

Discharge Information

Instructions

Discharge

Stream

Facility: **Pierson Rheems Rheems Quarry**

NPDES Permit No.: **PA0224651**

Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste**

Wastewater Description: **Quarry Pitwater**

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 _n
2.88	326	7.8						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank		
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L	418								
	Chloride (PWS)	mg/L	34.6								
	Bromide	mg/L									
	Sulfate (PWS)	mg/L	44								
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L									
	Total Antimony	µg/L									
	Total Arsenic	µg/L									
	Total Barium	µg/L									
	Total Beryllium	µg/L									
	Total Boron	µg/L									
	Total Cadmium	µg/L									
	Total Chromium (III)	µg/L									
	Hexavalent Chromium	µg/L									
	Total Cobalt	µg/L									
	Total Copper	µg/L	< 2.5								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L									
	Dissolved Iron	µg/L									
	Total Iron	µg/L	< 30								
	Total Lead	µg/L	< 1								
	Total Manganese	µg/L	5.4								
	Total Mercury	µg/L									
	Total Nickel	µg/L									
	Total Phenols (Phenolics) (PWS)	µg/L									
	Total Selenium	µg/L									
	Total Silver	µg/L									
	Total Thallium	µg/L									
Total Zinc	mg/L										
Total Molybdenum	µg/L										
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									
Carbon Tetrachloride	µg/L	<									

Stream / Surface Water Information

Pierson Rheems Rheems Quarry, NPDES Permit No. PA0224651, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: UNT to Donegal 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	007920	9.05	388	0.71			Yes
End of Reach 1	006685	0	229	26032		3	Yes

Q₇₋₁₀

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	9.05	0.1	0.0788									100	7		
End of Reach 1	0	0.1	7440												

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	9.05		0.292												
End of Reach 1	0		12800												

Model Results

Pierson Rheems Rheems Quarry, NPDES Permit No. PA0224651, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All Inputs Results Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc	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	
Total Copper	0	0		0	40.454	42.1	42.9	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	224.569	362	368	Chem Translator of 0.621 applied
Total Manganese	0	0		0	N/A	N/A	N/A	

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Copper	0	0		0	24.330	25.3	25.8	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	1,527	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	8.751	14.1	14.4	Chem Translator of 0.621 applied
Total Manganese	0	0		0	N/A	N/A	N/A	

THH

CCT (min):

THH PMF:

Analysis Hardness (mg/l):

Analysis pH:

PWS PMF:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	#####	WQC applied at RMI 0 with a design stream flow of 7440 cfs
Chloride (PWS)	0	0		0	250,000	250,000	#####	WQC applied at RMI 0 with a design stream flow of 7440 cfs

Sulfate (PWS)	0	0		0	250,000	250,000	#####	WQC applied at RMI 0 with a design stream flow of 7440 cfs
Total Copper	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	1,000	1,000	1,018	

CRL CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	
Total Copper	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	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

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

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)	835,449	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	417,725	mg/L	Discharge Conc ≤ 10% WQBEL
Sulfate (PWS)	417,725	mg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	N/A	N/A	Discharge Conc < TQL
Total Iron	1,527	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	N/A	N/A	Discharge Conc < TQL
Total Manganese	1,018	µg/L	Discharge Conc ≤ 10% WQBEL