pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0013463**
Facility Type	**Industrial**	APS ID	**994490**
Major / Minor	**Major**	Authorization ID	**1275435**

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

Applicant and Facility Information

Applicant Name	**U. S. Steel Corporation**	Facility Name	**U. S. Steel Fairless Hills Facility**
Applicant Address	1 Ben Fairless Drive	Facility Address	1 Ben Fairless Drive
	Fairless Hills, PA 19030-5012		Fairless Hills, PA 19030
Applicant Contact	Brian Lasko	Facility Contact	Brian Lasko
Applicant Phone	(412) 433-5917	Facility Phone	(215) 736-4063
Client ID	80062	Site ID	260845
SIC Code	3312	Municipality	Falls Township
SIC Description	Manufacturing - Blast Furnaces and Steel Mills	County	Bucks
Date Application Received	May 28, 2019	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility

Purpose of Application: Permit Renewal.

Summary of Review

The applicant requests renewal of the National Pollutant Discharge Elimination System (NPDES) permit to discharge treated industrial waste, treated sewage and stormwater from the facility into Delaware River.

The current NPDES permit approves the discharge of process wastewater, noncontact cooling water, sewage wastewater, and stormwater from the USS facility located in Falls Township, Bucks County. The treated wastewater will be discharged through several existing outfalls to the Delaware Estuary (Zone 2).

The U.S. Steel-Fairless Hills (USS) began its operation in 1952 and was fully integrated steel mill. The facility has been downsized and various processes have been eliminated in the past decade. USS has leased some of their facility and is providing water supply and wastewater treatment needed by their tenants. The applicant (USS) currently operates continuous galvanizing line. The active processes at the plant includes alkaline cleaning, cold forming temper mill and hot coating continuous galvanizing. USS also has a sewage treatment plant for their sewage treatment and also from leased areas and customers of USS Industrial Park. The facility is also receiving various types of wastewater from Fairless Energy (Dominion) Electrical generating station.

The original application for renewal of NPDES Permit was submitted by AECOM on behalf of U. S. Steel on May 22, 2019. On December 1, 2020 AECOM submitted modifications to the original NPDES renewal application. In 2020, Exelon Generation Company, LLC ceased operations at the Fairless Hills Generating Station, a facility near U. S. Steel facility that held the NPDES Permit PA0057088 for discharge of process water and stormwater. The Department (DEP) cancelled the NPDES permit PA0057088 for Exelon Generation Company, LLC on September 17, 2020. As operation of the Exelon facility had ceased and all process flows from Exelon including non-contact cooling water, boiler blowdown, and miscellaneous wastewater have ceased except for the stormwater contribution contributions, U. S. Steel has proposed to add the stormwater only Outfall previously located on Exelon facility to U. S. Steel's existing permit PA0013463. The modified application includes applicable sections of the required forms and attachments for the addition of stormwater Outfall 004. In

Approve	Deny	Signatures	Date
X		Ketan Thaker Ketan Thaker / Project Manager	9/8/2021
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	09/08/2021

Summary of Review

addition, due to ceased operations at Exelon Generation Company, some modifications to renewal application includes replacement pages 9 & 11 of permit application; the Process Water Flow Diagram Fairless Hills Generation Station and updated "Appendix D Treatment Chemicals and Chemical Additives Summery Memorandum".

Because of these modifications we have added Outfall 004 in this permit renewal for discharge of stormwater from the eastern portion of the Fairless Hills Generating Station and discharge of stormwater basins located on the Air Products property and Kinder Morgan properties.

Also, in this permit renewal, Outfall 007 has been removed from the permit renewal as the outfall is plugged. This outfall used to discharge stormwater from raw material storage warehouse and ladle repair shop.

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, Terminal Treatment Plant, Potable Treatment Plant as well as water distribution systems. The Department (DEP) will reissue the NPDES permit to U. S. Steel. Upon reissuance of the NPDES permit, the Department will work with U. S. Steel, Northpoint, and MMA to separate the current NPDES permit into their own respective permits.

USS discharges treated wastewater to Delaware Estuary Zone 2 via a number of outfalls as follows:

Outfalls	Description of Wastewater
002	Non-contact cooling water and stormwater from USS Galvanize Process, Stormwater from Mazza Iron & Steel, GMA, Covanta and FMTP area
003	Process wastewater, Sewage wastewater, and stormwater
008	Stormwater Runoff (north yard and main gate area)
009	Stormwater Runoff (wire mill area)
010	Intake Screen Discharge Water
011	Intake Screen Discharge Water
004	Stormwater from the eastern portion of Fairless Hills Generating Station and discharge from stormwater basins located on the adjacent Air Products property and Kinder Morgan properties.

Due to the tidal condition at Outfall 003, monitoring of effluent is impossible; therefore, wastewater contributing to Outfall 003 is monitored at internal monitoring points as follows:

Monitoring Point	Wastewater Characteristic
MP 103	- Treated Process Wastewater from Terminal Treatment Plant (FMTP Effluent, Potable filtration plant rinse & blow down water, Fairless Energy cooling tower blow down, Basement sump water – powerhouse (formerly Exelon)
MP 203	- Treated Sewage Wastewater
MP 303	- Stormwater runoff.
MP 403	- Treated Process Wastewater from Finishing Mill Treatment Plant (USS Galvanize process wastewater, Sheet & Tin basement sumps, Clarifier bottoms from Fairless Energy

Regulatory Basis:

All the mass limitations specified at monitoring points (MPs) 103 and 403 are based on Federal Register 40 C.F.R. Part 420, which specifies Effluent Limitation Guidelines (ELGs) for Iron and Steel Manufacturers. Specifically, for this facility, Subpart K-Alkaline Cleaning, Subpart L-Hot Coating Technology Based Limits (BAT) are specified for TRC and pH. Wasteload allocations and BOD_5 percent removal has been included per Delaware River Basin Commission's (DRBC) allocation.

Summary of Review

Temperature limits are per Chapter 97 and Temperature Guidance Documents. Limit for Fairless Energy (SWEC) wastewater is based on 40 C.F.R. Part 423.

Delaware River Basin Commission (DRBC) Docket No. D-1978-068-5 was issued on June 10, 2020.

Effluent limits at MP 203 (sanitary waste) are based on 40 C.F.R. Part 133.

Effluent limits for Outfall 002 are based on both BAT and WQ.

Effluent limits for Outfalls MP 303, 004, and 009 based on PAG-3, General Permit for discharges of stormwater from industrial activities.

Effluent limits for Outfalls 010 and 011 (intake screen discharges) are based on Best Management Practices.

Outfall 002:

The sources of wastewater to Outfall 002 are NCCW and SWRO. The average discharge rate of NCCW for Outfall 002 associated with the existing production is 2.0 MGD. This outfall also receives stormwater runoff from about 420 acres varies from 1.2 MGD to 10.9 MGD. Therefore, estimated flow at this outfall varies from 3.2 MGD to 12.9 MGD. Wastewater and SWRO flows through the piped and open ditch conveyance system designed by USS and is then discharged through Outfall 002.

Effluent Limitation Summary:

The parameters of concern in the NCCW are as follows: The limit for temperature is based on DRBC's requirements while Oil and Grease, and pH are based on Chapters 97 and 93, respectively.

The proposed limits are the same as existing limits. The discharge is in compliance with the existing limits and compliance is expected for the proposed limits.

Parameter	Limitations (Mg/l)		Basis	Achievable (Yes/No)
	Existing	Proposed		
Temperature of (Inst. Max)	110º	110º	DRBC	Yes
Oil and Grease	15	15	Chapter 97	Yes
pH (STD)	6-9	6-9	Chapter 93	Yes

Since this outfall also receives the stormwater runoff from a processing area, PAG-3, Appendix B, Parameters (Primarily Metal Industry Facilities) have been included in the permit as follows:

Parameter	Limitations (Mg/l)		Measurement Frequency
	Average Annual	Daily Max.	
$CBOD_5$	Report	Report	1/6 Month
COD	Report	Report	1/6 Month
Oil and Grease	Report	Report	1/6 Month
pH	Report	Report	1/6 Month
Total Suspended Solids	Report	Report	1/6 Month
Lead, Total	Report	Report	1/6 Month
Chromium, Total	Report	Report	1/6 Month
Cadmium, Total	Report	Report	1/6 Month
Arsenic, Total	Report	Report	1/6 Month
Iron (Dissolved)	Report	Report	1/6 Month
Copper, Total	Report	Report	1/6 Month
PCBs (Dry Weather)	Report	Report	1/6 Month

Summary of Review

PCBs (Wet Weather)	Report	Report	1/6 Month

Outfall 003:

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

Monitoring Point		Description of Wastewater
MP 103	-	Treated Process Wastewater from Terminal Treatment Plant
MP 203	-	Treated Sewage Wastewater
MP 303	-	SWRO
MP 403	-	Treated Process Wastewater from Finishing Mill Treatment Plant

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. (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 Terminal Treatment Plant (TTP) prior to discharge into the Delaware River through Outfall 103. Influent wastewater is conveyed through a series of lift station to TTP, either from users or from the effluent stream of the Finishing Mill Treatment Plant (FMTP) to TTP 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 TTP 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.

Summary of Review

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:

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	4.08	4.08	2.442
Zinc	1.0	1.0	20.36	20.36	2.442
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 TTP 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

Summary of Review

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	4.79	6.22	Report	Report	0.37
Zinc	21.83	24.77	Report	Report	1.75
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.

Summary of Review

MP 203:

Sanitary wastewater is discharged primarily from this discharge point. Previous permit limits are carried over in this renewal. 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.

US Steel currently 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 communitors 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		50
BOD5 (% Removal) *	Minimum 88.5				
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.

Summary of Review

MP 303:

The sources of wastewater to MP 303 is surface water runoff.

Since this outfall is not carrying NCCW, parameters related to NCCW have been removed in this renewal. Applicable stormwater parameters have been added in this renewal. They are as follows:

Parameter	Average Annual (Mg/L)	Maximum Daily (Mg/L)
$CBOD_5$	Report	Report
Total Suspended Solids	Report	Report
Oil and Grease	Report	Report
pH	Report	Report
Iron (Dissolved)	Report	Report

No treatment is proposed for these discharges, the discharge is intermittent.

MP 403

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.

BAT effluent limit calculations

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

Summary of Review

BAT Effluent Limits Calculations are attached.

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		O&G		Lead		Zinc		Naphthalene	TCE	Hex Chrome[2]	
					Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Daily Maximum	Daily Maximum	Daily Maximum	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*						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	26,234	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

Summary of Review

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

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.

Outfalls 008, and 009:

These outfalls consist of stormwater runoff only. Therefore, they are subject to the terms and conditions of the General Permit for stormwater discharges associated with industrial activities, PAG-3. Outfall 008 receives stormwater from U. S. Steel North Yard and main gate area and nom-U. S. Steel properties. Outfall 009 receives stormwater from wire mill area

The effluent limits are as follows:

Parameter	**Average Annual (Mg/L)**	**Maximum Daily (Mg/L)**
$CBOD_5$	Report	Report
Total Suspended Solids	Report	Report
Oil and Grease	Report	Report
pH	Report	Report
Iron (Dissolved)	Report	Report
Zinc, Total	Report	Report

The monitoring of Outfall 008 is not included in permit due to the fact that this outfall receives stormwater from other areas not owned/operated by USS.

Outfall 007:

The Outfall 007 has been removed from the permit renewal as this outfall is plugged. This outfall used to discharge stormwater from raw material storage warehouse and ladle repair shop.

Outfall 004:

In 2020, Exelon Generation Company, LLC ceased operations at the Fairless Hills Generating Station, a facility near U. S. Steel facility that held the NPDES Permit PA0057088 for discharge of process water and stormwater. The Department (DEP) cancelled the NPDES permit PA0057088 for Exelon Generation Company, LLC on September 17, 2020. As operation of the Exelon facility had ceased and all process flows from Exelon including non-contact cooling water, boiler blowdown, and miscellaneous wastewater have ceased except for the stormwater contribution contributions, U. S. Steel has proposed to add the stormwater only Outfall previously located on Exelon facility to U. S. Steel's existing permit PA0013463. We have added Outfall 004 in this permit renewal for discharge of stormwater from the eastern portion of the Fairless Hills Generating Station and discharge of stormwater basins located on the Air Products property and Kinder Morgan properties.

Summary of Review

Outfalls 010 and 011:

Outfalls 010 and 011 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. These outfalls were constructed during plant construction in 1950 but were never included in the permit.

It is noted that permittee is generally in compliance with effluent limits of the NPDES permit, there are minor issues with operations and maintenance of the Sewage and Industrial Treatment Plants.

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

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	

This permit renewal requires annual reporting for Chronic Toxicity with dilution series of 5, 10, 19, 60, and 100 % effluent. Previous permit had semi-annual monitoring requirements for Acute and Chronic Toxicity. Test results show no reasonable potential, therefore, annual reporting for Chronic Toxicity is required at internal monitoring point 103 which is consistent with SOP.

Summary of Review

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 002, 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 on April 29, 2019.

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.	007	Design Flow (MGD)	0
Latitude	40Âº 8' 6.65"	Longitude	-74Âº 45' 17.57"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486816	RMI	125.1100
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), POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN, 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)	

Changes Since Last Permit Issuance: Outfall Plugged/Discontinued

Other Comments: This Outfall 007 is removed in this permit renewal.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	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.	002	Design Flow (MGD)	0
Latitude	40Âº 8' 26.52"	Longitude	-74Âº 43' 57.58"
Quad Name		Quad Code	
Wastewater Description:	Non-contact cooling water (NCCW) and Stormwater		

Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486170	RMI	127.4100
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.	009	Design Flow (MGD)	0
Latitude	40Âº 8' 40.73"	Longitude	-74Âº 43' 35.93"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486168	RMI	127.7400
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.	303	Design Flow (MGD)	0
Latitude	40Âº 8' 10.08"	Longitude	-74Âº 44' 24.51"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		

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.	010	Design Flow (MGD)	0
Latitude	40Âº 8' 9.31"	Longitude	-74Âº 44' 25.82"
Quad Name		Quad Code	
Wastewater Description:	Washing/Cleaning Wastewater		

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.	011	Design Flow (MGD)	0
Latitude	40Âº 9' 28.04"	Longitude	-74Âº 43' 18.96"
Quad Name		Quad Code	
Wastewater Description:	Washing/Cleaning Wastewater		
Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486160	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.	008	Design Flow (MGD)	0
Latitude	40Âº 10' 34.80"	Longitude	-74Âº 45' 18.74"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Biles Creek (WWF, MF)	Stream Code	
NHD Com ID	25486882	RMI	1.6100
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), POLYCHLORINATED BIPHENYLS (PCBS), POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN, SOURCE UNKNOWN, 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.	203	Design Flow (MGD)	.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.	403	Design Flow (MGD)	.856
Latitude	40Âº 8' 27.42"	Longitude	-74Âº 44' 19.62"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG		
Receiving Waters	Unnamed Tributary to 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	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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.	004	Design Flow (MGD)	0
Latitude	40Âº 8' 5.72"	Longitude	-74Âº 45' 0.02"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Delaware River (WWF, MF)	Stream Code	
NHD Com ID	25486820	RMI	0.2400
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)	

Compliance History

DMR Data for Outfall 002 (from December 1, 2019 to November 30, 2020)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19
Flow (MGD) Average Monthly	0.745	0.745	0.528	0.528	0.528	0.528	0.528	0.962	0.528	0.528	0.75	1.473
pH (S.U.) Instantaneous Minimum	6.9	6.8	6.9	6.9	7.2	7.1	7.9	6.8	7.0	6.6	7.6	7.4
pH (S.U.) Instantaneous Maximum	7.2	6.9	7.1	7.0	7.2	7.4	8.8	7.0	7.1	6.9	7.6	7.5
Temperature (ºF) Instantaneous Maximum	53	64	77	78	79	72.3	59.2	54	51	49	46.6	46.2
CBOD5 (mg/L) Other Stormwater Daily Maximum						5.07						< 2
COD (mg/L) Other Stormwater Daily Maximum						< 75.0						< 50
TSS (mg/L) Other Stormwater Daily Maximum						7.01						< 3.0
Oil and Grease (mg/L) Average Monthly	< 5.4	< 5.4	< 5.6	< 5.4	< 5.4	< 5.4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Oil and Grease (mg/L) Other Stormwater Daily Maximum						< 5.0						< 5.0
Total Cadmium (mg/L) Other Stormwater Daily Maximum						< 0.005						< 0.0005
Total Chromium (mg/L) Other Stormwater Daily Maximum						< 0.015						< 0.002
Total Copper (mg/L) Other Stormwater Daily Maximum						< 0.02						0.0024

Dissolved Iron (mg/L) Other Stormwater Daily Maximum						< 0.206						0.106
Total Lead (mg/L) Other Stormwater Daily Maximum						< 0.015						0.00053
PCBs (Dry Weather) (pg/L) Other Stormwater Daily Maximum												213499
PCBs (Wet Weather) (pg/L) Other Stormwater Daily Maximum												109748

DMR Data for Outfall 009 (from December 1, 2019 to November 30, 2020)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19
pH (S.U.) Daily Maximum						6.7						6.64
CBOD5 (mg/L) Daily Maximum						< 2.0						< 2.0
TSS (mg/L) Daily Maximum						18.6						< 3.0
Oil and Grease (mg/L) Daily Maximum						< 5.0						6.4
Dissolved Iron (mg/L) Daily Maximum						< 0.206						< 0.05

DMR Data for Outfall 103 (from December 1, 2019 to November 30, 2020)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19
Flow (MGD) Average Monthly	1.7	1.8	2	2.2	2	1.7	1.9	1.6	1.8	2.1	2.13	2.39
pH (S.U.) Instantaneous Minimum	7.8	7.7	7.5	7.7	8.0	7.6	7.9	7.9	7.4	7.3	7.0	7.5
pH (S.U.) Instantaneous Maximum	8.4	8.6	8.8	8.5	8.9	8.9	9.0	9.0	8.8	8.3	8.9	8.8
TRC (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

TRC (mg/L) Instantaneous Maximum	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Color (Pt-Co Units) Instantaneous Maximum	10	10	5	20	50	30	25	15	20	5	5	10
Temperature (ºF) Instantaneous Maximum	64	74	83	87	88	84.6	79	64	60	57.5	58.5	57.6
BOD5 (lbs/day) Average Monthly	< 21	< 33	< 41	88	92	49	56	42	< 53	< 69	< 34	< 53
BOD5 (lbs/day) Intake Average Monthly	21	46	42	102	53	37	43	37	40	46	< 33.8	< 43
BOD5 (lbs/day) Daily Maximum	< 24	47	57	106	116	80	66	59	90	163	< 37	83
BOD5 (lbs/day) Intake Daily Maximum	29	65	62	129	72	56	56	57	43	72	< 37.4	56
BOD5 (mg/L) Average Monthly	< 2	< 2	< 2	4	6	3	3	3	< 3	< 3	< 2	< 2
BOD5 (mg/L) Intake Average Monthly	2	3	2	5	3	3	2	3	2	2	< 2.00	< 2
BOD5 (mg/L) Daily Maximum	2	3.5	3	6	9	5	4	4	4.68	6.74	< 2	3.86
BOD5 (mg/L) Intake Daily Maximum	2	5	3	6	5	4	3	4	2	3	< 2.00	2
CBOD20 (lbs/day) Average Monthly	28	48	171	123	144	94	83	74	32	101	< 29	70
BOD5 % Removal (%) Percent Removal Instantaneous Minimum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TSS (lbs/day) Average Monthly	< 77	< 79	< 108	< 141	< 131	< 62	< 59	< 51	< 88	< 83	< 80	< 103
TSS (lbs/day) Daily Maximum	< 96	< 100	165	< 217	187	72	76	64	< 173	164	< 112	138
TSS (mg/L) Average Monthly	< 6	< 6	< 6	< 7	< 9	< 5	< 3	< 4	< 5	< 4	< 5	< 5
TSS (mg/L) Daily Maximum	< 6.4	< 7.1	9.4	< 10	14	< 6	4.33	4.78	< 9	6.57	6.42	9.25

Total Dissolved Solids (mg/L) Average Monthly	445	705	635	615	FF	573	FF	431	500	448	485	491
Total Dissolved Solids (mg/L) Daily Maximum	510	730	680	670	560	650	441	465	541	460	491	526
Oil and Grease (lbs/day) Average Monthly	< 69	< 74	< 101	< 113	88	< 74	< 89	< 71	< 93	< 101	< 84	< 107
Oil and Grease (lbs/day) Daily Maximum	< 89	< 87	< 115	< 125	< 112	< 83	< 108	< 96	< 100	< 125	< 93	< 139
Oil and Grease (mg/L) Average Monthly	< 5.3	< 5.2	< 5.4	< 6	< 5.5	< 5.3	< 5	< 5	< 5	< 5.0	< 5	< 5.0
Oil and Grease (mg/L) Daily Maximum	< 5.6	< 5.3	< 5.4	< 6	< 5.7	< 5.8	< 5	< 5	< 5	5.0	< 5	< 5.0
Ammonia (lbs/day) Average Monthly			< 1.59			< 1.001			< 1.460			< 2.58
Ammonia (mg/L) Average Monthly			< 0.1			< 0.1			< 0.10			< 0.10
Total Aluminum (lbs/day) Average Monthly	2	4	4	4	4	5	5	6	8	2	7	6
Total Aluminum (lbs/day) Daily Maximum	2	4	4	4	4	5	5	6	8	2	7	6
Total Aluminum (mg/L) Average Monthly	0.15	0.21	0.23	0.19	0.24	0.284	0.23	0.575	0.5	0.176	0.507	0.273
Total Aluminum (mg/L) Daily Maximum	0.15	0.21	0.23	0.19	0.24	0.284	0.23	0.575	0.5	0.176	0.507	0.273
Total Chromium (lbs/day) Average Monthly	< 0.03	< 0.03	< 0.04	< 0.04	< 0.04	< 0.03	< 0.04	< 0.03	< 0.10	< 0.04	< 0.04	< 0.05
Total Chromium (lbs/day) Daily Maximum	< 0.03	< 0.03	< 0.04	< 0.04	0.04	< 0.03	< 0.04	< 0.04	0.30	< 0.05	0.04	0.07
Total Chromium (mg/L) Average Monthly	< 0.002	< 0.002	< 0.002	< 0.002	< 0.0024	< 0.002	< 0.002	< 0.002	< 0.0051	< 0.002	< 0.0022	< 0.0025
Total Chromium (mg/L) Daily Maximum	< 0.002	< 0.002	< 0.002	< 0.002	0.0033	< 0.002	< 0.002	< 0.002	0.0142	< 0.002	0.0028	0.003

Total Zinc (lbs/day) Average Monthly	< 0.10	< 0.10	< 0.20	< 0.30	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.30	< 0.22	< 0.30
Total Zinc (lbs/day) Daily Maximum	< 0.20	< 0.20	< 0.20	0.50	0.30	0.20	< 0.20	0.20	0.30	0.50	0.26	0.40
Total Zinc (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.014	< 0.012	< 0.0108	0.01	< 0.0114	< 0.0124	< 0.0129	< 0.0128	< 0.0152
Total Zinc (mg/L) Daily Maximum	< 0.01	< 0.01	< 0.01	0.026	0.022	0.012	< 0.01	0.0151	0.0142	0.0202	0.0153	0.0198
PCBs (Dry Weather) (pg/L) Daily Maximum												935
Acute WET - Ceriodaphnia Survival (TUa) Daily Maximum						1.0						1.0
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum						1.0						1.0
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum						1.0						1.0

DMR Data for Outfall 203 (from December 1, 2019 to November 30, 2020)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19
Flow (MGD) Average Monthly	0.199	0.166	0.111	0.121	0.152	0.137	0.149	0.174	0.151	0.178	0.183	0.217
pH (S.U.) Instantaneous Minimum	7.7	7.6	7.1	7.5	7.1	7.2	7.0	7.4	7.2	7.0	7.2	7.3
pH (S.U.) Instantaneous Maximum	8.3	8.4	8.2	8.1	8.0	7.8	7.8	7.9	7.8	7.9	8.6	8.7
DO (mg/L) Instantaneous Minimum	8	7	6.1	5.4	5.1	5.4	6.9	8.6	5.1	6.3	2.5	2.2
TRC (mg/L) Average Monthly	0.1	0.1	0.1	0.1	0.1	0.06	0.1	0.1	0.1	0.1	0.1	0.2
TRC (mg/L) Instantaneous Maximum	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.27	0.35	0.5	0.5

Color (Pt-Co Units) Instantaneous Maximum	10	5	5	5	5	5	5	10	5	5.0	5	5
BOD5 (lbs/day) Average Monthly	< 10	4	4	15	6	< 6	5	5	< 6	5	< 5	< 5
BOD5 (mg/L) Average Monthly	< 6	4	4	13	5	< 5	4	4	< 4	3	< 4	< 2
BOD5 (mg/L) Intake Average Monthly	10	24	32	24	29	13	13	14	19	21	11	9
BOD5 (mg/L) Intake Daily Maximum	24	40	55	53	43	17	24	23	27	30	24	16
CBOD20 (lbs/day) Average Monthly	22	13	8	11	7	9	14	19	8	10	3	5
TSS (lbs/day) Average Monthly	< 6	< 6	< 6	< 6	< 6	< 4	< 4	< 5	< 4	< 6	< 7	< 17
TSS (lbs/day) Intake Average Monthly	23	25	108	23	64	13	14	9	20	26	17	58
TSS (mg/L) Average Monthly	< 4	< 5	< 5	< 5	< 4	< 4	< 3	< 3	< 3	< 4	< 5	< 7
TSS (mg/L) Intake Average Monthly	14	22	108	21	53	11	11	6	15	16	13	24
Total Dissolved Solids (mg/L) Average Monthly	260	310	240	320	250	282	285	320	382	392	335	321
Total Dissolved Solids (mg/L) Daily Maximum	260	310	240	320	250	282	285	320	382	392	335	321
Fecal Coliform (CFU/100 ml) Geometric Mean	< 3	< 1	< 2	< 1	< 4	< 16	< 1	< 1	< 1	< 1	< 1	< 4
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	21	1	5	< 1	190	600	< 1	1	< 1	< 1	3	< 10
Ammonia (lbs/day) Average Monthly	1	< 0.1	< 1	< 0.2	< 0.1	< 0.1	< 0.1	0.1	0.1	0.2	< 0.1	< 0.1
Ammonia (mg/L) Average Monthly	1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	0.13	< 0.1	< 0.1
Total Phosphorus (mg/L) Average Monthly	0.84	1.1	1.2	1.2	1.2	1.2	1	0.98	1.1	1.2	0.74	0.98

Total Copper (mg/L) Daily Maximum						< 0.02						0.004
Total Lead (mg/L) Daily Maximum						< 0.015						< 0.0005
Total Zinc (mg/L) Daily Maximum						< 0.02						0.0124
PCBs (Dry Weather) (pg/L) Daily Maximum												3868

DMR Data for Outfall 303 (from December 1, 2019 to November 30, 2020)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19
pH (S.U.) Daily Maximum						7.5						7.62
CBOD5 (mg/L) Daily Maximum						< 2.0						25.7
TSS (mg/L) Daily Maximum						< 3.0						4.33
Oil and Grease (mg/L) Daily Maximum						< 5.0						< 5.0
Dissolved Iron (mg/L) Daily Maximum						< 0.206						0.0634

DMR Data for Outfall 403 (from December 1, 2019 to November 30, 2020)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19
Flow (MGD) Average Monthly	0.410	0.401	0.397	0.564	0.486	0.345	0.193	0.302	0.34	0.347	0.357	0.388
Hexavalent Chromium (lbs/day) Average Monthly	< 0.030	< 0.030	< 0.009	< 0.003	< 0.002	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002	< 0.006	< 0.001
Hexavalent Chromium (lbs/day) Daily Maximum	0.040	< 0.040	0.040	< 0.003	< 0.003	< 0.002	< 0.001	< 0.002	< 0.002	0.002	0.030	< 0.002
Hexavalent Chromium (mg/L) Average Monthly	< 0.01	< 0.01	< 0.0025	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.00053	< 0.0005	< 0.00052	< 0.0025	< 0.0005
Hexavalent Chromium (mg/L) Daily Maximum	< 0.01	< 0.01	0.01	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00064	< 0.0005	0.00058	0.0106	< 0.0005
Total Chromium (lbs/day) Average Monthly	< 0.008	< 0.006	< 0.006	0.01	< 0.009	< 0.006	< 0.004	0.02	< 0.006	< 0.002	< 0.04	< 0.004

Total Chromium (lbs/day) Daily Maximum	< 0.008	< 0.006	< 0.006	0.01	< 0.009	< 0.006	< 0.004	0.02	< 0.006	< 0.002	< 0.04	< 0.004
Total Chromium (mg/L) Average Monthly	< 0.002	< 0.002	< 0.002	0.002	< 0.002	< 0.002	< 0.002	0.004	< 0.002	< 0.002	< 0.015	< 0.002
Total Chromium (mg/L) Daily Maximum	< 0.002	< 0.002	< 0.002	0.002	< 0.002	< 0.002	< 0.002	0.004	< 0.002	< 0.002	< 0.015	< 0.002
Total Copper (lbs/day) Average Monthly	0.01	< 0.003	0.005	0.01	0.04	0.009	0.03	0.05	0.009	0.003	< 0.05	0.008
Total Copper (lbs/day) Daily Maximum	0.01	< 0.003	0.005	0.01	0.04	0.009	0.03	0.05	0.009	0.003	< 0.05	0.008
Total Copper (mg/L) Average Monthly	0.003	< 0.001	0.002	0.002	0.01	0.003	0.02	0.01	0.003	0.0027	< 0.02	0.004
Total Copper (mg/L) Daily Maximum	0.003	< 0.001	0.002	0.002	0.01	0.003	0.02	0.01	0.003	0.0027	< 0.02	0.0041
Total Lead (lbs/day) Average Monthly	< 0.002	< 0.002	< 0.005	< 0.006	< 0.002	< 0.002	0.004	< 0.003	< 0.003	0.02	< 0.01	< 0.002
Total Lead (lbs/day) Daily Maximum	< 0.002	< 0.002	0.008	0.01	< 0.003	0.003	0.007	0.007	0.006	0.08	< 0.04	0.003
Total Lead (mg/L) Average Monthly	< 0.0006	< 0.0005	< 0.0013	< 0.0012	< 0.0005	< 0.0007	0.003	< 0.00115	< 0.0011	0.00512	< 0.0054	< 0.00066
Total Lead (mg/L) Daily Maximum	0.0006	< 0.0005	0.0022	< 0.0005	< 0.0005	0.0011	0.006	0.0018	0.0027	0.0179	< 0.015	0.0011
Total Nickel (lbs/day) Average Monthly	0.007	0.004	0.008	0.01	0.02	0.01	0.01	0.02	0.007	0.002	< 0.03	0.007
Total Nickel (lbs/day) Daily Maximum	0.007	0.004	0.008	0.01	0.02	0.01	0.01	0.02	0.007	0.002	< 0.03	0.007
Total Nickel (mg/L) Average Monthly	0.002	0.001	0.003	0.003	0.004	0.005	0.01	0.005	0.0021	0.002	< 0.01	0.004
Total Nickel (mg/L) Daily Maximum	0.002	0.001	0.003	0.003	0.004	0.005	0.01	0.005	0.0021	0.0016	< 0.01	0.0036
Total Zinc (lbs/day) Average Monthly	< 0.04	< 0.03	< 0.07	0.10	0.08	0.09	0.10	0.10	0.10	< 0.50	0.10	< 0.09
Total Zinc (lbs/day) Daily Maximum	0.05	0.04	0.10	0.10	0.09	0.10	0.10	0.20	0.20	1.64	0.20	0.20
Total Zinc (mg/L) Average Monthly	< 0.012	0.01	< 0.02	0.018	0.017	0.0303	0.080	0.0433	0.0452	< 0.1151	0.0579	< 0.0306
Total Zinc (mg/L) Daily Maximum	0.016	0.01	0.03	0.024	0.021	0.0378	0.182	0.0692	0.101	0.365	0.106	0.0489
Naphthalene (lbs/day) Daily Maximum	< 0.009	< 0.008	< 0.009	< 0.010	< 0.010	< 0.010	< 0.004	< 0.009	< 0.010	< 0.009	< 0.006	< 0.008
Naphthalene (mg/L) Average Monthly	< 0.0021	< 0.0022	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

Naphthalene (mg/L) Daily Maximum	< 0.0022	< 0.0022	< 0.0026	< 0.0023	< 0.0022	< 0.002	< 0.002	< 0.002	< 0.003	< 0.002	< 0.002	< 0.002
Tetrachloro-ethylene (lbs/day) Daily Maximum	< 0.004	< 0.020	< 0.004	< 0.006	< 0.030	< 0.010	< 0.020	< 0.004	< 0.040	< 0.005	< 0.003	< 0.004
Tetrachloro-ethylene (mg/L) Daily Maximum	< 0.001	< 0.005	< 0.001	< 0.001	< 0.005	< 0.005	< 0.01	< 0.001	< 0.01	< 0.001	< 0.001	< 0.001

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 002, 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	2/month	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	2/month	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	XXX	110	2/month	I-S
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	15.0	XXX	30	2/month	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Outfall 002, 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 Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nickel	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
PCBs (Dry Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
PCBs (Wet Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	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 004, 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		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nickel	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	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 009, 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		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	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 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
CBOD20	750	XXX	XXX	XXX	XXX	XXX	1/month	24-Hr Composite
BOD5 % Removal (%) Percent Removal	88.5 Inst Min	XXX	XXX	XXX	XXX	XXX	1/week	Calculation
TSS	486	1116	XXX	30	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	35.0 Avg Qrtly	XXX	70	1/quarter	24-Hr Composite
Total Aluminum	Report	Report	XXX	Report	Report	XXX	1/month	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 Chromium	4.79	6.22	XXX	Report	Report	0.37	1/week	24-Hr Composite
Total Zinc	21.83	24.77	XXX	Report	Report	1.75	1/week	24-Hr Composite
PCBs (Dry Weather) (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	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	XXX	50	1/week	24-Hr Composite
CBOD20	67	XXX	XXX	XXX	XXX	XXX	1/month	24-Hr Composite
BOD5 % Removal (%) Percent Removal	88.5	XXX	XXX	XXX	XXX	XXX	1/week	Calculation
TSS	41	XXX	XXX	30	XXX	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

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		
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
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	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 303, 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		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	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 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/month	24-Hr Composite
Total Copper	Report	Report	XXX	0.1	0.3	0.3	1/month	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/month	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
Tetrachloro-ethylene	XXX	0.120	XXX	XXX	Report	0.02	1/week	Grab

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, U.S. Steel Fairless Hills Facility (Fairless) 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), U.S. Steel Fairless Hills 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.

Revised permit renewal 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 intention is to renew this permit with CWIS BTA requirements with the understanding that control of various aspects of the CWIS and cooling operations between U.S. Steel, Northpoint, and MMA will be established in the future.

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 facility will be given a compliance schedule to initiate modifications and improvements to meet 0.5 fps actual through screen velocity by the end of the permit cycle.