



CERTIFICATE OF ANALYSIS

REPORTED TO Glenmore Ellison Improvement District
445 Glenmore Road
KELOWNA, BC V1V 1Z6

ATTENTION Andrew Cammell

PO NUMBER

PROJECT General Potability

PROJECT INFO

WORK ORDER 7092766

RECEIVED / TEMP 2017-09-29 14:17 / 16°C

REPORTED 2018-10-11 13:49

COC NUMBER No Number

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks



You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry



It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve



Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

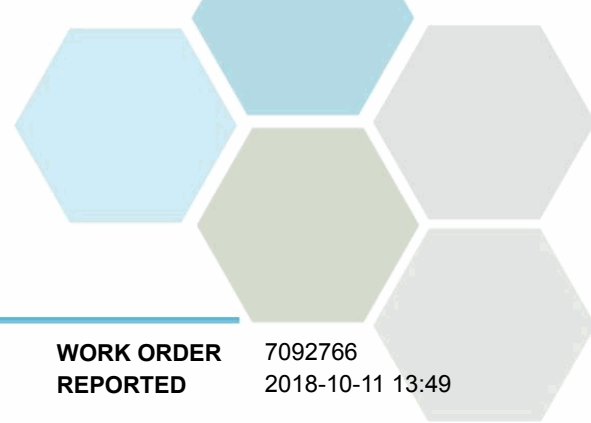
If you have any questions or concerns, please contact me at jshanko@caro.ca

Authorized By:

Jennifer Shanko, A.Sc.T.
Account Manager

1-888-311-8846 | www.caro.ca

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7



TEST RESULTS

REPORTED TO PROJECT Glenmore Ellison Improvement District
General Potability

WORK ORDER REPORTED 7092766
2018-10-11 13:49

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
---------	--------	-----------	----	-------	----------	-----------

WT# 3363 - Union Rd Post Res (7092766-03) | Matrix: Water | Sampled: 2017-09-29 10:31

Anions

Chloride	9.09	AO ≤ 250	0.10	mg/L	2017-10-01	
Fluoride	0.31	MAC = 1.5	0.10	mg/L	2017-10-01	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2017-10-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2017-10-01	
Sulfate	30.5	AO ≤ 500	1.0	mg/L	2017-10-01	

Calculated Parameters

Hardness, Total (as CaCO3)	137	None Required	0.500	mg/L	N/A	
Langelier Index	-0.2	N/A	-5.0	-	2017-10-06	
Solids, Total Dissolved	175	AO ≤ 500	1.00	mg/L	N/A	

General Parameters

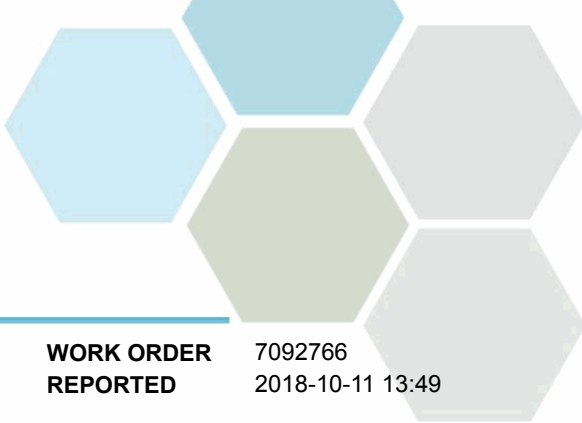
Alkalinity, Total (as CaCO3)	117	N/A	1.0	mg/L	2017-10-03	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2017-10-03	
Alkalinity, Bicarbonate (as CaCO3)	117	N/A	1.0	mg/L	2017-10-03	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2017-10-03	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2017-10-03	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2017-09-29	
Conductivity (EC)	298	N/A	2.0	µS/cm	2017-10-03	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2017-10-04	
pH	7.60	7.0-10.5	0.10	pH units	2017-10-03	HT2
Temperature, at pH	21.9	N/A		°C	2017-10-03	HT2
Turbidity	0.42	OG < 1	0.10	NTU	2017-10-01	

Microbiological Parameters

Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2017-09-29	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2017-09-29	

Total Metals

Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2017-10-05	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2017-10-05	
Arsenic, total	0.00054	MAC = 0.01	0.00050	mg/L	2017-10-05	
Barium, total	0.0233	MAC = 1	0.0050	mg/L	2017-10-05	
Boron, total	0.0124	MAC = 5	0.0050	mg/L	2017-10-05	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2017-10-05	
Calcium, total	35.1	None Required	0.20	mg/L	2017-10-05	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2017-10-05	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2017-10-05	
Copper, total	0.00297	AO ≤ 1	0.00040	mg/L	2017-10-05	
Iron, total	0.010	AO ≤ 0.3	0.010	mg/L	2017-10-05	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2017-10-05	
Magnesium, total	11.8	None Required	0.010	mg/L	2017-10-05	
Manganese, total	0.0117	AO ≤ 0.05	0.00020	mg/L	2017-10-05	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2017-10-05	



TEST RESULTS

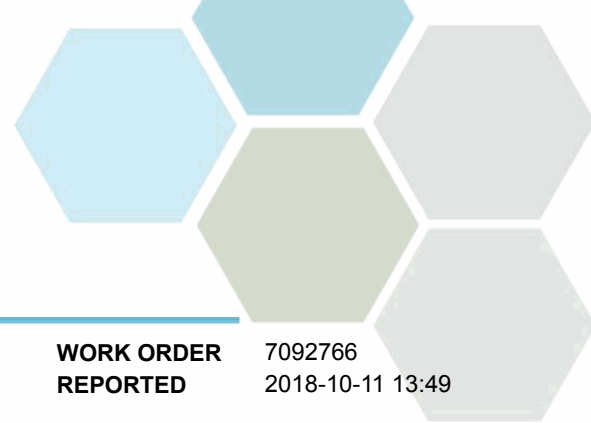
REPORTED TO PROJECT Glenmore Ellison Improvement District
General Potability

WORK ORDER REPORTED 7092766
2018-10-11 13:49

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
WT# 3363 - Union Rd Post Res (7092766-03) Matrix: Water Sampled: 2017-09-29 10:31, Continued					
<i>Total Metals, Continued</i>					
Molybdenum, total	0.00357	N/A	0.00010 mg/L	2017-10-05	
Nickel, total	0.00043	N/A	0.00040 mg/L	2017-10-05	
Potassium, total	2.76	N/A	0.10 mg/L	2017-10-05	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2017-10-05	
Sodium, total	14.3	AO ≤ 200	0.10 mg/L	2017-10-05	
Uranium, total	0.00244	MAC = 0.02	0.000020 mg/L	2017-10-05	
Zinc, total	< 0.0040	AO ≤ 5	0.0040 mg/L	2017-10-05	

Sample Qualifiers:

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



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Glenmore Ellison Improvement District
General Potability

WORK ORDER REPORTED 7092766
2018-10-11 13:49

Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2011)	Titration with H2SO4	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Coliforms, Total in Water	SM 9222* (2006)	Membrane Filtration / Chromocult Agar	Kelowna
Colour, True in Water	SM 2120 C (2011)	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	SM 2510 B (2011)	Conductivity Meter	Kelowna
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection with In-Line UV Digestion and Amperometry	Kelowna
E. coli in Water	SM 9222* (2006)	Membrane Filtration / Chromocult Agar	Kelowna
Hardness in Water	SM 2340 B* (2011)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	N/A
Langelier Index in Water	SM 2330 B (2010)	Calculation	N/A
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna
Solids, Total Dissolved in Water	SM 1030 E (2011)	Calculation: $100 \times \frac{([\text{Cations}] - [\text{Anions}])}{([\text{Cations}] + [\text{Anions}])}$	N/A
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Turbidity in Water	SM 2130 B (2011)	Nephelometry	Kelowna

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

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CU	Colour Units (referenced against a platinum cobalt standard)
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, pH > 7 = basic
µS/cm	Microsiemens per centimetre
ASTM	ASTM International Test Methods
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody 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. The quality control (QC) data is available upon request