



TEST RESULTS

REPORTED TO Stettler, Town of (Alberta)
 PROJECT Distribution System - Biannual Analysis

WORK ORDER 8070481
 REPORTED 2018-07-19 16:48

G: T: Hydraulic (8070481-01) | Matrix: Water | Sampled: 2018-07-04 11:06 To 2018-07-04 11:40

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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Anions

Bromate	< 0.010	MAC = 0.01	0.010 mg/L	2018-07-10	
Chloride	6.91	AO ≤ 250	0.50 mg/L	2018-07-09	
Fluoride	0.65	MAC = 1.5	0.10 mg/L	2018-07-09	
Nitrate (as N)	0.110	MAC = 10	0.050 mg/L	2018-07-09	HT1
Nitrite (as N)	< 0.050	MAC = 1	0.050 mg/L	2018-07-09	HT1
Sulfate	65.0	AO ≤ 500	1.0 mg/L	2018-07-09	

General Parameters

Alkalinity, Total (as CaCO3)	125	N/A	2.0 mg/L	2018-07-10	
Bicarbonate (HCO3)	153	N/A	2.0 mg/L	2018-07-10	
Carbonate (CO3)	< 2.0	N/A	2.0 mg/L	2018-07-10	
Hydroxide (OH)	< 2.0	N/A	2.0 mg/L	2018-07-10	
Ammonia, Total (as N)	0.569	None Required	0.050 mg/L	2018-07-11	
Carbon, Total Organic	2.84	N/A	0.50 mg/L	2018-07-13	
Chlorine, Total	1.50	None Required	0.02 mg/L	2018-07-06	HT2
Chlorine, Free	0.05	N/A	0.02 mg/L	2018-07-06	HT2
Colour, True	< 5.0	AO ≤ 15	5.0 CU	2018-07-06	
Conductivity (EC)	388	N/A	2.0 µS/cm	2018-07-11	
Cyanide, Free	< 0.0050	MAC = 0.2	0.0050 mg/L	2018-07-14	
Nitriofacetic Acid	< 0.20	MAC = 0.4	0.20 mg/L	2018-07-12	HT1
pH	7.26	7.0-10.5	0.10 pH units	2018-07-10	HT2
Sulfide, Total	< 0.020	AO ≤ 0.05	0.020 mg/L	2018-07-10	
Turbidity	0.16	OG < 1	0.10 NTU	2018-07-06	HT1

Calculated Parameters

Total Trihalomethanes	0.0454	MAC = 0.1	0.00400 mg/L	N/A	
Chloramines	1.45	MAC = 3	0.0200 mg/L	N/A	
Hardness, Total (as CaCO3)	178	None Required	0.500 mg/L	N/A	
Ion Balance	103	N/A	%	N/A	
Nitrate+Nitrite (as N)	0.110	N/A	0.0500 mg/L	N/A	
Solids, Total Dissolved	226	AO ≤ 500	2.00 mg/L	N/A	

Dissolved Metals

Calcium, dissolved	46.6	N/A	0.20 mg/L	2018-07-14	
Iron, dissolved	< 0.010	N/A	0.010 mg/L	2018-07-14	
Magnesium, dissolved	15.0	N/A	0.010 mg/L	2018-07-14	
Manganese, dissolved	0.00223	N/A	0.00020 mg/L	2018-07-14	
Potassium, dissolved	1.50	N/A	0.10 mg/L	2018-07-14	
Sodium, dissolved	14.0	N/A	0.10 mg/L	2018-07-14	

Total Metals

Aluminum, total	0.0619	OG < 0.1	0.0050 mg/L	2018-07-14	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2018-07-14	
Arsenic, total	0.00054	MAC = 0.01	0.00050 mg/L	2018-07-14	

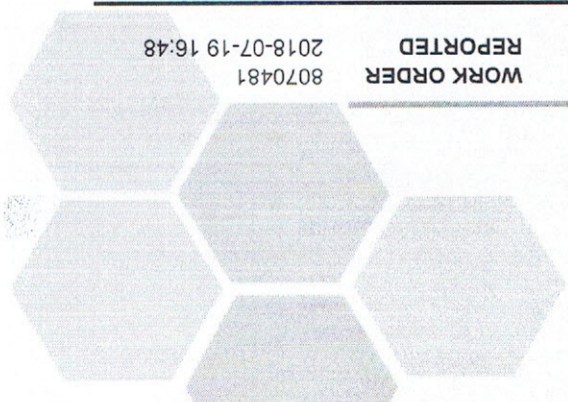
Caring About Results, Obviously.

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Total Metals, Continued

Analyte	Result	Guideline	RL Units
Barium, total	0.0916	MAC = 1	0.0050 mg/L
Boron, total	0.0328	MAC = 5	0.0050 mg/L
Cadmium, total	< 0.010	MAC = 5	0.010 µg/L
Calcium, total	49.3	None Required	0.20 mg/L
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L
Copper, total	0.0108	AO ≤ 1	0.00040 mg/L
Iron, total	0.053	AO ≤ 0.3	0.010 mg/L
Lead, total	< 0.00020	MAC = 0.01	0.00020 mg/L
Magnesium, total	16.1	None Required	0.010 mg/L
Manganese, total	0.0104	AO ≤ 0.05	0.00020 mg/L
Mercury, total	< 0.010	MAC = 1	0.010 µg/L
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L
Silicon, total	1.2	N/A	1.0 mg/L
Silver, total	< 0.050	N/A	0.050 µg/L
Sodium, total	14.4	AO ≤ 200	0.10 mg/L
Uranium, total	0.253	MAC = 20	0.020 µg/L
Zinc, total	0.0051	AO ≤ 5	0.0040 mg/L

Microbiological Parameters

Microcystin, total	< 0.00014	MAC = 0.0015	0.00014 mg/L
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Acid Herbicides

2,4-D	< 0.00010	MAC = 0.1	0.00010 mg/L
Dicamba	< 0.00010	MAC = 0.12	0.00010 mg/L
MCPA	< 0.00020	MAC = 0.1	0.00020 mg/L
Picloram	< 0.00010	MAC = 0.19	0.00010 mg/L

Miscellaneous Herbicides

Glyphosate	< 0.050	MAC = 0.28	0.050 mg/L
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Pesticides, Herbicides, and Fungicides

Atrazine and metabolites	< 0.000100	MAC = 0.005	0.000100 mg/L
Azinphos-methyl	< 0.000200	MAC = 0.02	0.000200 mg/L
Bromoxynil	< 0.000200	MAC = 0.005	0.000200 mg/L
Chlorpyrifos	< 0.000010	MAC = 0.09	0.000010 mg/L
Cyanazine	< 0.000100	N/A	0.000100 mg/L
Diazinon	< 0.000020	MAC = 0.02	0.000020 mg/L
Dicofop-methyl	< 0.000100	MAC = 0.009	0.000100 mg/L
Dimethoate	< 0.000200	MAC = 0.02	0.000200 mg/L
Duron	< 0.000200	MAC = 0.15	0.000200 mg/L
Malathion	< 0.000100	MAC = 0.19	0.000100 mg/L
Methoxychlor	< 0.000050	N/A	0.000050 mg/L
Metolachlor	< 0.000100	MAC = 0.05	0.000100 mg/L
Metribuzin	< 0.000200	MAC = 0.08	0.000200 mg/L

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Pesticides, Herbicides, and Fungicides, Continued

Phorate	< 0.000100	MAC = 0.002	0.000100 mg/L	2018-07-15	
Simazine	< 0.000200	MAC = 0.01	0.000200 mg/L	2018-07-15	
Terbufos	< 0.000100	MAC = 0.001	0.000100 mg/L	2018-07-15	
Triallate	< 0.000100	N/A	0.000100 mg/L	2018-07-15	
Trifluralin	< 0.000200	MAC = 0.045	0.000200 mg/L	2018-07-15	

Chlorinated Phenols

2,4-Dichlorophenol	< 0.00020	AO ≤ 0.0003	0.00020 mg/L	2018-07-17	
2,4,6-Trichlorophenol	< 0.00050	AO ≤ 0.002	0.00050 mg/L	2018-07-17	
2,3,4,6-Tetrachlorophenol	< 0.00050	AO ≤ 0.001	0.00050 mg/L	2018-07-17	
Pentachlorophenol	< 0.00050	AO ≤ 0.03	0.00050 mg/L	2018-07-17	

Polycyclic Aromatic Hydrocarbons (PAH)

Benzo(a)pyrene	< 0.010	MAC = 0.04	0.010 µg/L	2018-07-16	
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Volatile Organic Compounds (VOC)

Benzene	< 0.0005	MAC = 0.005	0.0005 mg/L	2018-07-13	
Bromodichloromethane	0.0022	N/A	0.0010 mg/L	2018-07-13	
Bromoform	< 0.0010	N/A	0.0010 mg/L	2018-07-13	
Carbon tetrachloride	< 0.0005	MAC = 0.002	0.0005 mg/L	2018-07-13	
Monochlorobenzene	< 0.0010	AO ≤ 0.03	0.0010 mg/L	2018-07-13	
Chloroform	0.0432	N/A	0.0010 mg/L	2018-07-13	
Dibromochloromethane	< 0.0010	N/A	0.0010 mg/L	2018-07-13	
1,2-Dichlorobenzene	< 0.0005	AO ≤ 0.003	0.0005 mg/L	2018-07-13	
1,4-Dichlorobenzene	< 0.0010	AO ≤ 0.001	0.0010 mg/L	2018-07-13	
1,2-Dichloroethane	< 0.0010	MAC = 0.005	0.0010 mg/L	2018-07-13	
1,1-Dichloroethylene	< 0.0010	MAC = 0.014	0.0010 mg/L	2018-07-13	
Dichloromethane	< 0.0030	MAC = 0.05	0.0030 mg/L	2018-07-13	
Ethylbenzene	< 0.0010	AO ≤ 0.0016	0.0010 mg/L	2018-07-14	
Methyl tert-butyl ether	< 0.0010	AO ≤ 0.015	0.0010 mg/L	2018-07-13	
Tetrachloroethylene	< 0.0010	MAC = 0.01	0.0010 mg/L	2018-07-13	
Toluene	< 0.0010	AO ≤ 0.024	0.0010 mg/L	2018-07-14	
Trichloroethylene	< 0.0010	MAC = 0.005	0.0010 mg/L	2018-07-13	
Vinyl chloride	< 0.0010	MAC = 0.002	0.0010 mg/L	2018-07-13	
Xylenes (total)	< 0.0020	AO ≤ 0.02	0.0020 mg/L	2018-07-14	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.
HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

APPENDIX 1: SUPPORTING INFORMATION

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Analysis Description	Method Ref.	Technique	Location
Acid Herbicides in Water	EPA 8151A*	DCM Extraction with Diazomethane Derivatization, GC-MS	Richmond
Alkalinity in Water	SM 2320 B* (2011)	Titration with H2SO4	Edmonton
Ammonia, Total in Water	SM 4500-NH3 D* (2011)	Ion Selective Electrode	Edmonton
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Edmonton
Bromate in Water	SM 4110 B (2011)	Ion Chromatography	Sublet
Carbon, Total Organic in Water	SM 5310 B (2011)	Combustion, Infrared CO2 Detection	Kelowna
Chlorine, Free in Water	SM 4500-Cl G (2011)	Colorimetry (DPD)	Edmonton
Chlorine, Total in Water	SM 4500-Cl G (2011)	Colorimetry (DPD)	Edmonton
Colour, True in Water	SM 2120 C (2011)	Spectrophotometry (456 nm)	Edmonton
Conductivity in Water	SM 2510 B (2011)	Conductivity Meter	Edmonton
Cyanide, Free in Water	ASTM D7237-15a	Flow Injection with Gas Diffusion and Amperometry	Kelowna
Cyanobacterial Toxins in Water	EPA 546*	Adda Enzyme-Linked Immunosorbent Assay (ELISA)	Sublet
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)	Richmond
Glyphosate in Water	EPA 547*	Direct Aqueous Injection HPLC with Post-Column Derivatization and Fluorescence Detection	Richmond
Hardness in Water	SM 2340 B (2011)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Ion Balance in Water	SM 1030 E (2011)	Calculation: 100 x ((Cations)-[Anions])/((Cations)+[Anions])	N/A
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Nitritotrifluoroacetic Acid in Water	EPA 430.1	Manual Colorimetry (Zinc-Zincinon)	Kelowna
Pesticides in Water	EPA 3510C* / EPA 8270D*	Liquid-Liquid DCM Extraction (B/N) / GC-MSD (SIM)	Richmond
pH in Water	SM 4500-H+ B (2011)	Electrometry	Edmonton
Phenols, Chlorinated in Water	EPA 3510C* / EPA 8270D	Liquid-Liquid DCM Extraction (Acidic) / GC-MSD (SIM)	Richmond
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MSD (SIM)	Richmond
Solids, Total Dissolved in Water	SM 1030 E (2011)	Calculation: 100 x ((Cations)-[Anions])/((Cations)+[Anions])	N/A
Sulfide, Total in Water	SM 4500-S2 D* (2011)	Colorimetry (Methylene Blue)	Edmonton
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)	Richmond
Turbidity in Water	SM 2130 B (2011)	Nephelometry	Edmonton
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method