



City of Calgary Water Treatment Plant Summary

January 1, 2023 to December 31, 2023

PARAMETER	UNITS	Bears paw Treated Water (Entering the Distribution System)			Maximum Acceptable Concentration or Guideline ¹	Common Source
		Minimum	Maximum	Average		
Alkalinity, Total	mg/L as CaCO ₃	103	134	119	No Guidelines	Erosion of natural deposits in watershed.
Aluminum	mg/L	0.031	0.102	0.059	0.100 (O) (Annual Average)	Water treatment process
Ammonia	mg/L as N	<0.05			No Guidelines	Naturally occurring; released from agricultural or industrial wastes.
Antimony	mg/L	<0.0005			0.006	Erosion of natural deposits in watershed
Arsenic	mg/L	<0.0005			0.010	Erosion of natural deposits in watershed
Atrazine + metabolites	mg/L	<0.0010			0.005	Leaching and/or runoff from agricultural or rural use
Barium	mg/L	0.026	0.036	0.032	2.0	Erosion of natural deposits in watershed
Benzene	mg/L	<0.0005			0.005	Releases or spills from industrial use
Benzo[a]pyrene	mg/L	<0.000005			0.00004	Distribution System materials
Beryllium	mg/L	<0.0005			No Guidelines	Contamination from ceramic applications and manufacturing of aerospace, electronics and mechanical industries
Bicarbonate	mg/L as CaCO ₃	103	134	119	No Guidelines	Erosion of natural deposits in watershed
Boron	mg/L	<0.002	0.009	0.005	5	Naturally occurring; leaching or runoff from industrial use
Bromate	mg/L	<0.0095			0.01	Possible contamination in hypochlorite solution
Bromoxynil	mg/L	<0.0001			0.005	Leaching and/or runoff from agricultural or rural use
Cadmium	mg/L	<0.0005			0.007	Erosion of natural deposits in watershed
Calcium	mg/L	32	51	43	No Guidelines	Erosion of natural deposits in watershed
Carbonate	mg/L as CaCO ₃	<20			No Guidelines	Erosion of natural deposits in watershed
Carbon Tetrachloride	mg/L	<0.0005			0.002	Industrial effluents and leaching from hazardous waste sites
Chlorate	mg/L	<0.10			1	Possible contamination in hypochlorite solution
Chloride	mg/L	3.5	8.0	4.6	250 (A)	Naturally occurring, dissolved salt deposits, highway salt
Chlorine, free	mg/L	0.85	1.13	0.99	No Guidelines	Water treatment process
Chlorite	mg/L	<0.10			1	Possible contamination in hypochlorite solution, water treatment process
Chlorpyrifos	mg/L	<0.0010			0.09	Leaching and/or runoff from agricultural or rural use
Chromium	mg/L	<0.0005	0.0006	<0.0005	0.05	Erosion of natural deposits in watershed
Cobalt	mg/L	<0.0005			No Guidelines	Erosion of natural deposits in watershed.
Coliforms, <i>E. coli</i>	MPN/100mL	<1			0	Domestic animals, wildlife and human waste.
Coliforms, Total	MPN/100mL	<1			0	Soil, domestic animals and wildlife.
Color	TCU	<2			15 (A)	Erosion of natural deposits in watershed.
Conductivity at 25°C	uS/cm	287	380	338	No Guidelines	Leaching and/or runoff from agricultural or rural use
Copper	mg/L	<0.0005			2 1 (A)	Erosion of natural deposits in watershed.
Cryptosporidium	oocysts/100L	Not Tested			No Guidelines ²	Domestic animals, wildlife and human waste.
Cryptosporidium, Log Reduction Ratio ³	no units	1.00	1.33	1.33	>=1	Domestic animals, wildlife and human waste.
Cyanide	mg/L	<0.0005			0.2	Industrial and mining effluents; Release from organic compounds.
Cyanobacterial toxins – total microcystin	mg/L	<0.00010			0.0015	Naturally occurring; released from blooms of blue-green algae
Diazinon	mg/L	<0.0010			0.02	Run off from agricultural or other uses.
Dicamba	mg/L	<0.0002			0.11	Leaching and/or runoff from agricultural or rural use
1,2-Dichlorobenzene	mg/L	<0.0005			0.2 0.003(A)	Releases or spills from industrial use
1,4-Dichlorobenzene	mg/L	<0.0005			0.005 0.001(A)	Releases or spills from industrial use
1,1-Dichloroethylene	mg/L	<0.0005			0.014	Releases or spills from industrial use
1,2-Dichloroethane	mg/L	<0.0005			0.005	Releases or spills from industrial use
Dichloromethane	mg/L	<0.0005			0.05	Industrial and municipal wastewater discharges
2,4-Dichlorophenol	mg/L	<0.0002			0.9 0.0003(A)	By-product of chlorination.
2,4-D	mg/L	<0.0001			0.1	Leaching and/or runoff from use as a weed controller
Diclofop-methyl	mg/L	<0.00090			0.009	Leaching and/or runoff from use as a weed controller
Sum of Dimethoate	mg/L	<0.0050			0.02	Leaching and/or runoff from agricultural or rural use
1,4-Dioxane	mg/L	<0.0010			0.05	Releases or spills from landfills and industrial use
Diquat	mg/L	<0.0070			0.05	Leaching and/or runoff from agricultural or rural use
Diuron	mg/L	<0.00005			0.15	Leaching and/or runoff from use in controlling vegetation
Ethylbenzene	mg/L	<0.0005			0.14 0.0016 (A)	Emissions, effluents or spills from petroleum and chemical industries
Fluoride	mg/L	0.09	0.14	0.11	1.5	Erosion of natural deposits in watershed. ⁴



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Giardia	cysts/100L	Not Tested			No Guidelines ²	Domestic animals, wildlife and human waste.
Giardia, Log Reduction Ratio ³	no units	1.34	1.94	1.78	>=1	Domestic animals, wildlife and human waste.
Glyphosate	mg/L	<0.010			0.28	Leaching and/or runoff from use as a weed controller.
Gross Alpha	Bq/L	<0.08	<0.15	<0.08	0.5	Naturally occurring; emissions from nuclear reactors
Gross Beta	Bq/L	<0.05	<0.07	<0.05	1.0	Naturally occurring; emissions from nuclear reactors
Haloacetic Acids, Total	mg/L	0.0040	0.0130	0.0070	0.08 (Annual Average)	By-product of chlorination.
Hardness	mg/L as CaCO ₃	126	198	164	No Guidelines	Erosion of natural deposits in watershed.
Iron	mg/L	<0.010	0.017	<0.010	0.3 (A)	Erosion of natural deposits in watershed.
Lead	mg/L	<0.0005			0.005	Leaching from plumbing (pipes, solder, brass fittings, and lead service lines)
Lithium	mg/L	0.0021	0.0035	0.0028	No Guidelines	Releases or spills from industrial use
Magnesium	mg/L	11.5	17.5	14.1	No Guidelines	Erosion of natural deposits in watershed.
Malathion	mg/L	<0.0010			0.19	Leaching and/or runoff from agricultural or rural use
Manganese	mg/L	<0.0005	0.0007	<0.0005	0.12 0.02 (A)	Erosion of natural deposits in watershed.
MCPA (2-methyl-4-chlorophenoxyacetic acid)	mg/L	<0.00002			0.35	Leaching and/or runoff from agricultural and other uses
MCPP (methylchlorophenoxy propionic acid)	mg/L	<0.00005			0.015 (A)	Leaching and/or runoff from agricultural and other uses
Mercury	mg/L	<0.0000019			0.001	Erosion of natural deposits in watershed
Metolachlor	mg/L	<0.0010			0.05	Leaching and/or runoff from agricultural and other uses
Metribuzin	mg/L	<0.0010			0.08	Leaching and/or runoff from agricultural or rural use
Molybdenum	mg/L	<0.0005	0.0009	0.0007	No Guidelines	Leaching and/or runoff from industrial, agricultural and other uses
Monochlorobenzene	mg/L	<0.0005			0.08 0.03(A)	Releases or spills from industrial effluents
MTBE (methyl tertiary-butyl ether)	mg/L	<0.0005			0.015 (A)	Spills from gasoline refineries, filling stations and gasoline powered boats; seepage into groundwater from leaking storage tanks
Nickel	mg/L	<0.0005	0.0006	<0.0005	No Guidelines	Leaching from plumbing (pipes, solder, and brass fittings)
Nitrate	mg/L as N	0.051	0.149	0.094	10	Erosion of natural deposits in watershed
Nitrite	mg/L as N	<0.005			1	Erosion of natural deposits in watershed
Nitritotriacetic acid (NTA)	mg/L	<0.050			0.4	Sewage contamination
Nitrogen-Phosphorus Pesticides, Total ⁵	mg/L	<0.01			No Guidelines	Leaching and/or runoff from agricultural or rural use
N-Nitrosodimethylamine (NDMA)	mg/L	<0.0000020			0.00004	By-product of chlorination; industrial and sewage treatment plant effluents
Nitrogen, total (TKN)	mg/L	<0.10	0.36	<0.10	No Guidelines	Erosion of natural deposits in watershed
Odour	Scale = 0-12	7.2	11.0	9.1	Inoffensive	Biological, industrial, or treatment disinfection sources
Pentachlorophenol	mg/L	<0.0001			0.06 0.03 (A)	By-product of chlorination
Perfluorooctane Sulfonate (PFOS)	mg/L	<0.000020			0.0006	Synthetic chemical used in consumer products and fire-fighting foams for their water and oil repellent properties.
Perfluorooctanoic Acid (PFOA)	mg/L	<0.000010			0.0002	Synthetic chemical used in consumer products and fire-fighting foams for their water and oil repellent properties.
pH	pH units	7.3	7.8	7.5	7.0 - 10.5 (O)	Influenced by the dissolved minerals in the water, temperature and water treatment processes.
Phosphorus, Total	mg/L	0.001	0.007	0.003	No Guidelines	Leaching and/or runoff from agricultural and other uses
Picloram	mg/L	<0.0002			0.19	Leaching and/or runoff from agricultural and other uses
Potassium	mg/L	0.4	0.6	0.5	No Guidelines	Erosion of natural deposits in watershed.
Polycyclic Aromatic Hydrocarbons ⁶ (PAH)	mg/L	<0.0001			No Guidelines	Industrial sources
Selenium	mg/L	<0.0005	0.0007	<0.0005	0.05	Naturally occurring (erosion and weathering of rocks and soils) and release from coal ash from coal-fired power plants and mining, refining of copper and other metals
Silicon, dissolved	mg/L	1.20	1.79	1.49	No Guidelines	Erosion of natural deposits in watershed.
Silver	mg/L	<0.001			No Guidelines	Naturally occurring (erosion and weathering of rocks and soils)
Simazine	mg/L	<0.0010			0.01	Leaching and/or runoff from agricultural and other uses
Sodium	mg/L	3.4	4.9	4.2	200 (A)	Erosion of natural deposits in watershed.
Strontium	mg/L	0.148	0.219	0.180	7.0	Erosion of natural deposits in watershed.
Sulphate	mg/L	43	79	52	500 (A)	Erosion of natural deposits in watershed.
Sulphide	mg/L as H ₂ S	<0.0018	0.0031	<0.0018	0.05 (A)	Can occur in the distribution system from the reduction of sulphates by sulphate-reducing bacteria; industrial wastes
Taste	mg/L	Not Tested			Inoffensive (A)	Biological or industrial sources



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Temperature	°C	1.1	18.1	8.2	15 (A)	Surface water temperature.
Terbufos	mg/L	<0.0005			0.001	Leaching and/or runoff from agricultural and other uses
Tetrachloroethylene	mg/L	<0.0005			0.01	Industrial effluents or spills
2,3,4,6-Tetrachlorophenol	mg/L	<0.0005			0.1	By-product of chlorination; industrial effluents and use of pesticides
Thallium	mg/L	<0.0005			No Guidelines	Erosion of natural deposits in watershed.
Tin	mg/L	<0.0005			No Guidelines	Industrial effluents or spills
Titanium	mg/L	<0.0005			No Guidelines	Industrial effluents or spills
Toluene	mg/L	<0.0005			0.06 0.024(A)	Emissions, effluents or spills from petroleum and chemical industries
Total Dissolved Solids	mg/L	155	237	189	500 (A)	Erosion of natural deposits in watershed.
Total Organic Carbon	mg/L	0.4	0.8	0.6	No Guidelines	Erosion of natural deposits in watershed.
Trichloroethylene	mg/L	<0.0005			0.005	Industrial effluents and spills from improper disposals
2,4,6-Trichlorophenol	mg/L	<0.0005			0.005 0.002 (A)	By-product of chlorination; industrial effluents and spills
Trifluralin	mg/L	<0.0010			0.045	Runoff from agricultural uses
Total Trihalomethanes ⁷ (TTHMs)	mg/L	0.0035	0.0123	0.0069	0.1 (Annual Average)	By-product of chlorination.
Turbidity	NTU	<0.05	0.09	<0.05	1.0	Suspended particles in solution.
Uranium	mg/L	<0.0005	0.0006	<0.0005	0.02	Industrial effluents or spills
Vanadium	mg/L	<0.0005			No Guideline	Naturally occurring (erosion and weathering of rocks and soils)
Vinyl Chloride	mg/L	<0.0005			0.002	Industrial effluents; degradation product from organic solvents in groundwater; leaching from polyvinyl chloride pipes
Virus, Log Reduction Ratio ³	no units	1.5			>=1	Domestic animals, wildlife and human waste.
Xylenes, total ⁷	mg/L	<0.0010			0.09 0.02 (A)	Emissions, effluents or spills from petroleum and chemical industries
Zinc	mg/L	<0.003	0.009	<0.003	5.0 (A)	Erosion of natural deposits in watershed. Leaching may occur from galvanized pipes, hot water tanks and brass fittings.

Legend

¹ Maximum acceptable concentrations and guidelines as determined by Health Canada and the Alberta Environment and Protected Areas license to operate

² Raw water enteric protozoa concentrations are used to determine the log reduction required

³ Log Reduction Ratios are calculated by the minimum total log reduction achieved / log reduction required

⁴ The City of Calgary ceased fluoridation of its drinking water on May 19, 2011

⁵ Total concentration calculated based on 13 Nitrogen-Phosphorus regulated pesticides

⁶ Total concentration calculated based on EPA 16 Priority PAH compounds

⁷ Calculated parameter based on individual analytes

(O) Operating guidance as determined by Health Canada

(A) Aesthetic Objective as determined by Health Canada

(AEPA) Alberta Environment and Parks provincial guidance

< Indicates not detected above the specified value

Bq/L = Becquerel per litre

mg/L = milligrams per litre, or parts per million (ppm)

MPN = Most-Probable Number

NTU = Nephelometric Turbidity Units

TCU = True Colour Units

Information Sources

[Health Canada Guidelines for Canadian Drinking Water Quality, Summary Table \(Sept. 2022\)](#)

[Health Canada Water Quality - Reports and Publications](#)

[Alberta Environment & Protected Areas](#)