

SAINT PAUL REGIONAL WATER SERVICES
PHYSICAL AND CHEMICAL ANALYSIS OF WATER
NOV 2019



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	<4	Hach Method 8025	
Loss Ignition (ppm)	84	<84	SM 2540 E	
Non-Volatile Salts (ppm)	84	150	SM 2540 E	
Temperature (°C)	0.02	5	SM 2550 B-93	1557107
Total Dissolved Solids (ppm)	140	200	SM 2540 C-97	1557107
Turbidity (NTU)	0.020	0.055	SM 2130 B-94	1557107

CHEMICAL WATER QUALITY

	Reporting Limit	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Alkalinity-Total (ppm as CaCO ₃)	0.40	60	SM 2320B	
Carbonate Hardness (ppm as CaCO ₃)	0.40	60	SM 2340 C	
Dissolved Oxygen (ppm)	1.2	9.3	SM 4500-O G (20th)	
Hydrogen Ion-pH	0.04	8.88	SM 4500-H+ B-96	1557107
Non-Carbonate Hardness (ppm)	0.40	31	SM 2340 C	
Total Hardness (ppm as CaCO ₃)-EDTA method	0.40	91	SM 2340 C	
Total Organic Carbon (ppm as C)	2.00	5.64	SM 5310 B (Online)	1557107

Total Hardness (grains/Gal as CaCO₃)-EDTA method is 5.32

CHEMICAL WATER QUALITY - INORGANIC NONMETALS

	Reporting Limit	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Ammonia Nitrogen (ppm as N)	0.020	0.971	Hach 10205	
Bromide (ppm as Br-1)	0.080	<0.08	EPA 300.0	1531837 Subcontracted to Pace Analytical
Chloride-Cl (ppm as Cl ⁻¹)	8	46	SM 4500-CL-B (20th)	
Chlorine Residual (ppm Cl as Cl ₂)	0.085	3.29	Hach 10101	
Fluoride-F (ppm as F ⁻¹)	0.08	0.68	EPA 9214	
Nitrate, Nitrite Nitrogen (ppm as N)	0.100	0.379	EPA 353.2	1557107
Sulfate (ppm as SO ₄)	2.7	11.7	Hach 8051	
Sulfur-S (ppm as S)	2.7	3.9	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	1557107
Total Nitrogen-N (ppm as N)	0.200	0.98	SM 5310 B - Modified	

CHEMICAL WATER QUALITY - METALS

	Reporting Limit	EFFLUENT	Method Reference	Nelac Lab Cert. No.
Aluminum-Al (ppm as Al)	0.00095	0.0170	EPA 200.8	
Arsenic-As (ppm as As)	0.00007	0.0006	EPA 200.8	
Cadmium-Cd (ppm as Cd)	0.00005	0.000055	EPA 200.8	
Calcium-Ca (ppm as Ca)	0.40	24	SM 2340 C	
Copper-Cu (ppm as Cu)	0.00083	0.0016	EPA 200.8	
Hexavalent Chromium (ppm as Cr ⁶⁺)	0.040	<0.04	Hach 8023	
Iron-Fe (ppm as Fe)	0.00519	<0.00519	EPA 200.8	
Lead-Pb (ppm as Pb)	0.00008	0.000152	EPA 200.8	
Magnesium-Mg (ppm as Mg)	0.40	8	SM 2340 C	
Manganese-Mn (ppm as Mn)	0.00021	0.00022	EPA 200.8	
Silicon-Si (ppm as Si)	NA	NA	EPA 200.8	
Sodium-Na (ppm as Na)	0.00071	24.39	EPA 200.8	
Strontium-Sr (ppm as Sr)	0.00009	0.062	EPA 200.8	
Zinc-Zn (ppm as Zn)	0.00017	0.0010	EPA 200.8	

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-97 (IDEXX Colilert)	1557107
E. Coli Count 35°C/100 ml	240	Absent	SM 9223 B-97 (IDEXX Colilert)	1557107