pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0052159**
Facility Type	**Industrial**	APS ID	**1088328**
Major / Minor	**Minor**	Authorization ID	**1439424**

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

Applicant and Facility Information

Applicant Name	**Aqua PA Inc.**	Facility Name	**Ridley Creek WTP**
Applicant Address	762 West Lancaster Avenue	Facility Address	Elwyn Road & Baltimore Pike
	Bryn Mawr, PA 19010-3489		Media, PA 19063
Applicant Contact	Matthew Miller	Facility Contact	Matthew Miller
Applicant Phone	(610) 645-1082	Facility Phone	(717) 645-1082
Client ID	309251	Site ID	250033
SIC Code	4941	Municipality	Middletown Township
SIC Description	Trans. & Utilities - Water Supply	County	Delaware
Date Application Received	April 3, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Permit Renewal

Summary of Review

The applicant requests renewal of an NPDES permit to discharge treated industrial wastewater from a water filtration plant to Ridley Creek.

The plant takes water from Chester and Ridley Creeks.

There are three outfalls at the site for wastewater discharge. Filter backwash and thickener supernatant are discharged through Outfall 001. Backwash decant can also be discharged to the raw water pump station for recycle. Outfall 002 discharges sedimentation basin overflow; currently basins are disconnected from outfall. There has been no discharge from Outfall 002 for the past 5 years; however, permittee wants to keep this outfall in the permit. Outfall 004 discharges process water used to wash traveling screen (leaf screen) to remove trapped debris. The maximum discharge could be up to 1 mgd and the discharge type is listed in the application as continuous-intermittent.

Wastewater is pumped to a thickener where polymer is added to enhance the settling of solids. Dewatered solids are hauled out and disposed of at a wastewater treatment plant. Polymer LT 340 is the coagulant used for wastewater treatment.

Other outfalls located at the site do not require to be monitored.

No upgrades to the facility are proposed at this time.
No chemical additives are reported in the application.

The eDMR review shows the discharge is in compliance with the existing permit limits and no comments received from Operations Section.

Approve	Deny	Signatures	Date
X		*Sara Abraham* Sara Reji Abraham, E.I.T. / Project Manager	July 3, 2023
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	07/05/2023

Summary of Review

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.

Act 14 Notifications:

Middletown Township - 3/13/2023
Delaware County - 3/13/2023

Permit Conditions:

A. Acquire Necessary Property Rights
B. Proper Sludge Disposal
C. WQM Permits
D. Applicable BAT if Developed
E. Chlorine Optimization
F. TMDL/WLA Requirement
G. Chemical Additive Condition
H. Sedimentation Basin Cleaning

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.15
Latitude	39º 54' 58.81"	Longitude	-75º 24' 10.76"
Quad Name	Media	Quad Code	1942
Wastewater Description:	Water Treatment Effluent (decant water from residuals thickeners and backwash recovery basins)		
Receiving Waters	Ridley Creek (HQ-TSF)	Stream Code	00621
NHD Com ID	25607080	RMI	7.5
Drainage Area	30 mi^2		
Q_{7-10} Flow (cfs)	4.5	Q_{7-10} Basis	DRBC docket D-85-29CP
Elevation (ft)	99.5		
Watershed No.	3-G	Chapter 93 Class.	HQ-TSF
Assessment Status	Impaired		
Cause(s) of Impairment	cause unknown, flow regime modification, siltation		
Source(s) of Impairment	urban runoff/storm sewers		

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	1.0
Latitude	39º 54' 58.81"	Longitude	-75º 24' 10.76"
Quad Name	Media	Quad Code	1942
Wastewater Description:	Traveling screen back wash		
Receiving Waters	Ridley Creek (HQ-TSF)	Stream Code	00621
NHD Com ID	25607080	RMI	7.5
Watershed No.	3-G	Chapter 93 Class.	HQ-TSF
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Siltation, Water/Flow Variability		
Source(s) of Impairment	Urban Runoff/Storm Sewers		

Treatment Facility Summary				
Treatment Facility Name: Ridley Creek Water Treatment Plant				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial		Flocculation, Sedimentation	No Disinfection	0.15
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
		Not Overloaded		

Compliance History

DMR Data for Outfall 001 (from May 1, 2022 to April 30, 2023)

Parameter	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22
Flow (MGD) Average Monthly	0.047	0.039	0.041	0.04	0.039	0.046	0.052	0.065	0.064	0.063	0.062	0.056
Flow (MGD) Daily Maximum	0.058	0.045	0.1	0.046	0.051	0.064	0.069	0.107	0.083	0.079	0.085	0.087
pH (S.U.) Instantaneous Minimum	7.61	7.42	7.29	7.49	7.38	7.52	7.72	7.83	7.67	7.49	7.6	7.4
pH (S.U.) Instantaneous Maximum	8.1	7.74	7.58	7.8	7.77	8.09	8.12	8.14	8.18	7.96	7.9	7.85
TRC (mg/L) Average Monthly	0.1	0.1	0.2	< 0.2	0.2	0.3	0.2	0.1	0.1	< 0.05	0.1	0.1
TRC (mg/L) Instantaneous Maximum	0.25	0.25	0.3	0.45	0.25	0.5	0.25	0.2	0.05	0.08	0.15	0.15
TSS (mg/L) Average Monthly	2	3	4	3	6	3	3	4	3	3	2.0	2.0
TSS (mg/L) Daily Maximum	2.4	3.6	4	5.2	10	4	3.6	6	4.4	7.6	2.8	2.4
Total Aluminum (mg/L) Average Monthly	0.4	0.4	0.5	0.5	0.6	0.5	0.4	0.4	0.5	0.5	0.4	0.4
Total Aluminum (mg/L) Daily Maximum	0.52	0.45	0.65	0.59	0.72	0.55	0.49	0.52	0.53	0.53	0.41	0.47
Total Iron (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Iron (mg/L) Daily Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Manganese (mg/L) Average Monthly	0.03	0.03	0.04	0.03	0.04	0.03	0.02	0.02	0.02	0.03	0.05	0.03
Total Manganese (mg/L) Daily Maximum	0.03	0.04	0.04	0.04	0.05	0.03	0.02	0.03	0.03	0.04	0.06	0.03

DMR Data for Outfall 004 (from May 1, 2022 to April 30, 2023)

Parameter	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22
Flow (MGD) Average Monthly	0.0015	0.0015	0.0015	0.0015	0.0029	0.0041	0.0046	0.0034	0.0013	0.0015	0.0015	0.0015

Flow (MGD) Daily Maximum	0.0015	0.0015	0.0015	0.0015	0.003	0.0046	0.0046	0.0046	0.0015	0.0015	0.0015	0.0015
pH (S.U.) Instantaneous Minimum	7.22	7.16	7.26	7.22	7.18	7.24	7.27	7.27	7.18	7.46	7.36	7.36
pH (S.U.) Instantaneous Maximum	7.55	7.49	7.48	7.51	7.75	7.74	7.61	7.64	7.62	7.7	7.77	7.73
TRC (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	0.01	< 0.1	< 0.02	< 0.03
TRC (mg/L) Instantaneous Maximum	< 0.01	< 0.01	< 0.01	< 0.01	0.2	< 0.01	< 0.01	0.08	0.1	0.3	0.25	0.43

Outfall No. 001 **Design Flow (MGD)** .15
Latitude 39º 54' 57.00" **Longitude** -75º 24' 10.00"
Wastewater Description: Water Treatment Effluent (decant water from residuals thickeners and backwash recovery basins)

Technology-Based Limitations

The following technology-based limitations are based on the document "Technology Based Control Requirements for Water Treatment Plant Wastes":

Parameter	Average Monthly (mg/l)	Daily Maximum (mg/l)	Basis
TSS	30	60	Doc. No. 362-2183-003
Iron, T	2	4	Doc. No. 362-2183-003
Aluminum, T	4	8	Doc. No. 362-2183-003
Manganese, T	1	2	Doc. No. 362-2183-003
pH	6.0 to 9.0 at all times		Doc. No. 362-2183-003
TRC	0.5		Doc. No. 362-2183-003

All these above limits are existing.

Water Quality-Based Limitations

A "Reasonable Potential Analysis" using TMS, determined the following parameter of concern:

Aluminum, Total; it is controlled by the technology limit.

Outfall No. 002 **Design Flow (MGD)** 0
Latitude 39º 54' 59.00" **Longitude** -75º 24' 12.00"
Wastewater Description: Overflow from sedimentation basin

The recommended limits for Outfall 002 are similar to the limits for Outfall 001. No changes in the existing requirements.

Outfall No. 004 **Design Flow (MGD)** 1.0
Latitude 39º 54' 59.00" **Longitude** -75º 24' 14.00"
Wastewater Description: traveling screen backwash

The existing pH (6.0 to 9.0 STU) and TRC (0.5 mg/l) limits are recommended to continue in the draft permit.

A "Reasonable Potential Analysis" using TMS, determined the following parameters of concern:

Parameter	Average Monthly (mg/l)	Daily Maximum (mg/l)	Basis
Total Copper	Report	Report	TMS
Total Zinc*	0.224	0.350	TMS

* Only three sample results are reported in the application for Total Zinc. A monitoring requirement is included in the draft permit to collect more data and will be evaluated at the next permit renewal.

Anti-Backsliding

N/A

See the below attached TMS reports:

Outfall 001:

Discharge Information

Instructions | Discharge | Stream

Facility: Ridley Creek WTP NPDES Permit No.: PA0052159 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: decant water from residual thickeners and l

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.15	136	7.6						

					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		288									
	Chloride (PWS)	mg/L		85.4									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		34.7									
	Fluoride (PWS)	mg/L	<	0.07									
Group 2	Total Aluminum	µg/L		850									
	Total Antimony	µg/L	<	0.2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		93									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	200									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	3									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.2									
	Total Copper	µg/L		1									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		190									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		60									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		1.8									
	Total Phenols (Phenolics) (PWS)	µg/L	<	2									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.3									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L		23									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

	2,6-Dinitrotoluene	µg/L	<											
	Di-n-Octyl Phthalate	µg/L	<											
	1,2-Diphenylhydrazine	µg/L	<											
	Fluoranthene	µg/L	<											
	Fluorene	µg/L	<											
	Hexachlorobenzene	µg/L	<											
	Hexachlorobutadiene	µg/L	<											
	Hexachlorocyclopentadiene	µg/L	<											
	Hexachloroethane	µg/L	<											
	Indeno(1,2,3-cd)Pyrene	µg/L	<											
	Isophorone	µg/L	<											
	Naphthalene	µg/L	<											
	Nitrobenzene	µg/L	<											
	n-Nitrosodimethylamine	µg/L	<											
	n-Nitrosodi-n-Propylamine	µg/L	<											
	n-Nitrosodiphenylamine	µg/L	<											
	Phenanthrene	µg/L	<											
	Pyrene	µg/L	<											
	1,2,4-Trichlorobenzene	µg/L	<											
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												

Stream / Surface Water Information

Ridley Creek WTP, NPDES Permit No. PA0052159, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: _____ 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	000621	7.5	99.5	30			Yes
End of Reach 1	000621	4.8	75	33.3			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	7.5	0.1	4.5									100	7		
End of Reach 1	4.8	0.1	7.65												

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	7.5														
End of Reach 1	4.8														

Model Results

Ridley Creek WTP, NPDES Permit No. PA0052159, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.513 Analysis Hardness (mg/l): 103.29 Analysis pH: 7.03

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	8,209	
Total Antimony	0	0		0	1,100	1,100	12,040	
Total Arsenic	0	0		0	340	340	3,722	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	229,860	
Total Boron	0	0		0	8,100	8,100	88,660	
Total Cadmium	0	0		0	2.078	2.2	24.1	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	585.066	1,851	20,266	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	178	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,040	
Total Copper	0	0		0	13.855	14.4	158	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	66.896	85.1	931	Chem Translator of 0.786 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	18.0	Chem Translator of 0.85 applied
Total Nickel	0	0		0	481.232	482	5,278	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.401	4.0	43.8	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	711	
Total Zinc	0	0		0	120.438	123	1,348	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 57.027 PMF: 1 Analysis Hardness (mg/l): 101.77 Analysis pH: 7.02

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	4,486	
Total Arsenic	0	0		0	150	150	3,059	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	83,609	
Total Boron	0	0		0	1,600	1,600	32,628	
Total Cadmium	0	0		0	0.249	0.27	5.59	Chem Translator of 0.908 applied
Total Chromium (III)	0	0		0	75.184	87.4	1,783	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	212	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	387	
Total Copper	0	0		0	9.091	9.47	193	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	30,589	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.565	3.25	66.3	Chem Translator of 0.788 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	18.5	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.782	52.9	1,080	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	102	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	265	
Total Zinc	0	0		0	119.904	122	2,480	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 57.027 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	114	
Total Arsenic	0	0		0	10	10.0	204	
Total Barium	0	0		0	2,400	2,400	48,942	
Total Boron	0	0		0	3,100	3,100	63,216	
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	6,118	
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	20,392	
Total Mercury	0	0		0	0.050	0.05	1.02	
Total Nickel	0	0		0	610	610	12,439	
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	4.89	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 19.230 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	5,262	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	48,942	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	32,628	µg/L	Discharge Conc < TQL
Total Cadmium	5.59	µg/L	Discharge Conc < TQL
Total Chromium (III)	1,783	µg/L	Discharge Conc < TQL
Hexavalent Chromium	114	µg/L	Discharge Conc < TQL
Total Cobalt	387	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	101	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	6,118	µg/L	Discharge Conc < TQL
Total Iron	30,589	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	66.3	µg/L	Discharge Conc < TQL
Total Manganese	20,392	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	1.02	µg/L	Discharge Conc < TQL
Total Nickel	1,080	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	102	µg/L	Discharge Conc < TQL
Total Silver	28.1	µg/L	Discharge Conc < TQL
Total Thallium	4.89	µg/L	Discharge Conc < TQL
Total Zinc	864	µg/L	Discharge Conc ≤ 10% WQBEL

Outfall 004:

Discharge Information

Instructions | Discharge | Stream

Facility: Ridley Creek WTP NPDES Permit No.: PA0052159 Outfall No.: 004

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: traveling screen backwash

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
1	139	7.5						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		316									
	Chloride (PWS)	mg/L		87.2									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		33.9									
	Fluoride (PWS)	mg/L		0.36									
Group 2	Total Aluminum	µg/L		30									
	Total Antimony	µg/L	<	0.2									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		91									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	200									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	3									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.2									
	Total Copper	µg/L		11									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	32									
	Dissolved Iron	µg/L		20									
	Total Iron	µg/L	<	20									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		2									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		1.8									
	Total Phenols (Phenolics) (PWS)	µg/L	<	2									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.3									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L		192									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

	2,6-Dinitrotoluene	µg/L	<											
	Di-n-Octyl Phthalate	µg/L	<											
	1,2-Diphenylhydrazine	µg/L	<											
	Fluoranthene	µg/L	<											
	Fluorene	µg/L	<											
	Hexachlorobenzene	µg/L	<											
	Hexachlorobutadiene	µg/L	<											
	Hexachlorocyclopentadiene	µg/L	<											
	Hexachloroethane	µg/L	<											
	Indeno(1,2,3-cd)Pyrene	µg/L	<											
	Isophorone	µg/L	<											
	Naphthalene	µg/L	<											
	Nitrobenzene	µg/L	<											
	n-Nitrosodimethylamine	µg/L	<											
	n-Nitrosodi-n-Propylamine	µg/L	<											
	n-Nitrosodiphenylamine	µg/L	<											
	Phenanthrene	µg/L	<											
	Pyrene	µg/L	<											
	1,2,4-Trichlorobenzene	µg/L	<											
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												

Stream / Surface Water Information

Ridley Creek WTP, NPDES Permit No. PA0052159, Outfall 004

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Ridley Creek**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	000621	7.5	99.5	30			Yes
End of Reach 1	000621	4.8	75	33.3			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	7.5	0.1	4.5									86.4	7		
End of Reach 1	4.8	0.1	7.65												

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	7.5														
End of Reach 1	4.8														

Model Results

Ridley Creek WTP, NPDES Permit No. PA0052159, Outfall 004

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.618 Analysis Hardness (mg/l): 105.2 Analysis pH: 7.12

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	2,099	
Total Antimony	0	0		0	1,100	1,100	3,078	
Total Arsenic	0	0		0	340	340	951	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	58,765	
Total Boron	0	0		0	8,100	8,100	22,667	
Total Cadmium	0	0		0	2.115	2.25	6.28	Chem Translator of 0.942 applied
Total Chromium (III)	0	0		0	593.902	1,879	5,259	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	45.6	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	266	
Total Copper	0	0		0	14.096	14.7	41.1	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	68.241	87.1	244	Chem Translator of 0.784 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.61	Chem Translator of 0.85 applied
Total Nickel	0	0		0	488.741	490	1,370	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.510	4.13	11.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	182	
Total Zinc	0	0		0	122.320	125	350	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 39.246 PMF: 1 Analysis Hardness (mg/l): 99.857 Analysis pH: 7.08

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	860	
Total Arsenic	0	0		0	150	150	586	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	16,026	
Total Boron	0	0		0	1,600	1,600	6,254	
Total Cadmium	0	0		0	0.246	0.27	1.06	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.027	86.1	336	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	40.6	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	74.3	
Total Copper	0	0		0	8.945	9.32	36.4	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	5,863	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.513	3.18	12.4	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	3.54	Chem Translator of 0.85 applied
Total Nickel	0	0		0	51.943	52.1	204	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	19.5	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	50.8	
Total Zinc	0	0		0	117.995	120	468	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 39.246 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	21.9	
Total Arsenic	0	0		0	10	10.0	39.1	
Total Barium	0	0		0	2,400	2,400	9,381	
Total Boron	0	0		0	3,100	3,100	12,117	
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	1,173	
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	3,909	
Total Mercury	0	0		0	0.050	0.05	0.2	
Total Nickel	0	0		0	610	610	2,384	
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	0.94	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 22.477 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	Report	Report	Report	Report	Report	µg/L	26.3	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	1.87	2.92	224	350	561	µg/L	224	AFC	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,345	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	9,381	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	6,254	µg/L	Discharge Conc < TQL
Total Cadmium	1.06	µg/L	Discharge Conc < TQL
Total Chromium (III)	336	µg/L	Discharge Conc < TQL
Hexavalent Chromium	29.2	µg/L	Discharge Conc < TQL
Total Cobalt	74.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,173	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	5,863	µg/L	Discharge Conc < TQL
Total Lead	12.4	µg/L	Discharge Conc < TQL
Total Manganese	3,909	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.2	µg/L	Discharge Conc < TQL
Total Nickel	204	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	19.5	µg/L	Discharge Conc < TQL
Total Silver	7.41	µg/L	Discharge Conc < TQL
Total Thallium	0.94	µg/L	Discharge Conc < TQL

Proposed Effluent Limitations and Monitoring Requirements

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	1/week	Grab
TSS	XXX	XXX	XXX	30	60	75	1/week	Grab
Total Aluminum	XXX	XXX	XXX	4.0	8.0	10	1/week	Grab
Total Iron	XXX	XXX	XXX	2.0	4.0	5	1/week	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	2.5	1/week	Grab

Proposed Effluent Limitations and Monitoring Requirements

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	Report Daily Max	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	Daily when Discharging	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	Daily when Discharging	Grab
TSS	XXX	XXX	XXX	30	60	75	Daily when Discharging	Grab
Total Aluminum	XXX	XXX	XXX	4.0	8.0	10	Daily when Discharging	Grab
Total Iron	XXX	XXX	XXX	2.0	4.0	5	Daily when Discharging	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	2.5	Daily when Discharging	Grab

Proposed Effluent Limitations and Monitoring Requirements

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	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	Daily when Discharging	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	Daily when Discharging	Grab
Total Copper	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab