Parameter	BAT Limits (lb/day)	
	Average	Daily Max.
TSS	277	638
Oil and Grease	92	273

Also, the following mass loading (TSS and Oil and Grease) for the 0.4 MGD miscellaneous flow contributed by filter backwash at the **MP 103** as follows:

(Based on 5.0 mg/l TSS and 5.0 mg/l Oil and Grease). These limits are based on BPJ.

Parameter	BAT Limits (lb/day)	
	Average	Daily Max.
TSS	17	34
Oil and Grease	17	34

Therefore, limitation at MP 103 (BAT), based on ELGs and total flow of 3.75 MGD average monthly (0.452 MGD misc., 0.856 MGD from MP 403 and 2.442 MGD from Fairless Energy), and 5.44 MGD Daily Max are as follows:

Parameter	Mass (lb/day)		Concentration (MG/L)**		
	Average Monthly	Maximum Daily	Average Month	Maximum Daily	Inst. Maximum
TSS	486	1,116	30		38.5
Oil and Grease	247	463	Report	Report	19.7
Chromium	4.06	5.49	Report	Report	0.32

Summary of Review

Zinc	18.23	21.17	Report	Report	1.45
Total Dissolved Solids			1,100	2,200	2,750
PCBs*				Report	
Total Residual Chlorine			0.31		0.5
pH	Within limits of 6.0 to 9.0 STD Units at all times				
Ammonia-Nitrogen	Report		20		40
BOD5 (Influent)			Report	Report	Report
BOD5 (Effluent)			7.5	Report	15
BOD5 (% Removal) ***			88.5% Minimum		
Temperature (F˚)					110
Toxicity (Chronic)				Report	
Color (Pt-Co)					100

* PCBs monitoring and PMP is included in the permit per TMDL and PMP rules as described by DRBC.

** Concentration limits were calculated based on the flow of 3.75 MGD. However, based on revised Technical Guidance, concentrations will be "monitor only" when mass limits are technology based (BAT). Therefore, concentration limits are placed monitor/report in the permit with the I-Max = 2.5 X Average Month or (1.25 X Daily Max), whenever 2.5 X Average Monthly limits are less than or equal to Daily Maximum limits. The I- Max limits are for grab samples taken by regulatory agencies for compliance purpose.

*** The BOD_5 percent removal is not applicable when influent BOD_5 concentration is less than 30 mg/l. However, during this situation, effluent BOD_5 shall not exceed 7.5 mg/l.

TRC limitation is calculated by using mass balance of 2.442 MGD Fairless Energy's flow at 0.2 mg/l while remaining 1.308 MGD flow at 0.5 mg/l. The I-Max limit is kept at 0.5 mg/l, which is BAT.

Also, as per DRBC requirements and docket approval, limits of Total Dissolved solids, $CBOD_{20}$, and BOD_5 percent removal are carried over in this renewal.

MP 203:

Sanitary wastewater is discharged primarily from this discharge point. Effluent limits in MMA permit for this outfall is carried over and will be same as was in the U. S. Steel NPDES permit PA0013463 before the split. The long-term average sanitary flow at this monitoring point is 0.163 MGD.

The limits at this point are per 40 C.F.R. 133 along with the Department's Chapters 93, and 95 specify "secondary limits" as a minimum standard for all sewage discharges.

First stage Oxygen Demand ($CBOD_{20}$) of 67 lbs/day has been allocated by DRBC for sanitary waste discharges. Also 88.5 percent BOD_5 percent reduction continued per DRBC Estuary Zone 2 requirements. Ammonia-Nitrogen limit is revised from 35 mg/l to 20 mg/l as DRBC is working on developing Ammonia limit for Delaware River Estuary. It appears from the effluent data that the treatment plant can achieve this new limit for Ammonia. We have also revised effluent limit for Dissolved Oxygen to 4.0 mg/l from Monitor/Report. It is based on BPJ limit of 4.0 mg/l under Chapter 93 for warm water fisheries. It appears from the effluent data that the treatment plant can meet this limit. Effluent limits for rest of the parameters will remain the same in this permit renewal.

Monitoring of Phosphorus, Copper, Lead, and Zinc would continue in this renewal due to concern of these pollutants in the effluent.

Summary of Review

Municipal Authority of Borough of Morrisville (MMA) treats sanitary flow from its Fairless Works facility and all industrial clients on the property. Influent wastewater is collected through collection system. Wastewater is passed through two comminutors and then in to pumping station where it is blended with return underflow from secondary clarifier. The pumping station consists of 3 pumps to provide steady flow through STP. Sewage is treated in a combined Primary Clarifier and Solids Digester. Floatable solids are skimmed from the top of the tank with a rotating scraper arm and the skimmed solids flow back to pumping station by gravity. The sanitary wastewater overflows from the effluent weir of the primary clarifier and flows by gravity into dosing chamber which controls the flow into the Trickling Filters. From the trickling filters, wastewater is gravity fed to a secondary clarifier, where a rotating scraper arm removes floating solids from the surfaces and scrapes settled solids to the center bottom of clarifier. Effluent from the secondary clarifier flows by gravity to Chlorine Contact Chamber. After the adequate contact time, the sanitary wastewater is discharged via Outfall 203 into Delaware River.

The permittee is generally in compliance with all parameters and compliance of the proposed limits is expected.

	Mass (lb/day)		Concentration (MG/L)		
Parameter	**Average Monthly**	**Maximum Daily**	**Average Monthly**	**Maximum Daily**	**Instantaneous Maximum**
Flow (MGD)	Report				
BOD5 (Influent)			Report	Report	
BOD5 (Effluent)	34		25	40 Average Weekly	50
BOD5 (% Removal) *	Minimum 88.5				
TSS (Influent)			Report	Report	
TSS (Effluent)	41		30	45 Average weekly	60
TSS (% Removal) *	Minimum 85.0				
pH (STD)			6.0		9.0
Fecal Coliform			# 200/100 ML		1,000
Phosphorus as P			Report		
Copper, Total				Report	
Lead, Total				Report	
Ammonia-Nitrogen	27		20		
Dissolved Oxygen			4.0 (minimum)		
Zinc, Total				Report	
Total Dissolved Solids				Report	
PCBs – Dry Weather				Report	

* Percent removal is not applicable when influent waste stream has BOD is less than 25 mg/l. However, in this case, effluent BOD_5 shall not exceed more than 5.0 mg/l.

MP 403

Interim Limits and Pretreatment Program Requirements:

As described earlier, on December 23, 2020 U. S. Steel (USS) sold majority of the Real Estate assets and utilities including cooling water intake structures (CWIS) to Northpoint Industrial, LLC, (Northpoint). U. S. Steel continues to own and operate the Galvanize Line and Finishing Mill Treatment Plant (FMTP). After the sale to Northpoint, majority of the water infrastructure assts were transferred to Morrisville Municipal Authority (MMA), who now owns and operates the CWIS, Sewage Treatment Plant (STP), Industrial Treatment Plant (ITP), Potable Treatment Plant, water distribution and wastewater collection systems. The Department is working with USS, Northpoint, and MMA to have their own NPDES permit for their own respective system. Currently, prior to sales, USS was discharging the treated wastewater from their FMTP via MP403, to the ITP for additional treatment and that arrangement will continue moving forward after the sale into MMA system.

MMA is a municipal authority and the size of the treatment facilities they have acquired, the facility is considered as a major Publicly Owned Treatment Works (POTW), and therefore, MMA shall comply with federal Pretreatment Program as per Part C, Other requirement VI of this permit to accept wastewater from any significant Industrial Users (SIUs). Since MP 403 is an

Summary of Review

existing discharge into MMA system and while MMA is developing the Pretreatment Program, MMA shall in coordination with USS comply with all requirements of MP 403 included in the permit until MMA develops and EPA reviews and approves local limit for this discharge. MMA must submit monthly DMRs for MP 403 same as of other outfalls. Upon completion of the pretreatment program requirements as outlined in Part C, Other requirement no. VI of the permit, and when EPA grants the local limit, MMA shall apply for NPDES permit amendment to remove monitoring of MP403 from the permit.

US Steel currently treats wastewater from industrial users at the Finishing Mill Treatment Plant (FMPT) located on the premises. Influent wastewater is collected through a collection system. The influent wastewater pH is adjusted as needed, and then sent to a mixer where clarification agents are added and discharged to the clarifiers. Solids are dewatered and sent to a landfill. The treated wastewater can be recirculated if needed or discharged through Outfall 403.

The sources of wastewater to MP 403 are from Alkaline cleaning, hot coating, and cold forming operations. The long-term average flow rate through MP 403 associated with the existing production is 0.856 MGD. Both Technology Based (BAT) and Water Quality (WQ) based effluent limits were calculated. Also, DRBC requirements were also considered to calculate the effluent limits. Most of the limits at the MP 403 are BAT since this is an internal monitoring point and there is no direct discharge from this outfall to the surface water. The effluent from this monitoring point will go through terminal treatment plant prior to discharge into the river.

The effluent limits for MP 403 for this NPDES permit for MMA will be same as in the U. S. Steel NPDES permit PA0013463 issued on November 10, 2021.

BAT effluent limit calculations:

Note that the below ELG based limit calculations are based on BAT. As we are including this outfall's limit as a pre-treatment limit in interim, the calculated ELG based limits are same as or stringent than Pretreatment Standards for Existing sources (PSES) based limits applicable per 40 CFR Part 420.105, 420.115 and 420.125 and compliance of 40 CFR Part 403 are included. However, pretreatment standards are still applicable to this discharge. It was department discretion to apply BPT limit which are more stringent than PSES.

A. **Alkaline Cleaning:**

1. Continuous Alkaline Cleaning (Electrolytic Cleaner, CA Line, TFS, ETL, Galvanizing)
40 C.F.R. Part 420.112(b) – BPT = BAT

Mass limits calculated using existing Production Data, and BAT wastewater generation rate of 350 gallons per ton and BAT concentration limits shown.

B. **Cold Forming** – Temper Mill - 40 C.F.R. Part 420.102(a)(4) - BPT
40 C.F.R. Part 420.103(a)(4) - BAT
Galvanizing Temper

C. Hot Coating **- Continuous Line Galvanizing** **40 C.F.R. Part 420.122(a)(1) - BPT**
40 C.F.R. Part 420.123(a)(1) – BAT

BAT Effluent Limits Calculations are attached.

Summary of Review

2019 PERMIT APPLICATION TBEL CALCULATIONS
U. S. Steel Fairless Works
Calculation of Technology Based Effluent Limitations
MP 103 / MP 403

	Process	Production (1000/Day)	Applicable Effluent Limitation	Units	TSS Monthly Average	TSS Daily Maximum	O&G Monthly Average	O&G Daily Maximum	Lead Monthly Average	Lead Daily Maximum	Zinc Monthly Average	Zinc Daily Maximum	Naphthalene Daily Maximum	TCE Daily Maximum	Hex Chrome[2] Daily Maximum	Hex Chrome[2] Daily Maximum
1	Alkaline Cleaning of Strip Steel	2130	420.112 (b) + 420.113 (b) Subpart K	lbs./1000 lb.	0.0438	0.102	0.0146	0.0438								
				lbs/day	93.3	217.3	31.1	93.3								
			BAT[1]						0.47	1.40	0.31	0.93				
2	Cold Forming Temper Mill	2130	420.102 (a)(4) + 420.103 (a)(4) Subpart J	lbs./1000 lb.	0.0113	0.0225	0.00376	0.00939	0.0000563	0.000169	0.0000376	0.000113	0.0000376	0.0000563		
				lbs/day	24.1	47.9	8.0	20.0	0.12	0.36	0.08	0.24	0.08	0.12		
3	Hot Coating Strip Steel Cont. Galv[2]	2130	420.122 (a)(1) + 420.123 (a)(1) Subpart L	lbs./1000 lb.	0.0751	0.175	0.0250	0.0751	0.000376	0.00113	0.000500	0.00150			0.0000501	0.000150
				lbs/day	160.0	372.8	53.3	160.0	0.80	2.41	1.07	3.20			0.107	0.320
Total Effluent Limit (1+2+3)				**lbs/day**	277	638	92	273	1.39	4.17	1.46	4.37	0.080	0.120	0.107	0.320
Monitoring Point					103				403							

1 Mass limits calculated using existing Production Data, and BAT wastewater generation rate of 350 gallons per ton and BAT concentration limits shown
2 The limitations for hexavalent chromium shall apply only to galvanizing operations which discharge wastewaters from the chromate rinse step

2019 Permit Application Lead & Zinc Calculations[1]

Alkaline Cleaning										
Lead	Production[2] (Tons/Day)		EPA Base Flow (Gal/Ton)		BAT limit (mg/L)		Conversion Factor		Effluent Limit (lbs/day)
Avg	1065	*	350	*	0.15	*	8.34E-06	=	0.47
Max	1065	*	350	*	0.45	*	8.34E-06	=	1.40
Zinc	Production[2] (Tons/Day)		EPA Base Flow (Gal/Ton)		BAT limit (mg/L)		Conversion Factor		Effluent Limit (lbs/day)
Avg	1065	*	350	*	0.1	*	8.34E-06	=	0.31
Max	1065	*	350	*	0.3	*	8.34E-06	=	0.93

1 Mass limits calculated using existing Production Data, and BAT wastewater generation rate of 350 gallons per ton and BAT concentration limits used in the 2006 Fact Sheet

2 5 Year Production data (2014 - 2018)

Summary of Review

5-Year Production Information

2014

	Tons	Days	Tons/Day
Jan	26,821	25.0	1072.8
Feb	26,134	24.9	1051.0
Mar	31,171	29.3	1065.1
Apr	29,842	27.0	1105.3
May	24,726	24.4	1013.4
June	26,734	24.8	1078.0
July	27,819	25.9	1074.1
Aug	31,101	28.7	1084.9
Sept	26,525	26.2	1013.7
Oct	24,840	22.7	1092.7
Nov	29,000	26.9	1076.7
Dec	28,886	27.5	1051.7
Total	**333,599**	**313.2**	**1065.1**

2015

	Tons	Days	Tons/Day
Jan	17,518	18.6	940.1
Feb	18,406	18.9	973.9
Mar	16,746	18.0	930.3
Apr	16,844	17.4	969.9
May	21,562	21.7	992.1
June	22,525	22.4	1004.1
July	22,640	22.6	1003.3
Aug	22,365	24.0	931.9
Sept	23,154	24.9	931.1
Oct	19,362	19.4	999.7
Nov	20,915	21.1	992.8
Dec	26,286	25.1	1047.2
Total	**248,321**	**254.0**	**977.5**

2016

	Tons	Days	Tons/Day
Jan	21,537	20.7	1042.1
Feb	23,592	22.4	1054.8
Mar	22,780	22.5	1011.0
Apr	24,639	21.9	1123.4
May	25,360	24.1	1053.7
June	28,234	26.3	1073.5
July	24,918	24.4	1022.6
Aug	26,499	27.1	976.6
Sept	24,410	22.5	1083.3
Oct	23,003	23.5	978.9
Nov	17,736	17.1	1037.2
Dec	25,688	25.0	1027.5
Total	**288,397**	**277.5**	**1039.3**

2017

	Tons	Days	Tons/Day
Jan	25,231	25.5	988.2
Feb	21,812	24.7	884.3
Mar	25,287	26.0	971.3
Apr	26,938	28.4	948.5
May	26,214	26.6	986.7
June	28,167	28.3	994.1
July	28,461	29.0	982.5
Aug	29,020	30.0	967.3
Sept	26,080	27.3	954.1
Oct	21,296	22.3	953.5
Nov	21,722	23.1	940.4
Dec	25,561	26.7	957.3
Total	**305,788**	**318.0**	**961.7**

2018

	Tons	Days	Tons/Day
Jan	23,701	26.7	888.8
Feb	18,160	18.5	983.4
Mar	27,977	27.3	1023.6
Apr	24,678	23.9	1034.0
May	25,473	24.4	1044.0
June	21,704	22.2	979.1
July	28,346	26.3	1079.2
Aug	24,463	23.6	1035.1
Sept	27,768	26.6	1043.9
Oct	27,885	26.6	1048.3
Nov	26,112	26.6	981.7
Dec	25,369	26.4	959.7
Total	**301,637**	**299.0**	**1008.7**

Maximum Yearly Average	Tons/Day	1,000 lbs/Day
	1,065.1	2,130

Maximum Monthly Average	Tons/Day	1,000 lbs/Day
	1,123.4	2,247

The limits of TSS and Oil and Grease, which are to be applied at Monitoring Point MP 103 are as follows:

Summary of Review

Parameter	Production Basis (tons/day)	BAT Limits (lb/1,000 lb)		Effluent limits (lb/day)	
		Average	Daily Max.	Average	Daily Maximum
TSS	-	-	-	277	638
Oil and Grease	-	-	-	92	273

Limits of the remaining parameters, which are to be applied at MP 403 are as follows:

Parameter	Production Basis (tons/day)	BAT Limits (lb/1,000 lb)		Effluent limits (lb/day)	
		Average	Daily Max.	Average	Daily Maximum
Lead	-	-	-	1.39	4.17
Zinc	-	-	-	1.46	4.37
Naphthalene					0.080
Tetrachloroethylene					0.120
Chromium, Hex				0.107	0.320

An additional credit at MP 403 for parameters Chromium (Total), Nickel, and Cadmium are given for the based on development documents for effluent limitations guideline and standards for the Iron and Steel Manufacturing (Volume 1, Point Source Category, Table A-8, page 289) are as follows:

Total flow from all processes contributing at MP 403 = 0.856 MGD

Based on development document for Effluent limitations guidelines and standard for Iron and Steel Manufacturing for Point Source Discharge Volume 1, page 289. The following concentration of regulated metallic parameters with clarification/sedimentation treatment process can be allowed in effluent:

Parameters	Allowable Effluent Concentration	
	Average Monthly (mg/l)	Maximum Daily (mg/l)
Nickel	0.2	0.45
Copper	0.1	0.3
Chromium, Total	0.1	0.3

Therefore, additional loading permitted for the above listed parameters are as follows:

Parameters	Calculated Mass Loadings (lb/day) = Flow X 8.34 X Concentration (mg/l)	
	Average Monthly (lb/day)	Maximum Daily (lb/day)
Nickel	1.43	3.21
Copper	0.71	2.14
Chromium, T*	0.71	2.14

* This loading applied at Outfall 103.

Summary of Review

MP 403 Effluent Limits:

Parameter	*Effluent Limitations*	
	Average Monthly	**Daily Maximum**
Lead (lb/day)	1.39	4.17
Zinc (lb/day)	1.46	4.37
Hex. Chromium (lb/day)	0.107	0.320
Naphthalene (lb/day)	-	0.080
Tetrachlorethylene (lb/day)	-	0.120
Chromium, Total* (mg/l)	0.1	0.3
Nickel* (mg/l)	0.2	0.45
Copper* (mg/l)	0.1	0.3

* These additional parameters and limits are based on Technical Guideline and standards for the Iron and Steel Manufacturing (Volume 1, Point Source Category, Table A-8, page 289). Also, see page 279 for clarification.

Outfall 003:

Outfall 003 is submerged. It not practical to get sample at Outfall 003. Copper, Aluminum Zinc, Lead, Chloroform and WET are WQBEL. Therefore, permittee shall collect 24-hour composite effluent sample at MP 103 and MP 203 and combine both MP 103 and MP 203 flow proportionate samples and analyze for Copper, Zinc and WET testing. For Copper and Zinc permittee can mathematically calculate flow proportionate results of copper & zinc taken at MP 103 and MP 203 and report for Outfall 003.

Outfall 010:

Outfall 010 discharges screen backwash water at river intake pump house. No limitations have been proposed for this outfall. BMP and proper disposal of solids and other debris removed during backwash are proposed. This outfall was constructed during plant construction in 1950 but was never included in the permit.

Summary of Review

CHEMICAL ADDITIVES:

The following chemical additives are approved at various processes. These are the maximum usage rate allowed at stated production rate in the application. These rates must be controlled during changes in productions.

Chemical Additive Name	Outfall /IMP No.	Purpose	Max Usage Rate Lbs/day)
U.S. Steel Galvanized Line			
Chemtreat BL- 1342	103	Boiler Internal Treatment /Scale & Corrosion Control	8645.63
Chemtreat BL- 122	103	Boiler Internal Treatment /Scale & Corrosion Control	2387.10
Fairless Energy Center (Dominion)			
Suez Gengard GN7004	403 / 103	Deposit Control Agent	25.6
Suez Hypersperse MDC 700	403 / 103	Antiscalant / membrane deposit control agent	20
ICL Perf. Trisodium Phosphate	403 / 103	pH Control/industrial cleaner	40
Univar Aluminum Hydroxide	403 / 103	pH Control	230
Suez AZ8104	403 / 103	Corrosion Inhibitor	167.8
Suez FloGard MS6222	403 / 103	Corrosion Inhibitor	25.6
Suez Ferroquest FQ7101	403 / 103	Deposit Control Agent	700
Suez Spectrus NX1100	403 / 103	Biocide	215
Depositrol PY5200	403 / 103	Deposit Control Agent	18

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: MMA NPDES Permit No.: PA0245399 Outfall No.: 003

Evaluation Type: Wastewater Description: IW

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
3.913	180	7.8						

					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											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		319									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		64.3									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L		77.8									
	Total Cadmium	µg/L	<	0.15									
	Total Chromium (III)	µg/L	<	5									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	1									
	Total Copper	mg/L	<	9.9									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L	<	22.8									
	Total Iron	µg/L		578									
	Total Lead	µg/L	<	3									
	Total Manganese	µg/L		73.7									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L	<	10									
	Total Phenols (Phenolics) (PWS)	µg/L	<	200									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.17									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	mg/L	<	17.13									
	Total Molybdenum	µg/L	<	15.1									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L	<	1									
	Bromoform	µg/L	<	1									
	Carbon Tetrachloride	µg/L	<	1									

Group 3	Chlorobenzene	µg/L	<	1									
	Chlorodibromomethane	µg/L	<	1									
	Chloroethane	µg/L	<	1									
	2-Chloroethyl Vinyl Ether	µg/L	<	1									
	Chloroform	µg/L	<	4									
	Dichlorobromomethane	µg/L	<	1									
	1,1-Dichloroethane	µg/L	<	1									
	1,2-Dichloroethane	µg/L	<	1									
	1,1-Dichloroethylene	µg/L	<	1									
	1,2-Dichloropropane	µg/L	<	1									
	1,3-Dichloropropylene	µg/L	<	0.1									
	1,4-Dioxane	µg/L	<	1									
	Ethylbenzene	µg/L	<	1									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	1									
	Methylene Chloride	µg/L	<	1									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.05									
	Tetrachloroethylene	µg/L	<	1									
	Toluene	µg/L	<	1									
	1,2-trans-Dichloroethylene	µg/L	<	1									
	1,1,1-Trichloroethane	µg/L	<	1									
	1,1,2-Trichloroethane	µg/L	<	1									
	Trichloroethylene	µg/L	<	1									
	Vinyl Chloride	µg/L	<	0.3									
Group 4	2-Chlorophenol	µg/L	<	5									
	2,4-Dichlorophenol	µg/L	<	5									
	2,4-Dimethylphenol	µg/L	<	5									
	4,6-Dinitro-o-Cresol	µg/L	<	10									
	2,4-Dinitrophenol	µg/L	<	10									
	2-Nitrophenol	µg/L	<	5									
	4-Nitrophenol	µg/L	<	5									
	p-Chloro-m-Cresol	µg/L	<	5									
	Pentachlorophenol	µg/L	<	10									
	Phenol	µg/L	<	1									
	2,4,6-Trichlorophenol	µg/L	<	5									
Group 5	Acenaphthene	µg/L	<	5									
	Acenaphthylene	µg/L	<	5									
	Anthracene	µg/L	<	5									
	Benzidine	µg/L	<	5									
	Benzo(a)Anthracene	µg/L	<	0.2									
	Benzo(a)Pyrene	µg/L	<	0.2									
	3,4-Benzofluoranthene	µg/L	<	0.08									
	Benzo(ghi)Perylene	µg/L	<	5									
	Benzo(k)Fluoranthene	µg/L	<	0.1									
	Bis(2-Chloroethoxy)Methane	µg/L	<	5									
	Bis(2-Chloroethyl)Ether	µg/L	<	5									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	5									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5									
	4-Bromophenyl Phenyl Ether	µg/L	<	5									
	Butyl Benzyl Phthalate	µg/L	<	5									
	2-Chloronaphthalene	µg/L	<	5									
	4-Chlorophenyl Phenyl Ether	µg/L	<	5									
	Chrysene	µg/L	<	0.2									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.1									
	1,2-Dichlorobenzene	µg/L	<	5									
	1,3-Dichlorobenzene	µg/L	<	0.1									
	1,4-Dichlorobenzene	µg/L	<	5									
	3,3-Dichlorobenzidine	µg/L	<	5									
	Diethyl Phthalate	µg/L	<	5									
	Dimethyl Phthalate	µg/L	<	5									
	Di-n-Butyl Phthalate	µg/L	<	5									
	2,4-Dinitrotoluene	µg/L	<	5									
	2,6-Dinitrotoluene	µg/L	<	5									
	Di-n-Octyl Phthalate	µg/L	<	5									

	1,2-Diphenylhydrazine	µg/L	<	5									
	Fluoranthene	µg/L	<	5									
	Fluorene	µg/L	<	5									
	Hexachlorobenzene	µg/L	<	5									
	Hexachlorobutadiene	µg/L	<	0.2									
	Hexachlorocyclopentadiene	µg/L	<	0.2									
	Hexachloroethane	µg/L	<	2									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.07									
	Isophorone	µg/L	<	5									
	Naphthalene	µg/L	<	5									
	Nitrobenzene	µg/L	<	5									
	n-Nitrosodimethylamine	µg/L	<	5									
	n-Nitrosodi-n-Propylamine	µg/L	<	5									
	n-Nitrosodiphenylamine	µg/L	<	5									
	Phenanthrene	µg/L	<	0.1									
	Pyrene	µg/L	<	5									
	1,2,4-Trichlorobenzene	µg/L	<	0.2									
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											

Summary of Review

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

MMA, NPDES Permit No. PA0245399, Outfall 003

Instructions | Discharge | Stream

Receiving Surface Water Name: **Delaware River**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	000002	127	14	7060			Yes
End of Reach 1	000002	121.9	13.79	7100			Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	127	0.1	26.32									100	7		
End of Reach 1	121.9	0.1	26.39												

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	127														
End of Reach 1	121.9														

Summary of Review

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

MMA, NPDES Permit No. PA0245399, Outfall 003

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.055 Analysis Hardness (mg/l): 164.62 Analysis pH: 7.49

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	929	
Total Antimony	0	0		0	1,100	1,100	1,362	
Total Arsenic	0	0		0	340	340	421	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	25,999	
Total Boron	0	0		0	8,100	8,100	10,028	
Total Cadmium	0	0		0	3.269	3.54	4.38	Chem Translator of 0.923 applied
Total Chromium (III)	0	0		0	857.018	2,712	3,358	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	20.2	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	118	
Total Copper	0	0		0	21.495	22.4	27.7	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	110.625	154	191	Chem Translator of 0.718 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	2.04	Chem Translator of 0.85 applied
Total Nickel	0	0		0	713.847	715	886	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	7.582	8.92	11.0	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	80.5	
Total Zinc	0	0		0	178.763	183	226	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.71	
Acrylonitrile	0	0		0	650	650	805	
Benzene	0	0		0	640	640	792	
Bromoform	0	0		0	1,800	1,800	2,228	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,467	
Chlorobenzene	0	0		0	1,200	1,200	1,486	

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Summary of Review

Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	22,285	
Chloroform	0	0		0	1,900	1,900	2,352	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	18,571	
1,1-Dichloroethylene	0	0		0	7,500	7,500	9,285	
1,2-Dichloropropane	0	0		0	11,000	11,000	13,618	
1,3-Dichloropropylene	0	0		0	310	310	384	
Ethylbenzene	0	0		0	2,900	2,900	3,590	
Methyl Bromide	0	0		0	550	550	681	
Methyl Chloride	0	0		0	28,000	28,000	34,665	
Methylene Chloride	0	0		0	12,000	12,000	14,856	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,238	
Tetrachloroethylene	0	0		0	700	700	867	
Toluene	0	0		0	1,700	1,700	2,105	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	8,419	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,714	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	4,209	
Trichloroethylene	0	0		0	2,300	2,300	2,847	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	693	
2,4-Dichlorophenol	0	0		0	1,700	1,700	2,105	
2,4-Dimethylphenol	0	0		0	660	660	817	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	99.0	
2,4-Dinitrophenol	0	0		0	660	660	817	
2-Nitrophenol	0	0		0	8,000	8,000	9,904	
4-Nitrophenol	0	0		0	2,300	2,300	2,847	
p-Chloro-m-Cresol	0	0		0	160	160	198	
Pentachlorophenol	0	0		0	14.338	14.3	17.8	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	569	
Acenaphthene	0	0		0	83	83.0	103	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	371	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.62	
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	37,141	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,571	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	334	
Butyl Benzyl Phthalate	0	0		0	140	140	173	
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	1,015	
1,3-Dichlorobenzene	0	0		0	350	350	433	

Summary of Review

1,4-Dichlorobenzene	0	0		0	730	730	904	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,952	
Dimethyl Phthalate	0	0		0	2,500	2,500	3,095	
Di-n-Butyl Phthalate	0	0		0	110	110	136	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,981	
2,6-Dinitrotoluene	0	0		0	990	990	1,226	
1,2-Diphenylhydrazine	0	0		0	15	15.0	18.6	
Fluoranthene	0	0		0	200	200	248	
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	12.4	
Hexachlorocyclopentadiene	0	0		0	5	5.0	6.19	
Hexachloroethane	0	0		0	60	60.0	74.3	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	12,380	
Naphthalene	0	0		0	140	140	173	
Nitrobenzene	0	0		0	4,000	4,000	4,952	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	21,047	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	371	
Phenanthrene	0	0		0	5	5.0	6.19	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	161	

☑ ***CFC*** CCT (min): 720 PMF: 0.379 Analysis Hardness (mg/l): 130.2 Analysis pH: 7.17

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	583	
Total Arsenic	0	0		0	150	150	397	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	10,862	
Total Boron	0	0		0	1,600	1,600	4,239	
Total Cadmium	0	0		0	0.295	0.33	0.87	Chem Translator of 0.898 applied
Total Chromium (III)	0	0		0	91.995	107	283	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	27.5	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	50.3	
Total Copper	0	0		0	11.221	11.7	31.0	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	8,022	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.350	4.45	11.8	Chem Translator of 0.753 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.4	Chem Translator of 0.85 applied
Total Nickel	0	0		0	65.015	65.2	173	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	

Summary of Review

Total Selenium	0	0		0	4.600	4.99	13.2	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	34.4	
Total Zinc	0	0		0	147.740	150	397	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	7.95	
Acrylonitrile	0	0		0	130	130	344	
Benzene	0	0		0	130	130	344	
Bromoform	0	0		0	370	370	980	
Carbon Tetrachloride	0	0		0	560	560	1,484	
Chlorobenzene	0	0		0	240	240	636	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	9,272	
Chloroform	0	0		0	390	390	1,033	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	8,212	
1,1-Dichloroethylene	0	0		0	1,500	1,500	3,974	
1,2-Dichloropropane	0	0		0	2,200	2,200	5,828	
1,3-Dichloropropylene	0	0		0	61	61.0	162	
Ethylbenzene	0	0		0	580	580	1,537	
Methyl Bromide	0	0		0	110	110	291	
Methyl Chloride	0	0		0	5,500	5,500	14,571	
Methylene Chloride	0	0		0	2,400	2,400	6,358	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	556	
Tetrachloroethylene	0	0		0	140	140	371	
Toluene	0	0		0	330	330	874	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	3,709	
1,1,1-Trichloroethane	0	0		0	610	610	1,616	
1,1,2-Trichloroethane	0	0		0	680	680	1,801	
Trichloroethylene	0	0		0	450	450	1,192	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	291	
2,4-Dichlorophenol	0	0		0	340	340	901	
2,4-Dimethylphenol	0	0		0	130	130	344	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	42.4	
2,4-Dinitrophenol	0	0		0	130	130	344	
2-Nitrophenol	0	0		0	1,600	1,600	4,239	
4-Nitrophenol	0	0		0	470	470	1,245	
p-Chloro-m-Cresol	0	0		0	500	500	1,325	
Pentachlorophenol	0	0		0	11.000	11.0	29.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	241	
Acenaphthene	0	0		0	17	17.0	45.0	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	156	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.26	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	

Summary of Review

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	15,895	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,411	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	143	
Butyl Benzyl Phthalate	0	0		0	35	35.0	92.7	
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	424	
1,3-Dichlorobenzene	0	0		0	69	69.0	183	
1,4-Dichlorobenzene	0	0		0	150	150	397	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,119	
Dimethyl Phthalate	0	0		0	500	500	1,325	
Di-n-Butyl Phthalate	0	0		0	21	21.0	55.6	
2,4-Dinitrotoluene	0	0		0	320	320	848	
2,6-Dinitrotoluene	0	0		0	200	200	530	
1,2-Diphenylhydrazine	0	0		0	3	3.0	7.95	
Fluoranthene	0	0		0	40	40.0	106	
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	5.3	
Hexachlorocyclopentadiene	0	0		0	1	1.0	2.65	
Hexachloroethane	0	0		0	12	12.0	31.8	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	5,563	
Naphthalene	0	0		0	43	43.0	114	
Nitrobenzene	0	0		0	810	810	2,146	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	9,007	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	156	
Phenanthrene	0	0		0	1	1.0	2.65	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	68.9	

☑ ***THH*** CCT (min): 720 PMF: 0.379 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	14.8	
Total Arsenic	0	0		0	10	10.0	26.5	
Total Barium	0	0		0	2,400	2,400	6,358	

Summary of Review

Total Boron	0	0		0	3,100	3,100	8,212	
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	795	
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	2,649	
Total Mercury	0	0		0	0.050	0.05	0.13	
Total Nickel	0	0		0	610	610	1,616	
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	0.64	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	7.95	
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	265	
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	15.1	
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	87.4	
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	180	
Methyl Bromide	0	0		0	100	100.0	265	
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	151	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	265	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	26,492	
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	79.5	
2,4-Dichlorophenol	0	0		0	10	10.0	26.5	
2,4-Dimethylphenol	0	0		0	100	100.0	265	

Summary of Review

4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5.3	
2,4-Dinitrophenol	0	0		0	10	10.0	26.5	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	10,597	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	185	
Anthracene	0	0		0	300	300	795	
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	530	
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	2,119	
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	2,649	
1,3-Dichlorobenzene	0	0		0	7	7.0	18.5	
1,4-Dichlorobenzene	0	0		0	300	300	795	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,590	
Dimethyl Phthalate	0	0		0	2,000	2,000	5,298	
Di-n-Butyl Phthalate	0	0		0	20	20.0	53.0	
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	53.0	
Fluorene	0	0		0	50	50.0	132	
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	10.6	
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	90.1	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	26.5	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	

Summary of Review

Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	53.0	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.19	

☑ ***CRL*** CCT (min): 720 PMF: 0.518 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.72	
Benzene	0	0		0	0.58	0.58	7.01	
Bromoform	0	0		0	7	7.0	84.6	
Carbon Tetrachloride	0	0		0	0.4	0.4	4.83	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	9.66	
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	11.5	
1,2-Dichloroethane	0	0		0	9.9	9.9	120	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	10.9	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3.26	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	

Summary of Review

Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	242	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.42	
Tetrachloroethylene	0	0		0	10	10.0	121	
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	6.64	
Trichloroethylene	0	0		0	0.6	0.6	7.25	
Vinyl Chloride	0	0		0	0.02	0.02	0.24	
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	0.36	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	18.1	
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	0.001	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.36	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3.87	
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	1.45	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.001	
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	0.6	
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	0.6	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.6	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.36	

Summary of Review

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	0.001	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.12	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1.21	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.012	
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	0.008	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.06	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	39.9	
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 Copper	0.73	0.9	0.022	0.028	0.028	mg/L	0.022	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	11.8	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	5.97	7.38	0.18	0.23	0.23	mg/L	0.18	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Chloroform	Report	Report	Report	Report	Report	µg/L	15.1	THH	Discharge Conc > 25% WQBEL (no RP)

Summary of Review

☑ ***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 Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	6,358	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,239	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	283	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	N/A	N/A	Discharge Conc < TQL
Total Cobalt	50.3	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	795	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	8,022	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	2,649	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.13	µg/L	Discharge Conc < TQL
Total Nickel	173	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	13.2	µg/L	Discharge Conc < TQL
Total Silver	8.92	µg/L	Discharge Conc < TQL
Total Thallium	0.64	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.72	µg/L	Discharge Conc < TQL
Benzene	7.01	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	84.6	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	4.83	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	265	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	9.66	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	9,272	µg/L	Discharge Conc < TQL
Dichlorobromomethane	11.5	µg/L	Discharge Conc ≤ 25% WQBEL

Summary of Review

1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	120	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	87.4	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	10.9	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	3.26	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	180	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	265	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	14,571	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	242	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	2.42	µg/L	Discharge Conc < TQL
Tetrachloroethylene	121	µg/L	Discharge Conc ≤ 25% WQBEL
Toluene	151	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	265	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	1,616	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	6.64	µg/L	Discharge Conc ≤ 25% WQBEL
Trichloroethylene	7.25	µg/L	Discharge Conc ≤ 25% WQBEL
Vinyl Chloride	0.24	µg/L	Discharge Conc < TQL
2-Chlorophenol	79.5	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	26.5	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	265	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5.3	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	26.5	µg/L	Discharge Conc < TQL
2-Nitrophenol	4,239	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,245	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.36	µg/L	Discharge Conc < TQL
Phenol	10,597	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	18.1	µg/L	Discharge Conc < TQL
Acenaphthene	45.0	µg/L	Discharge Conc ≤ 25% WQBEL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	795	µg/L	Discharge Conc ≤ 25% WQBEL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.012	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.012	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.12	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.36	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	530	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	3.87	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	143	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.26	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	2,119	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS

Summary of Review

Chrysene	1.45	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.001	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	424	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichlorobenzene	18.5	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	397	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	0.6	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,590	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	1,325	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	53.0	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.6	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.6	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.36	µg/L	Discharge Conc < TQL
Fluoranthene	53.0	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	132	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorobenzene	0.001	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.12	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	2.65	µg/L	Discharge Conc < TQL
Hexachloroethane	1.21	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.012	µg/L	Discharge Conc < TQL
Isophorone	90.1	µg/L	Discharge Conc < TQL
Naphthalene	114	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	26.5	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.008	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.06	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	39.9	µg/L	Discharge Conc < TQL
Phenanthrene	2.65	µg/L	Discharge Conc < TQL
Pyrene	53.0	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	0.19	µg/L	Discharge Conc < TQL

Summary of Review
Whole Effluent Toxicity (WET): For Outfall 003: Since MMA is now POTW, all WQBELs limits are applicable at the point of discharge so in this case WET tests limits are applied at Outfall 003. Since Outfall 003 is submerged, WET test shall be conducted on the combined flow proportionate effluent from MP103 and MP203 The following evaluations were conducted on the WET tests performed by USS for MP103 effluent as an industrial facility. Which will change in this renewal for MMA as POTW. The evaluation was done to evaluate USS permit compliance and for FYI. For MMA permit, with combined flow, will have different dilution factor, calculated below and included in the permit for future testing. The below evaluation is for USs and for FYI:

Summary of Review

WET Summary and Evaluation

Facility Name	US Steel Fairless Hills Facility
Permit No.	PA0013463
Design Flow (MGD)	3.75
Q_{7-10} Flow (cfs)	25
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/24/14	3/2/15	6/26/17	4/7/18
Ceriodaphnia	Survival	Pass	Pass	Pass	Pass

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/24/14	3/2/15	6/26/17	4/17/18
Ceriodaphnia	Reproduction	Pass	Pass	Pass	Pass

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/24/14	8/25/15	3/8/16	10/4/16
Pimephales	Survival	Pass	Pass	Pass	Pass

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/25/14	3/3/15	8/25/16	10/4/16
Pimephales	Growth	Pass	Pass	Pass	Pass

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**19** % Effluent
Dilution Series	**5, 10, 19, 60, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

FOR MMA permit for future Wet testing:

The dilution series for MMA are calculated as follows:

MMA Permit No. PA0245399
Q Discharge: 3.75 (for Mp103) + 0.163 (MP 203) = 3.913 MGD
Q 710 + 25 CFS (1% of Q7-10 of Trenton gauge which is 2500 CFS)
PFMa: 1
PFMc: 1

Permit recommendations:

Summary of Review

Test Type: Chronic
TIWC; 19%
Dilution Series: 5, 10, 19, 60, 100% of effluent.
Permit limit: No

This permit requires annual reporting for Chronic Toxicity with dilution series of 5, 10, 19, 60, and 100 % effluent. therefore, annual reporting for Chronic Toxicity is required for Outfall003 which is consistent with SOP.

Since the Outfall 003 is submerged and discharge point is not accessible, permittee is required to take 24 hour composite effluent sample at MP 103 and MP 203 and combined to one flow proportionate sample for WET test analysis, which shall be reported for Outfall 003.

PCBs Monitoring and PMP Plan:

In accordance with the U.S. EPA, Region 2 and 3, TMDL for PCBs for Zones 2-5 for the Tidal Delaware River, PCBs monitoring has been included for Outfall MP 103 and MP 203 as per DRBC Docket No. D-1978-068-3.
Permittee must continue to implement PMP to achieve PCBs loading reduction goals.

Act-14 Notifications to Falls Township and Bucks County Commissioners on June 14, 2022.

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.	003	Design Flow (MGD)	4
Latitude	40Âº 8' 16.23"	Longitude	-74Âº 44' 14.15"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG, Sewage Effluent, Stormwater		

Receiving Waters	Delaware River (WWF, MF)	Stream Code	00002
NHD Com ID	25486176	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	2-E	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Delaware River Estuary PCB TMDLs

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

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

Other Comments: Due to tidal conditions at Outfall 003, effluent monitoring is not possible and wastewater that discharges through Outfall 003 is monitored at internal monitoring points MP 103, MP 203, MP 303 and MP 403.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010	Design Flow (MGD)	0.01
Latitude	40Âº 8' 16.23"	Longitude	-74Âº 44' 14.15"
Quad Name		Quad Code	
Wastewater Description:	Screen backwash discharge from intake water pump house		

Receiving Waters	Delaware River (WWF, MF)	Stream Code	00002
NHD Com ID	25486176	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	2-E	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Delaware River Estuary PCB TMDLs

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

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	MP 103	Design Flow (MGD)	3.75
Latitude	40Âº 8' 15.76"	Longitude	-74Âº 44' 14.88"
Quad Name		Quad Code	

Wastewater Description: FMTP Effluent, Potable filtration plant rinse and blowdown water, cooling tower blow down from Fairless Energy, Basement sump water from powerhouse (formerly Exelon)

Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486176	RMI	127.0300
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	2-E	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Delaware River Estuary PCB TMDLs

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

Nearest Downstream Public Water Supply Intake

PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	MP 203	Design Flow (MGD)	0.163
Latitude	40Âº 8' 10.08"	Longitude	-74Âº 44' 24.51"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486176	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	2-E	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Delaware River Estuary PCB TMDLs

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

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	MP 403	Design Flow (MGD)	0.856
Latitude	40Âº 8' 27.42"	Longitude	-74Âº 44' 19.62"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG		

Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486174	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	2-E	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Delaware River Estuary PCB TMDLs

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

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

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 103, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.31	XXX	0.5	1/day	Grab
Color (Pt-Co Units)	XXX	XXX	XXX	XXX	XXX	100	1/week	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	XXX	110	1/day	I-S
BOD5	Report	Report	XXX	7.5	Report	15	1/week	24-Hr Composite
BOD5 Intake	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
BOD5 % Removal	88.5 Min Mo Avg	XXX	XXX	XXX	XXX	XXX	1/week	Calculation
TSS	486	1116	XXX	30.0	Report	38.5	1/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1100	2200	2750	2/month	24-Hr Composite
Oil and Grease	247	463	XXX	Report	Report	19.7	1/week	Grab
Ammonia	Report Avg Qrtly	XXX	XXX	20.0 Avg Qrtly	XXX	40	1/quarter	24-Hr Composite
Total Aluminum	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Total Chromium	4.06	5.49	XXX	Report	Report	0.32	1/week	24-Hr Composite

Outfall 103, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Zinc	18.23	21.17	XXX	Report	Report	1.45	1/week	24-Hr Composite
Total Lead	Report	Report	XXX	Report	Report	XXX	1/quarter	24-Hr Composite
Total Copper	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Chloroform	Report	Report	XXX	Report	Report	XXX	1/quarter	24-Hr Composite
PCBs (Dry Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 203, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
Color (Pt-Co Units)	XXX	XXX	XXX	XXX	XXX	Report	1/month	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
BOD5	34	XXX	XXX	25	40 Wkly Av.	50	1/week	24-Hr Composite
BOD5 % Removal (%) Percent Removal	88.5	XXX	XXX	XXX	XXX	XXX	1/week	Calculation
TSS	41	XXX	XXX	30	45 Wkly Av.	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	Report	Report	XXX	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia	27	XXX	XXX	20.0	XXX	40	1/month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Outfall 203 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Copper	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Total Lead	Report	Report	XXX	Report	Report	XXX	2/quarter	24-Hr Composite
Total Aluminum	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
Chloroform	Report	Report	XXX	Report	Report	XXX	1/quarter	24-Hr Composite
PCBs (Dry Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 403, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Measured
Hexavalent Chromium	0.107	0.320	XXX	Report	Report	0.037	1/week	24-Hr Composite
Total Chromium	Report	Report	XXX	0.1	0.3	0.3	1/week	24-Hr Composite
Total Copper	Report	Report	XXX	0.1	0.3	0.3	1/week	24-Hr Composite
Total Lead	1.39	4.17	XXX	Report	Report	0.49	1/week	24-Hr Composite
Total Nickel	Report	Report	XXX	0.2	0.45	0.5	1/week	24-Hr Composite
Total Zinc	1.46	4.37	XXX	Report	Report	0.51	1/week	24-Hr Composite
Naphthalene	XXX	0.080	XXX	Report	Report	0.013	1/week	Grab
Tetrachloroethylene	XXX	0.120	XXX	XXX	Report	0.02	1/week	Grab

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ

Outfall 003, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Toxicity, Chronic - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Pimephales Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Pimephales Growth (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Total Copper	0.73	0.9	XXX	0.022	0.028	0.028	2/month	Calculations
Total Aluminum	Report	Report	XXX	Report	Report	XXX	2/month	Calculations
Total Zinc	5.97	7.38	XXX	0.18	0.23	0.23	2/month	Calculations
Total Lead	Av. Qrtly Report	Report	XXX	Av. Qrtly Report	Report	XXX	1/quartet	Calculations
Chloroform	Av. Qrtly Report	Report	XXX	Av. Qrtly Report	Report	XXX	1/quarter	Calculations

Copper, Zinc and WET are WQBEL, shall be applied at point of discharge. However, Outfall 003 is submerged, is not practical to get sample at Outfall 003, Therefore, Permittee shall collect 24-hour composite effluent sample at MP 103 and MP 203, and combine both MP 103 and MP 203 flow proportionate samples and analyze for Copper, Zinc and WET testing.

Following is the list of current users of Potable water and STP Customers:

STP Customer	Meter	Measured or expected av. GPD
A & A Machinery Moving Inc.	Main Meter – 2 “ Potable	351
Accu Fire Fabrication	Main Meter – 2 “ Potable	956
Air Liquide America Corp.	Main Meter – 2 “ Potable	1132
Antiquity Stone	Main Meter – 3/4 “ Potable	39
Arley Wholesale Inc.	Main Meter – 2 “ Potable	318
Earle Companies	Main Meter – 1 “ Potable	915
CB Richard Ellis	Main Meter – 2 “ Potable	704
Clean Earth of SE PA	Main Meter – 1 “ Potable	102
Clean Earth of SE PA	Building “B” – 1 ½ Service	6500
Gelest (progress dr.)	Main Meter – 2 “ Potable	96
Gelest Realty Inc.	Main Meter – 4 “ Potable	897
H.B. Fuller now ALPatterson(ii)	Main Meter – 1 ½ “ Potable	28
John Feher, Inc.	Main Meter – 2 “ Potable	219
LTL Color Compounders	Main Meter – 4 “ Potable	8068
Maran Equipment now A&A (II)	Main Meter – 3/4 “ Potable	15
Mealey’s Furniture (vacant)	Main Meter – 4 “ Potable	82
Nexeo	Main Meter – 2 “ Potable	250 estimate
Penn Fab	Potable	250 estimate
PEXCO (Bunzl)	Main Meter – 2 “ Potable	1315
Phoenix	Main Meter – 1 ½ “Potable	315
Phoenix	Building – “2” Potable	50 estimate
Praxair	Main Meter – 2 “ Potable	126
Praxair	Building “A” – 2” Potable	500
Praxair	Building “B” – 2” Potable	450
Reber Corporation	Main Meter – 3/4 “ Potable	164
Reed Minerals Inc.	Main Meter – 1 “ Potable	110
Univar (BCS)	Main Meter – 2 “ Potable	578
Univar (Chemcentral)	Main Meter – 2 “ Potable	1587
Univar USA Inc.	Main Meter – 4 “ Potable	3499
Universal Wire Cloth Co.	Main Meter – 3/4 “ Potable	288
Waste Management of PA	Main Meter – 2 “ Potable	153
Waste Management of PA	Service	10000 estimate

Current list of Users:

Customer	Meter	Measured or expected av. GPD
A. L. Patterson	Potable	333 estimate
Abington Reldan Recycling	Potable	2667 estimate
AirGas (Spring 2020) now (late winter 2021)	Potable	150000 estimate
CSC Sugar	Potable	650
Fairless Energy, LLC (Dominion)	Potable	104
Fairless Energy, LLC (Dominion)	service	5160000
Fairless Hills Generation (Exelon)(shutdown)	Potable	0
Fairless Hills Generation (Exelon)(shutdown)	Service	0
Fairless Hills Generation (Exelon)(shutdown)	Gravity	0
Gamesa Wind, USA	Potable	433
GMA Garnet	Potable	667
GMA Garnet	Service	150000
HiOssen	Potable	2333 estimate
Keystone NAP	Potable	0
Kinder Morgan (Port Operator)	Potable	333 estimate
Kinder Morgan (Port Operator)	Service	15000
Liberty Coating	Potable	587
MLH (A.E. Poly porperty)	Potable	633 estimate
Morton Salt Company	Potable	250
Power Cool	Potable	150 estimate
Sika Corporation	Potable	9555
Toll Industries	Potable	433
Mazza Iron	Potable Main Meter – 2”	333 estimate
Covanta	Potable	1000 estimate
Potable Only		
SIMS Metal	Potable	333
SIMS Metal	Service	3600

Samax Enterprises Inc.	Potable Main Meter – 2”	732
Brightsmith	Potable	1100
Brightsmith	Service	30000

Clean Water Act § 316(b) – Cooling Water Intake Structures:

On August 15, 2014, EPA promulgated Clean Water Act Section 316(b) regulations applicable to cooling water intake structures. The regulations established best technology available (BTA) standards to reduce impingement mortality and entrainment of all life stages of fish and shellfish at existing power generating and manufacturing facilities. The Final Rule took effect on October 14, 2014. Regulations implementing the 2014 Final Rule (and the previously promulgated Phase I Rule) are provided in 40 CFR Part 125, Subparts I and J for new facilities and existing facilities, respectively. Associated NPDES permit application requirements for facilities with cooling water intake structures are provided in 40 CFR Part 122, Subpart B – Permit Application and Special NPDES Program Requirements (§ 122.21(r)).

Applicability Criteria for Existing Facilities

As an existing facility, (previously U.S. Steel Fairless Hills Facility (Fairless) and now MMA) falls under 40 CFR part 125, Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act (§§ 125.90 – 125.99). Pursuant to the applicability criteria given by § 125.91(a), MMA KTC Facility would be subject to the requirements of §§ 125.94 – 125.99 if:

(1) The facility is a point source.

(2) The facility uses or proposes to use one or more cooling water intake structures with a cumulative design intake flow (DIF) of greater than 2 million gallons per day (mgd) to withdraw water from waters of the United States; and

(3) Twenty-five percent or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes.

Fairless is a finishing facility where cold-rolled steel products are finished into galvanized sheets. Previously, U.S. Steel owned and operated a cooling water intake structure (CWIS) and sold water to multiple users within the Keystone Industrial Port Complex (former U.S. Steel Fairless Works). Various uses of the water included non-contact cooling water at one power plant (Fairless Energy owned and operated by Starwood Energy Group) and Fairless. The Fairless Hills Generation Station, owned by Exelon Generation Company, LLC was also a user of non-contact cooling water but ceased operations in 2020. Since Exelon ceased operations the average actual intake flow (AIF) is approximately 8.95 MGD, of which approximately 82 to 90% is estimated to be used for cooling purposes at Fairless and Fairless Energy. The CWIS is subject to BTA requirements under the existing facilities rule.

The updated information regarding the CWIS explained that U.S. Steel sold the real estate assets and onsite utilities (including the CWIS) to NP Falls Township Industrial, LLC (Northpoint). After the sale, a majority of the water infrastructure assets were transferred to Morrisville Municipal Authority (MMA), who now owns and operates the CWIS.

The CWIS draws water from the Delaware River using a shoreline intake structure and two subaqueous intake structures located about 300 ft diagonally offshore of the shoreline intake. Typical operation is for withdrawal through all three intake structures concurrently. The subaqueous intake structures are completely submerged

at low water conditions and are designed as boxes with grating on all sides and the top. The bottom of each box is attached to a concrete structure. Water is suctioned through the grating to 72" diameter pipes which lead to the upper level forebay of the shoreline intake. The shoreline intake includes 5 intake bays that are in operation. Bays 1,2, 4 and 5 have traveling water screen while bay 3 does not. The four traveling water screens have 12-gauge wire with 3/8' diagonal openings. Through screen velocities under the various operating conditions presented in the application exceed 0.5 fps at both DIF and AIF.

Table 5-1: Calculated Through-Screen and Through-Bar Velocities for Intake Structures

Through-Screen Velocity (fps)					
	Screens 1 and 2	Screen 4	Screen 5	Subaqueous Crib (1 operating)	Subaqueous Crib (2 operating)
DIF	1.55	1.52	1.41	3.81	1.90
AIF – large Pump #1, #2 Operation	0.52	N/A	N/A	0.78	0.39
AIF – small Pump #5a or #5b Operation	N/A	0.14	0.55	0.34	0.17
AIF – large Pump #4 Operation	N/A	1.24	0.31	0.78	0.39

fps – feet per second

Impingement mortality BTA does not currently exist for the CWIS. Considering the decrease in flow due to a facility closure and the changes in ownership, impingement mortality BTA is best accomplished by achieving a 0.5 fps actual through screen velocity. BTA for entrainment already exists for the facility based on the required considerations discussed below.

1.) Numbers and types of organisms entrained

The facility conducted entrainment sampling between February - September 2006 and more recently between March – May 2017. Peak collection for both time periods occurred during April and May. Entrainment during the 2005 – 2006 sampling was dominated by white perch and cyprinid eggs, and American shad larvae. Federally endangered shortnose sturgeon larvae were collected however this was described as an anomaly resulting from an unseasonably high-water event during the sampling.

Table 4-9: Fairless Entrainment by Intake (Feb – Sep 2006)

Taxon	Common Intake		Deep Intake		Total Entrainment	
	Total Raw Number	Relative Abundance (%)	Total Raw Number	Relative Abundance (%)	Total Raw Number	Relative Abundance (%)
Eggs						
Cyprinidae	345	68.7	335	41.8	680	52.2
White Perch	140	27.9	452	56.4	592	45.4
Lepomis sp.	2	0.4	5	0.6	7	0.5
Common Carp	-	-	6	0.7	6	0.5
American Shad	4	0.8	1	0.1	5	0.4
Clupeidae sp.	5	1.0	-	-	5	0.4
Striped Bass	3	0.6	1	0.1	4	0.3
Unidentified	3	0.6	1	0.1	4	0.3
Total	**502**	**100**	**801**	**100**	**1,303**	**100**
Larvae and Older						
American Shad	123	29.9	42	28.4	165	29.5
Walleye	76	18.4	-	-	76	13.6
Cyprinidae sp.	69	16.7	3	2.0	72	12.9
Tessellated Darter	28	6.8	16	10.8	44	7.9
Unidentified	18	4.4	22	14.9	40	7.1
Shortnose Sturgeon	1	0.2	25	16.9	26	4.6
Lamprey sp.	18	4.4	6	4.1	24	4.3
White Sucker	15	3.6	6	4.1	21	3.8
Channel Catfish	8	1.9	9	6.1	17	3.0
American Eel	7	1.7	9	6.1	16	2.9
Lepomis sp.	10	2.4	-	-	10	1.8
Bay Anchovy	8	1.9	-	-	8	1.4
Yellow Perch	8	1.9	-	-	8	1.4
Common Carp	6	1.5	1	0.7	7	1.3
Margined Madtom	3	0.7	4	2.7	7	1.3
Clupeidae sp.	6	1.5	-	-	6	1.1
Hogchoker	2	0.5	3	2.0	5	0.9
Mummichog	3	0.7	-	-	3	0.5
White Perch	1	0.2	1	0.7	2	0.4
Atlantic Menhaden	1	0.2	-	-	1	0.2
Fourspine Stickleback	1	0.2	-	-	1	0.2
Spottail Shiner	-	-	1	0.7	1	0.2
Total	**412**	**100**	**148**	**100**	**560**	**100**

Source: NAI (2008)

The most recent sampling in 2017 purposely coincided with the spawning period of shortnose sturgeon. The majority of fish collected were white perch and Clupeidae sp. eggs. The report specifies that based on eggs size and life history data, the clupeid eggs were most likely gizzard shad, blueback herring, and/or alewife. The majority of larvae collected were dominated my Clupeidae sp. and yellow perch. 66 juvenile American eel were also collected. Fairless concludes that the data suggests that current operations remove less than 0.82% of the ichthyoplankton monthly from the Delaware River based on the proportion of flow withdrawn at AIF and historical flows at Trenton, having negligible impacts on the population. Fairless further concludes that impacts would be minimal on fish populations and occur

mostly to species with low value (Cyprinidae (presumably spottail shiner) and white perch). Installation of closed cycle cooling at the Fairless facility would provide potential reduction in entrainment proportional to the reduction in water usage (26.9% reduction).

Table 4-10: Entrainment Sampling Results at Fairless (Mar 21, 2017 – May 23, 2017)

Taxon	Life Stage	Number	Average Density ($N/100m^3$)	Relative Abundance (%)
American Eel	Juvenile	66	2.74	4.7
Clupeidae sp.	Egg	352	14.61	24.9
	Larvae	124	5.15	8.8
River Herring	Larvae	1	0.04	0.1
Cyprinidae sp.	Egg	4	0.17	0.3
White Sucker	Egg	4	0.17	0.3
	Larvae	2	0.08	0.1
Fourspine Stickleback	Egg	1	0.04	0.1
	Adult	1	0.04	0.1
White Perch	Egg	662	27.48	46.8
	Larvae	1	0.04	0.1
Black Crappie	Larvae	1	0.04	0.1
Centrarchidae sp.	Egg	2	0.08	0.1
Micropterus sp.	Larvae	1	0.04	0.1
Tessellated Darter	Larvae	9	0.37	0.6
Yellow Perch	Larvae	95	3.94	6.7
Cyprinidae/Catostomidae	Egg	1	0.04	0.1
Unidentified	Egg	17	0.71	1.2
	Larvae	72	2.99	5.1
Total	**Eggs**	**1,043**	**43.30**	**73.7**
	Larvae	**306**	**12.70**	**21.6**
	Juveniles	**66**	**2.74**	**4.7**
	Adult	**1**	**0.04**	**0.1**
	All	**1,416**	**58.79**	**100**

Source: AECOM (2017)

2.) Impact of changes in particulate emission or other pollutants

Emissions would result from truck traffic and excavation during construction of cooling towers or other control technologies as well as from internal combustion engines associated with compressors and other mobile construction equipment. Operation of cooling towers will create drift and air pollutant emissions. Larger drift droplets will deposit near the cooling towers. Distance of other drift particles will vary. The additional electrical power needed to operate screens, cooling towers, or other controls would result in added grid-wide emissions; however, this increase is expected to be minor.

3.) Land availability

Fairless says that use of alternative water sources is infeasible in part due to the considerable land acquisition and right-of-ways required. Also, installation of narrow-slot wedge wire cylindrical screens could require US Army Corps permits and a Submerged Lands License. Land availability for installation of a closed cycle system at Fairless is not discussed and is presumed to be available.

4.) Remaining useful plant life

Permit application materials do not include an estimation of the remaining useful plant life.

5.) Social Benefits and Cost of Technologies

General discussion is provided in the permit application on how different technologies would reduce biological impact. Specifically, it is mentioned that a retrofit of the Fairless system to close-cycle cooling would reduce total cooling water flow by approximately 26.9% and reduce entrainment proportionally. These reductions in impact are not translated into specific social benefits. Fairless presents that the data suggests current operations have negligible impacts on fish populations and any entrainment reduction technology would provide only marginal protection of the overall fish community. The cost for implementing closed cycle at Fairless is estimated at approximately $0.73 to $1.14 million. The cost of modified Ristroph screens with seasonal fine-mesh overlays and a fish return or narrow-slot wedgewire screens range from less than $10 million to $20 million.

Services Comments

DEP received comments from NOOA Fisheries, Greater Atlantic Region via email 8/19/19 acknowledging that both Atlantic sturgeon and shortnose sturgeon may be in the vicinity of the CWIS. They also added that based on the usage of the best technology available (including screening and intake velocity) they do not expect any interaction between the facility and NMFS-listed species.

Conclusion

As shown by entrainment sampling, current entrainment is minimal and impacting mostly fish species of low value. Requiring installation of other control technologies to reduce fish entrainment is not warranted given the minimal reductions expected. Impingement mortality BTA does not currently exist for the CWIS. Considering the decrease in flow due to a facility closure and the changes in ownership, impingement mortality BTA is best accomplished by achieving a 0.5 fps actual through screen velocity. The compliance schedule to initiate modifications and improvements to meet 0.5 fps actual through screen velocity is included in this permit as below:

Following permit requirement and compliance schedule to achieve 0.5 fps travelling screen velocity is included in the permit.

COOLING WATER INTAKE STRUCTURE(S):

A. Nothing in this permit authorizes a take of endangered or threatened species under the Endangered Species Act.

B. Technology and operational measures currently employed at the cooling water intake structures must be operated in a way that minimizes impingement mortality and entrainment to the fullest extent possible.

C. The location, design, construction, or capacity of the intake structure(s) may not be altered without prior approval of DEP.

D. The permittee shall retain data and other records for any information developed pursuant to Section 316(b) of the Clean Water Act for a minimum of ten years.

E. To meet Best Technology Available (BTA) requirements to minimize adverse impacts from impingement and entrainment the permittee will operate the cooling water intake structure with a maximum through-screen intake velocity (TSV) of 0.5 feet per second (fps) in accordance with 40 CFR §125.94(c)(3). In addition, the permittee will monitor the velocity at the screen at a minimum frequency of daily. In lieu of velocity monitoring at the screen face, the permittee may calculate the through-screen velocity using water flow, water depth, and the screen open areas. The intake screen velocity monitoring results shall be submitted on the Cooling Water Intake Monitoring Supplemental Report as an attachment to monthly DMRs. To comply with the BTA requirements, the permittee shall implement the following schedule:

1. As soon as practicable but no later than twelve (12) months after the effective date of the permit, permittee shall complete the design, apply for permits (if any) needed form various agencies for the project of BTA to meet the 0.5 fps TSV. Department should be notified when this task is completed.

2. As soon as practicable but no later than twenty-four (24) months after the effective date of the permit, acquired all permits approval needed (if any) from various governmental agencies for the project.

3. As soon as practicable but no later than thirty (30) months after the effective date of the permit, award the project and start construction of the project.

4. Submit the progress report on the project construction thirty-Six (36) months after the effective date of the permit, award the project and start construction of the project.

5. Complete construction withing 48 months of permit effective date.

6. As soon as practicable but no later than sixty (60) months after the effective date of the permit, achieve compliance with the 0.5 fps TSV.

F. If DEP determines the methods to meet impingement and entrainment BTA requirements are not sufficient, the permittee will employ additional controls to reduce adverse impacts from impingement and entrainment as outlined by DEP.

G. The permittee will submit an annual certification statement to the Department Southeast Regional Office by January 28 of each year. The annual certification shall describe any substantial modifications to the operation of any unit at the facility that impacts cooling water withdrawals or operation of the cooling water intake structures. If no significant changes, the certification will show that no such changes have occurred.

H. If the permittee wishes to submit a request for a reduction in permit application requirements as outlined in 40 CFR §125.95(c), it must be submitted to DEP at least two years and six months before this permit expires.

I. The permittee must submit applicable information in 40 CFR § 122.21(r) at least 180 days prior to the planned commencement of cooling water withdrawals associated with the operation of a new unit (as defined in 40 CFR § 125.92(u)).