pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0000345**
Facility Type	**Industrial**	APS ID	**1034418**
Major / Minor	**Minor**	Authorization ID	**1346740**

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

Applicant and Facility Information

Applicant Name	**PA American Water Company**	Facility Name	**PA American Water Clarion**
Applicant Address	852 Wesley Drive	Facility Address	425 Waterworks Road
	Mechanicsburg, PA 17055-4436		Clarion, PA 16214-2343
Applicant Contact	Dale Warner	Facility Contact	Robert (Bob) Larson
Applicant Phone	(814) 280-0013 (dale.warner@amwater.com)	Facility Phone	(814) 226-5612 (robert.larson@amwater.com)
Client ID	87712	Site ID	452875
SIC Code	4941	Municipality	Clarion Township
SIC Description	Trans. & Utilities - Water Supply	County	Clarion
Date Application Received	March 2, 2021	EPA Waived?	Yes
Date Application Accepted	March 25, 2021	If No, Reason	

Purpose of Application: Renewal of an NPDES Permit for an existing discharge of industrial waste

Summary of Review

This facility is a 4.0 MGD capacity water treatment plant discharging treated filter backwash, sludge settling wastewater, filter to waste rinse water after the backwash, hydrocyclone waste from the actiflo units, and laboratory wastewater.

No changes to the permit were proposed as part of this permit renewal by the permittee.

There are currently 2 open violations listed in EFACTS for this client (4/25/2024).

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.

Approve	Deny	Signatures	Date
X		Adam J. Pesek Adam J. Pesek, E.I.T. / Project Manager	May 1, 2024
			Okay to Draft JCD 5/2/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.349
Latitude	41º 13' 0"	Longitude	-79º 22' 25"
Quad Name	Clarion	Quad Code	04064
Wastewater Description:	Treated filter backwash, sludge settling wastewater, filter to waste rinse water after the backwash, hydrocyclone waste from the actiflo units, and laboratory wastewater		

Receiving Waters	Clarion River	Stream Code	49224
NHD Com ID	102670183	RMI	33.5
Drainage Area	903.1	Yield (cfs/mi^2)	0.0706
Q_{7-10} Flow (cfs)	181.7	Q_{7-10} Basis	USGS 03029500 (’54-’08)
Elevation (ft)	1089.5	Slope (ft/ft)	
Watershed No.	17-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Lower Clarion River Watershed

Background/Ambient Data		Data Source
pH (SU)	7.8	Clarion River TMDL – Sample point TR01
Temperature (°C)	25	Default (CWF)
Hardness (mg/L)	58	Clarion Raw Water Intake 2020 average
Other:	Fe, Mn & Al	WQN #822 – Clarion River @ Cooksburg (1/95-12/98)

Nearest Downstream Public Water Supply Intake		PA American Water Company – Clarion Intake	
PWS Waters	Clarion River	Flow at Intake (cfs)	
PWS RMI	33.46	Distance from Outfall (mi)	0.04

Other Comments:

Low flow was calculated by taking the regulated flow from the upstream gage station at Cooksburg and adding the calculated accumulated streamflow to the discharge point using the pre-regulated flow data from the Cooksburg gage.

171 cfs + [(918 mi – 807 mi) X (51.9 cfs / 807 mi)] = 181.7 cfs

Treatment Facility Summary

Treatment Facility Name: PA American Water Clarion

WQM Permit No.	Issuance Date	Permitted Facilities
1676201	6/22/1976	50-ft. dia. settling tank (capacity = 117,500 gallons)
1602201	9/13/2002	3 lined earthen lagoons (they discharge to the settling tank)

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Physical (Industrial Waste)	Sedimentation	No Disinfection	---

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
---	---	Not Overloaded	Concentration	Beneficial Reuse

Changes Since Last Permit Issuance: None

Compliance History	
Summary of DMRs:	One effluent violation reported at this facility in the last 6 years (total manganese daily maximum in August 2023).
Summary of Inspections:	Last facility inspection was conducted on 11/20/2023. The inspection report did not note any violations.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from March 1, 2022 to February 28, 2023)

Parameter	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22
Flow (MGD) Average Monthly	0.637	0.429	0.438	0.432	0.447	0.463	0.447	0.435	0.417	0.410	0.404	0.469
Flow (MGD) Daily Maximum	0.729	0.455	0.569	0.494	0.565	0.598	0.609	0.530	0.513	0.504	0.492	0.604
pH (S.U.) Minimum	7.1	7.17	6.79	7.03	7.29	7.1	6.22	7.31	7.23	7.1	6.7	6.7
pH (S.U.) Maximum	7.6	7.6	7.6	7.6	7.6	7.7	7.60	7.73	7.70	7.7	7.7	7.4
TRC (mg/L) Average Monthly	0.13	0.15	0.16	0.16	0.07	0.12	0.13	0.14	0.12	0.13	0.19	0.21
TSS (mg/L) Daily Maximum	< 2	< 2.0	< 2.0	6	3	2	5	4	3	2	4	< 2
Total Aluminum (mg/L) Daily Maximum	0.2	0.20	0.2	0.3	0.3	0.5	0.6	0.5	0.40	0.4	0.2	0.4
Total Iron (mg/L) Daily Maximum	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.1	0.09	0.07	< 0.05	< 0.05	< 0.05	< 0.05
Total Manganese (mg/L) Daily Maximum	0.16	0.17	0.25	0.57	0.42	0.85	1.02	1.23	0.89	0.32	0.18	0.13

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.349
Latitude 41º 13' 0" **Longitude** -79º 22' 25"
Wastewater Description: Treated filter backwash, sludge settling wastewater, filter to waste rinse water after the backwash, hydrocyclone waste from the actiflo units, and laboratory wastewater

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Total Suspended Solids	30	Average Monthly		362-2183-003
Total Suspended Solids	40	Daily Maximum		362-2183-003
Aluminum	4.0	Average Monthly		362-2183-003
Aluminum	8.0	Daily Maximum		362-2183-003
Manganese	1.0	Average Monthly		362-2183-003
Manganese	2.0	Daily Maximum		362-2183-003
Total Iron	2.0	Average Monthly		362-2183-003
Total Iron	4.0	Daily Maximum		362-2183-003
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Total Residual Chlorine	1.0	Daily Maximum		362-2183-003
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)

Comments: 362-2183-003 References the Department's technical guidance document entitled "Technology-based Control Requirements for Water Treatment Plant Wastes." The limits are BPT (Best Practical Control Technology) and are not based on actual regulation

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Total Residual Chlorine	1.6	IMAX	TRC Evaluation Spreadsheet

Comments: The Toxics Management Spreadsheet recommended monitoring for to total aluminum after calculating a WQBEL that was less stringent than the BPT limit inputted into the model.

Best Professional Judgment (BPJ) Limitations

Comments: See "Technology-Based Limitations" section above for BPT limits.

Additional Considerations

Comment: Monitoring for PFAS parameters – PFOA, PFOS, PFBS, and HFPO-DA –will not be requested at this time because the facility does not currently have treatment to remove PFAS.

Anti-Backsliding

N/A

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	1.0	1.6	1/day	Grab
TSS	Report	Report	XXX	30.0	60.0	75	1/month	Grab
Total Aluminum	Report	Report	XXX	4.0	8.0	10	1/month	Grab
Total Iron	Report	Report	XXX	2.0	4.0	5	1/month	Grab
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	1/month	Grab

Compliance Sampling Location: Outfall 001 (prior to mixing with any other waters)

Other Comments: Sampling type for the metals and TSS was changed from "8-Hour Composite" to "Grab" as the final clarifier acts like a "composite" and the permittee has been collecting grab samples for the current permit.

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	Input appropriate values in B4:B8 and E4:E7					
4	181.7	= Q stream (cfs)		0.5	= CV Daily	
5	0.349	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 107.376		1.3.2.iii	WLA cfc = 104.676
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 40.011		5.1d	LTA_cfc = 60.853
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **PA American Water Clarion** NPDES Permit No.: **PA0000345** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **WTP wastewater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.349	74	7.4						

					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		139									
	Chloride (PWS)	mg/L		28.2									
	Bromide	mg/L		0.1									
	Sulfate (PWS)	mg/L		47.8									
	Fluoride (PWS)	mg/L		0.08									
Group 2	Total Aluminum	µg/L		4000									
	Total Antimony	µg/L		0.5									
	Total Arsenic	µg/L		0.5									
	Total Barium	µg/L		39.6									
	Total Beryllium	µg/L		0.5									
	Total Boron	µg/L		20									
	Total Cadmium	µg/L		0.1									
	Total Chromium (III)	µg/L		0.5									
	Hexavalent Chromium	µg/L		2									
	Total Cobalt	µg/L		0.4									
	Total Copper	µg/L		1.3									
	Free Cyanide	µg/L		10									
	Total Cyanide	µg/L		10									
	Dissolved Iron	µg/L		0.2									
	Total Iron	µg/L		2000									
	Total Lead	µg/L		0.2									
	Total Manganese	µg/L		1000									
	Total Mercury	µg/L		0.1									
	Total Nickel	µg/L		5									
	Total Phenols (Phenolics) (PWS)	µg/L		10									
	Total Selenium	µg/L		0.5									
	Total Silver	µg/L		0.1									
	Total Thallium	µg/L		0.1									
	Total Zinc	µg/L		4.4									
	Total Molybdenum	µg/L		10									
	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											

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

PA American Water Clarion, NPDES Permit No. PA0000345, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Clarion River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	049224	33.5	1089.5	903.1			Yes
End of Reach 1	049224	33.46	1089	903.5		4	Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	33.5	0.0706	181.7									58	7.8		
End of Reach 1	33.46	0.0706										58	7.8		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	33.5														
End of Reach 1	33.46														

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Toxics Management Spreadsheet
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Model Results

PA American Water Clarion, NPDES Permit No. PA0000345, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 4.599 PMF: 0.121 Analysis Hardness (mg/l): 58.384 Analysis pH: 7.78

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	31,262	
Total Antimony	0	0		0	1,100	1,100	45,851	
Total Arsenic	0	0		0	340	340	14,172	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	875,345	
Total Boron	0	0		0	8,100	8,100	337,633	
Total Cadmium	0	0		0	1.193	1.23	51.5	Chem Translator of 0.967 applied
Total Chromium (III)	0	0		0	366.681	1,160	48,368	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	679	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	3,960	
Total Copper	0	0		0	8.094	8.43	351	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	917	
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	35.781	41.2	1,715	Chem Translator of 0.869 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	68.7	Chem Translator of 0.85 applied
Total Nickel	0	0		0	296.994	298	12,404	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	1.275	1.5	62.5	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	2,709	
Total Zinc	0	0		0	74.274	75.9	3,166	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.838 Analysis Hardness (mg/l): 58.057 Analysis pH: 7.80

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	62,229	
Total Arsenic	0	0		0	150	150	42,429	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,159,729	
Total Boron	0	0		0	1,600	1,600	452,577	
Total Cadmium	0	0		0	0.169	0.18	51.2	Chem Translator of 0.932 applied
Total Chromium (III)	0	0		0	47.479	55.2	15,616	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	2,940	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	5,374	
Total Copper	0	0		0	5.627	5.86	1,658	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	1,471	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	506,313	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	1.386	1.59	450	Chem Translator of 0.87 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	256	Chem Translator of 0.85 applied
Total Nickel	0	0		0	32.830	32.9	9,314	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	1,411	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	3,677	
Total Zinc	0	0		0	74.525	75.6	21,380	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 4.599 THH PMF: 0.838 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.0669

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	11,764,963	WQC applied at RMI 33.46 with a design stream flow of 181.72824 cfs
Chloride (PWS)	0	0		0	250,000	250,000	5,882,481	WQC applied at RMI 33.46 with a design stream flow of 181.72824 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	5,882,481	WQC applied at RMI 33.46 with a design stream flow of 181.72824 cfs
Fluoride (PWS)	0	0		0	2,000	2,000	47,060	WQC applied at RMI 33.46 with a design stream flow of 181.72824 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	132	THH WQC applied at PWS at RMI 33.46
Total Arsenic	0	0		0	10	10.0	235	THH WQC applied at PWS at RMI 33.46
Total Barium	0	0		0	2,400	2,400	56,463	THH WQC applied at PWS at RMI 33.46
Total Boron	0	0		0	3,100	3,100	72,932	THH WQC applied at PWS at RMI 33.46

Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	94.1	THH WQC applied at PWS at RMI 33.46
Dissolved Iron	0	0		0	300	300	7,058	THH WQC applied at PWS at RMI 33.46
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	23,526	THH WQC applied at PWS at RMI 33.46
Total Mercury	0	0		0	0.050	0.05	1.18	THH WQC applied at PWS at RMI 33.46
Total Nickel	0	0		0	610	610	14,351	THH WQC applied at PWS at RMI 33.46
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	118	WQC applied at RMI 33.46 with a design stream flow of 181.72824 cfs
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	5.65	THH WQC applied at PWS at RMI 33.46
Total Zinc	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
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	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	

Total Silver	0	0		0	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

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	20,038	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)	11,765	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	5,882	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	5,882	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	47.1	mg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	132	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	235	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	56,463	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	72,932	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	33.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	15,616	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	435	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	2,538	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	225	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	94.1	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	7,058	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	506,313	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	450	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	23,526	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	1.18	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	7,951	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	118	µg/L	Discharge Conc ≤ 10% WQBEL
Total Selenium	1,411	µg/L	Discharge Conc ≤ 10% WQBEL

Total Silver	40.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	5.65	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	2,029	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS