

<b>REPORTED TO</b>	Grand Forks, City of PO Box 220 GRAND FORKS, BC V0H 1H0	<b>TEL</b>	(250) 442-2434
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<b>ATTENTION</b>	Dean Chapman	<b>WORK ORDER</b>	6111514
<b>PO NUMBER</b>		<b>RECEIVED / TEMP</b>	2016-11-22 10:00 / 8°C
<b>PROJECT</b>	General Potability	<b>REPORTED</b>	2016-11-29
<b>PROJECT INFO</b>		<b>COC NUMBER</b>	40837.5581

**General Comments:**

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



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General Potability

**WORK ORDER REPORTED** 6111514  
2016-11-29

Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	APHA 2320 B*	Titration with H2SO4	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Coliforms, Total (MF-CCA) in Water	APHA 9222*	Membrane Filtration / Incubation on Chromocult Agar	Kelowna
Colour, True in Water	APHA 2120 C	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection Analysis with In-Line Ultraviolet Digestion and Amperometric Detection	Kelowna
E. coli (MF-CCA) in Water	APHA 9222*	Membrane Filtration / Incubation on Chromocult Agar	Kelowna
Hardness (as CaCO3) in Water	APHA 2340 B*	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated)	N/A
Langelier Index in Water	APHA 2330 B	Calculation	N/A
Mercury, total by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Solids, Total Dissolved (calc) in Water	APHA 1030 E	Calculation: 100 x ([Cations]-[Anions])/([Cations]+[Anions])	N/A
Temperature (lab) in Water	APHA 2550 B	Thermometer	Kelowna
Total Metals by ICPMS in Water	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Turbidity in Water	APHA 2130 B	Nephelometry	Kelowna

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

**Method Reference Descriptions:**

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation  
 ASTM ASTM International Test Methods  
 EPA United States Environmental Protection Agency Test Methods

**Glossary of Terms:**

MRL Method Reporting Limit  
 < Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences  
 AO Aesthetic objective  
 MAC Maximum acceptable concentration (health based)  
 OG Operational guideline (treated water)  
 °C Degrees Celcius  
 CFU/100 mL Colony Forming Units per 100 millilitres  
 CU Colour Units (referenced against a platinum cobalt standard)  
 mg/L Milligrams per litre  
 NTU Nephelometric Turbidity Units  
 pH units pH < 7 = acidic, pH > 7 = basic  
 µS/cm Microsiemens per centimetre

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**Standards / Guidelines Referenced in this Report:**

Guidelines for Canadian Drinking Water Quality (Oct 2014)

Website: [http://www.hc-sc.gc.ca/ewh-semt/alt\\_formats/pdf/pubs/water-eau/sum\\_guide-res\\_recom/sum\\_guide-res\\_recom-eng.pdf](http://www.hc-sc.gc.ca/ewh-semt/alt_formats/pdf/pubs/water-eau/sum_guide-res_recom/sum_guide-res_recom-eng.pdf)

*Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user*

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Analyte	Result / Recovery	Standard / Guideline	MRL / Limits	Units	Prepared	Analyzed	Notes
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**Sample ID: Well # 2 (6111514-01) [Water] Sampled: 2016-11-21 00:00**

**Anions**

Chloride	7.71	AO ≤ 250	0.10	mg/L	N/A	2016-11-24	
Fluoride	0.36	MAC = 1.5	0.10	mg/L	N/A	2016-11-24	
Nitrate (as N)	0.816	MAC = 10	0.010	mg/L	N/A	2016-11-24	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	N/A	2016-11-24	
Sulfate	47.0	AO ≤ 500	1.0	mg/L	N/A	2016-11-24	

**General Parameters**

Alkalinity, Total (as CaCO3)	170	N/A	2	mg/L	N/A	2016-11-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-11-24	
Alkalinity, Bicarbonate (as CaCO3)	170	N/A	2	mg/L	N/A	2016-11-24	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-11-24	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2	mg/L	N/A	2016-11-24	
Colour, True	< 5	AO ≤ 15	5	CU	N/A	2016-11-23	
Conductivity (EC)	441	N/A	2	µS/cm	N/A	2016-11-24	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	N/A	2016-11-22	
pH	8.01	6.5-8.5	0.01	pH units	N/A	2016-11-24	HT2
Temperature	23	N/A		°C	N/A	2016-11-24	HT2
Turbidity	0.11	OG < 0.1	0.10	NTU	N/A	2016-11-22	

**Calculated Parameters**

Hardness, Total (as CaCO3)	230	N/A	0.50	mg/L	N/A	N/A	
Langelier Index	0.6	N/A	-5.0	-	N/A	2016-11-29	
Solids, Total Dissolved (calc)	253	N/A	1.00	mg/L	N/A	N/A	

**Total Metals**

Aluminum, total	< 0.005	OG < 0.1	0.005	mg/L	2016-11-24	2016-11-25	
Antimony, total	0.0001	MAC = 0.006	0.0001	mg/L	2016-11-24	2016-11-25	
Arsenic, total	0.0064	MAC = 0.01	0.0005	mg/L	2016-11-24	2016-11-25	
Barium, total	0.031	MAC = 1	0.005	mg/L	2016-11-24	2016-11-25	
Boron, total	0.031	MAC = 5	0.004	mg/L	2016-11-24	2016-11-25	
Cadmium, total	< 0.00001	MAC = 0.005	0.00001	mg/L	2016-11-24	2016-11-25	
Calcium, total	57.5	N/A	0.2	mg/L	2016-11-24	2016-11-25	
Chromium, total	< 0.0005	MAC = 0.05	0.0005	mg/L	2016-11-24	2016-11-25	
Cobalt, total	< 0.00005	N/A	0.00005	mg/L	2016-11-24	2016-11-25	
Copper, total	< 0.0002	AO ≤ 1	0.0002	mg/L	2016-11-24	2016-11-25	
Iron, total	< 0.01	AO ≤ 0.3	0.01	mg/L	2016-11-24	2016-11-25	
Lead, total	0.0002	MAC = 0.01	0.0001	mg/L	2016-11-24	2016-11-25	
Magnesium, total	20.9	N/A	0.01	mg/L	2016-11-24	2016-11-25	
Manganese, total	0.0357	AO ≤ 0.05	0.0002	mg/L	2016-11-24	2016-11-25	
Mercury, total	< 0.00002	MAC = 0.001	0.00002	mg/L	2016-11-24	2016-11-27	
Molybdenum, total	0.0096	N/A	0.0001	mg/L	2016-11-24	2016-11-25	
Nickel, total	< 0.0002	N/A	0.0002	mg/L	2016-11-24	2016-11-25	
Potassium, total	2.16	N/A	0.02	mg/L	2016-11-24	2016-11-25	
Selenium, total	0.0013	MAC = 0.05	0.0005	mg/L	2016-11-24	2016-11-25	
Sodium, total	9.86	AO ≤ 200	0.02	mg/L	2016-11-24	2016-11-25	
Uranium, total	0.00322	MAC = 0.02	0.00002	mg/L	2016-11-24	2016-11-25	
Zinc, total	< 0.004	AO ≤ 5	0.004	mg/L	2016-11-24	2016-11-25	

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**Sample ID: Well # 2 (6111514-01) [Water] Sampled: 2016-11-21 00:00, Continued**

**Microbiological Parameters**

Coliforms, Total	< 1	MAC = None Detected	1	CFU/100 mL	N/A	2016-11-22	
E. coli	< 1	MAC = None Detected	1	CFU/100 mL	N/A	2016-11-22	

**Sample / Analysis Qualifiers:**

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.