

Chemical Parameters 2014	<sup>1</sup> Units	NB Health Advisory Limit	Typical Distribution System Water
<b>Benzene</b> - found in gasoline and used in industrial processes	ug/L	5	ND
<b>Carbon Tetrachloride</b> - produced while manufacturing other hydrocarbons	ug/L	5	ND
<b>1,2 Dichlorobenzene</b> - found in paint removers and degreasers	ug/L	200	ND
<b>1,4 Dichlorobenzene</b> - found in paint removers and degreasers	ug/L	5	ND
<b>1,2 Dichloroethane</b> - used in preparation of poly vinyl chloride (PVC)	ug/L	5	ND
<b>Dichloromethane</b> - volatile liquid used in paint strippers, degreasers and aerosols	ug/L	50	ND
<b>Ethyl Benzene</b> - highly volatile; primary source is petroleum industry	ug/L	2.4	ND
<b>Tetrachloroethylene</b> - solvent used in dry cleaning and metal cleaning industries	ug/L	30	ND
<b>Total Trihalomethanes</b> - by-products associated with chlorine disinfection	ug/L	100	16
<b>Total Xylenes</b> - highly volatile, primary source is petroleum industry	ug/L	300	ND
<b>Toluene</b> - highly volatile; primary source is petroleum industry	ug/L	24	ND
<b>Trichloroethylene</b> - highly volatile liquid	ug/L	5	ND
<b>Vinyl Chloride</b> - synthetic chemical with no known natural sources	ug/L	2	ND
<b>Benzo(a)pyrene</b> - created by combustion of organic matter, including fuels	ug/L	0.01	ND
<b>Pentachlorophenol</b> - used in pesticides and wood preservatives	ug/L	60	ND
<b>Inorganic Parameters - a range of materials that are both naturally occurring and artificially produced</b>			
<b>Alkalinity</b> - the capacity of water to neutralize acids	mg/L	~	100
<b>Aluminium</b> - inorganic metallic element	mg/L	~	0.009
<b>Antimony</b> - element used in metal manufacturing	ug/L	6	<1.0
<b>Arsenic</b> - can occur naturally or come from industrial effluents	ug/L	10	<1.5
<b>Barium</b> - occurs naturally and is produced by industry	mg/L	1	0.027
<b>Boron</b> - naturally occurring in over 80 minerals	mg/L	5	0.011
<b>Bromide</b> - natural element, often associated with salt deposits	mg/L	~	<0.1
<b>Cadmium</b> - present in solder and as an impurity in galvanized pipe	ug/L	5	<0.01
<b>Calcium</b> - this mineral helps produce "hard" water	mg/L	~	40.2
<b>Chloride</b> - found in road salts and chemical industry effluents	mg/L	250	38.1
<b>Chromium</b> - natural metallic element	mg/L	0.05	<0.01
<b>Conductivity</b> - measures the water's capacity to carry an electric current	uS/cm	~	337
<b>Copper</b> - can stain laundry when level is above Health Advisory Limit	mg/L	1	0.034
<b>Fluoride</b> - occurs naturally in many minerals	mg/L	1.5	0.05
<b>Iron</b> - can cause staining in laundry and plumbing	mg/L	0.3	<0.02
<b>Lead</b> - can be found in older plumbing fixtures, and in solder	ug/L	10	<1.0
<b>Magnesium</b> - along with calcium, contributes to forming "hard" water	mg/L	~	3.54
<b>Manganese</b> - metal; can cause laundry and plumbing to stain	mg/L	0.05	0.006
<b>Nitrate</b> - often used in inorganic fertilizers	mg/L	45	0.3
<b>Nitrate / Nitrite</b> - naturally occurring ions, used in inorganic fertilizers	mg/L	10	0.29
<b>Nitrite</b> - naturally occurring, used in food preservatives	mg/L	3	<0.05
<b>pH</b> - measure of acidity or causticity	pH	6.5 - 8.5	8.095
<b>Potassium</b> - seventh most abundant element in the earth's crust	mg/L	~	7.9
<b>Selenium</b> - metal used to make red glass	ug/L	10	<1
<b>Sodium</b> - sixth most abundant element in the earth's crust	mg/L	≤200	15.9
<b>Sulfate</b> - used extensively in the chemical industry; also occurs naturally	mg/L	500	15
<b>Thallium</b> - rare metallic element	ug/L	~	<0.1
<b>Total Hardness</b> - caused by dissolved minerals	mg/L	<sup>2</sup> See Note	115
<b>Turbidity</b> - a measure of suspended solids in the water	NTU	1	0.1
<b>Uranium</b> - naturally occurring element	ug/L	20	0.2
<b>Zinc</b> - found in some plumbing fixtures and galvanized metal	mg/L	5	0.002

<sup>1</sup> Note: mg/L are parts per million; ug/L are parts per billion

<sup>2</sup> Note Public acceptance of hardness varies considerably. Levels up to 100 mg/L are considered "acceptable" with levels greater than 200 mg/L poor but tolerable. Unacceptable levels are greater than 500 mg/L.

#### Hardness Scale (as per Health Canada)

Soft 0 to <60 mg/L; 0 - 3.5 grains

Medium hard 60 to <120 mg/L 3.5 - 7.0 grains *The City of Fredericton's water is medium hard.*

Hard 120 to < 180 mg/L 7.0 - 10.5 grains

Very hard 180 mg/L & above. 10.5 grains & above

**Manganese** commonly occurs in groundwater in New Brunswick. At concentrations greater than 0.15 mg/L, manganese can stain plumbing fixtures and laundry and may cause undesirable taste in beverages. The City of Fredericton's Water Treatment Plants remove manganese through a process of chlorination and filtration.