

SAINT PAUL REGIONAL WATER SERVICES

PHYSICAL AND CHEMICAL ANALYSIS OF WATER

Sep-21



All results are in parts per million & Samples Measured are Dissolved Ions.
Analytes with Nelac Lab Cert No. are Nelac Accredited analytes

PHYSICAL WATER QUALITY

	Reporting Limit	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Color (Color Units)	4	6	Hach Method 8025	
Loss Ignition (ppm)	84	<84	SM 2540 E	
Non-Volatile Salts (ppm)	84	120	SM 2540 E	
Temperature (°C)	NA	23	SM 2550 B-93	
Total Dissolved Solids (ppm)	140	150	SM 2540 C-2011	1999193
Turbidity (NTU)	0.020	0.028	EPA 180.1	1999193

CHEMICAL WATER QUALITY

	Reporting Limit	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Alkalinity-Total (ppm as CaCO ₃)	0.40	52	SM 2320B	
Carbonate Hardness (ppm as CaCO ₃)	0.40	52	SM 2340 C	
Dissolved Oxygen (ppm)	1.2	5.3	SM 4500-O G (20th)	
Hydrogen Ion-pH	0.04	8.90	SM 4500-H+ B - 2011	1999193
Non-Carbonate Hardness (ppm)	0.40	28	SM 2340 C	
Total Hardness (ppm as CaCO ₃)-EDTA method	0.40	80	SM 2340 C	
Total Organic Carbon (ppm as C)	2.00	4.46	SM 5310 B - 2011	1999193

Total Hardness (grains/Gal as CaCO₃)-EDTA method is 4.68

CHEMICAL WATER QUALITY - INORGANIC NONMETALS

	Reporting Limit	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Ammonia Nitrogen (ppm as N)	0.100	0.920	EPA 350.1	
Bromide (ppm as Br-1)	0.0003	<0.0003	EPA 300.0	2001911 Subcontracted to Pace Analytical
Chloride-Cl (ppm as Cl ⁻¹)	8	34	SM 4500-CL-B (20th)	
Chlorine Residual (ppm Cl as Cl ₂)	0.085	3.05	Hach 10101	
Fluoride-F (ppm as F ⁻¹)	0.08	0.67	EPA 9214	
Nitrate, Nitrite Nitrogen (ppm as N)	0.082	0.120	EPA 353.2	
Sulfate (ppm as SO ₄)	2.7	12.9	Hach 8051	
Sulfur-S (ppm as S)	2.7	4.3	Hach 8051	
Sulfide-S ²⁻ (ppm as S ²⁻)	0.020	<0.02	Hach 8131	
Total Phosphorus-P (ppm as P)	0.025	<0.025	EPA 365.1	
Total Nitrogen-N (ppm as N)	0.200	0.70	SM 5310 B - Modified	

CHEMICAL WATER QUALITY - METALS

	Reporting Limit	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Aluminum-Al (ppm as Al)	0.0013	0.0149	EPA 200.8	1999193
Arsenic-As (ppm as As)	0.0001	0.0007	EPA 200.8	1999193
Cadmium-Cd (ppm as Cd)	0.0001	<0.0001	EPA 200.8	1999193
Calcium-Ca (ppm as Ca)	0.4000	22	SM 2340 C	
Copper-Cu (ppm as Cu)	0.0026	<0.0026	EPA 200.8	1999193
Hexavalent Chromium (ppm as Cr ⁶⁺)	0.0400	<0.04	Hach 8023	
Iron-Fe (ppm as Fe)	0.0633	<0.0633	EPA 200.8	
Lead-Pb (ppm as Pb)	0.0001	<0.0001	EPA 200.8	1999193
Magnesium-Mg (ppm as Mg)	0.4000	7	SM 2340 C	
Manganese-Mn (ppm as Mn)	0.0011	<0.0011	EPA 200.8	1999193
Silicon-Si (ppm as Si)	NA	NA	EPA 200.8	
Sodium-Na (ppm as Na)	0.0007	21.08	EPA 200.8	
Strontium-Sr (ppm as Sr)	0.0002	0.0712	EPA 200.8	
Zinc-Zn (ppm as Zn)	0.0027	<0.0027	EPA 200.8	1999193

MICROBIOLOGY WATER QUALITY

	Number of Samples	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Total Coliform Count 35°C/100 ml	240	Absent	SM 9223 B-2016 (IDEXX Colilert)	1999193
E. Coli Count 35°C/100 ml	240	Absent	SM 9223 B-2016 (IDEXX Colilert)	1999193