



CERTIFICATE OF ANALYSIS

REPORTED TO Cherry Ridge Management
158 North Fork Road
Cherryville, BC V0E 2G3

ATTENTION Melanie Staker

PO NUMBER

PROJECT Creek Monitoring

PROJECT INFO

WORK ORDER 21H1700

RECEIVED / TEMP 2021-08-16 08:44 / 22.0°C

REPORTED 2021-08-23 09:48

COC NUMBER B099435

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/IEC 17025:2017 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.

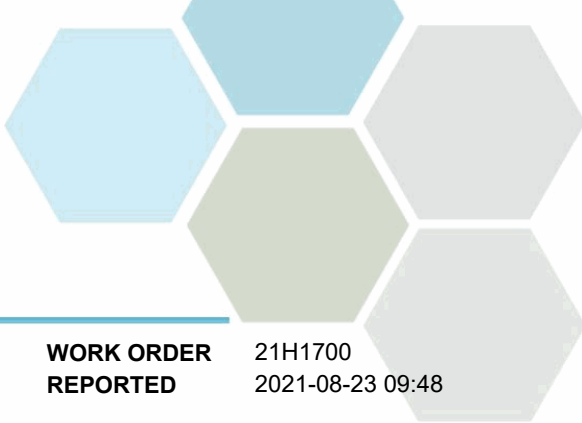
If you have any questions or concerns, please contact me at teamcaro@caro.ca

Authorized By:

Team CARO
Client Service Representative

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TEST RESULTS

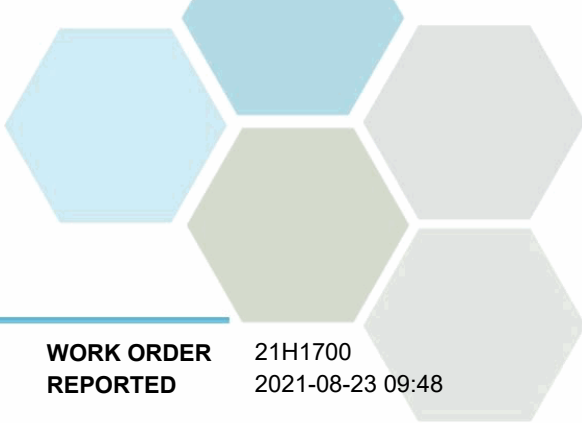
REPORTED TO PROJECT Cherry Ridge Management Creek Monitoring

WORK ORDER REPORTED 21H1700
2021-08-23 09:48

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
North Fork (21H1700-01) Matrix: Water Sampled: 2021-08-15 12:52					
<i>Anions</i>					
Bromide	< 0.10	N/A	0.10 mg/L	2021-08-17	
Chloride	< 0.10	AO ≤ 250	0.10 mg/L	2021-08-17	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2021-08-17	
Nitrate (as N)	< 0.010	MAC = 10	0.010 mg/L	2021-08-17	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2021-08-17	
Sulfate	12.3	AO ≤ 500	1.0 mg/L	2021-08-17	
<i>Calculated Parameters</i>					
Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100 mg/L	N/A	
Nitrogen, Total	0.135	N/A	0.0500 mg/L	N/A	
<i>General Parameters</i>					
Alkalinity, Total (as CaCO3)	98.4	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Bicarbonate (as CaCO3)	98.4	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2021-08-20	
Ammonia, Total (as N)	< 0.050	None Required	0.050 mg/L	2021-08-18	
Conductivity (EC)	200	N/A	2.0 µS/cm	2021-08-20	
Nitrogen, Total Kjeldahl	0.135	N/A	0.050 mg/L	2021-08-20	
pH	8.16	7.0-10.5	0.10 pH units	2021-08-20	HT2
Phosphorus, Total (as P)	0.0126	N/A	0.0050 mg/L	2021-08-20	
Turbidity	0.40	OG < 1	0.10 NTU	2021-08-18	
<i>Microbiological Parameters</i>					
Coliforms, Total	308	MAC = 0	1 MPN/100 mL	2021-08-16	
Coliforms, Fecal	9	0	1 MPN/100 mL	2021-08-16	
E. coli	9	MAC = 0	1 MPN/100 mL	2021-08-16	

Cherry Creek @ Hall (21H1700-02) | Matrix: Water | Sampled: 2021-08-15 13:20

<i>Anions</i>					
Bromide	< 0.10	N/A	0.10 mg/L	2021-08-17	
Chloride	1.30	AO ≤ 250	0.10 mg/L	2021-08-17	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2021-08-17	
Nitrate (as N)	< 0.010	MAC = 10	0.010 mg/L	2021-08-17	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2021-08-17	
Sulfate	16.0	AO ≤ 500	1.0 mg/L	2021-08-17	
<i>Calculated Parameters</i>					
Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100 mg/L	N/A	
Nitrogen, Total	0.127	N/A	0.0500 mg/L	N/A	
<i>General Parameters</i>					



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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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Cherry Creek @ Hall (21H1700-02) | Matrix: Water | Sampled: 2021-08-15 13:20, Continued

General Parameters, Continued

Alkalinity, Total (as CaCO3)	120	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Bicarbonate (as CaCO3)	120	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-08-20	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2021-08-18	
Conductivity (EC)	243	N/A	2.0	µS/cm	2021-08-20	
Nitrogen, Total Kjeldahl	0.127	N/A	0.050	mg/L	2021-08-20	
pH	8.28	7.0-10.5	0.10	pH units	2021-08-20	HT2
Phosphorus, Total (as P)	0.0090	N/A	0.0050	mg/L	2021-08-20	
Turbidity	0.32	OG < 1	0.10	NTU	2021-08-18	

Microbiological Parameters

Coliforms, Total	517	MAC = 0	1	MPN/100 mL	2021-08-16	
Coliforms, Fecal	17	0	1	MPN/100 mL	2021-08-16	
E. coli	13	MAC = 0	1	MPN/100 mL	2021-08-16	

Picnic Shuswap (21H1700-03) | Matrix: Water | Sampled: 2021-08-15 11:50

Anions

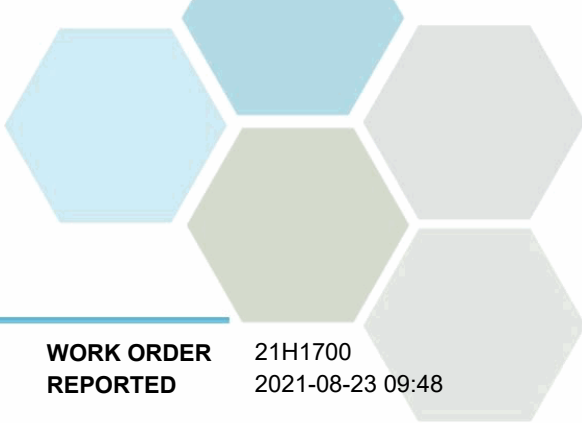
Bromide	< 0.10	N/A	0.10	mg/L	2021-08-17	
Chloride	0.31	AO ≤ 250	0.10	mg/L	2021-08-17	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2021-08-17	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2021-08-17	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-08-17	
Sulfate	6.0	AO ≤ 500	1.0	mg/L	2021-08-17	

Calculated Parameters

Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	0.198	N/A	0.0500	mg/L	N/A	

General Parameters

Alkalinity, Total (as CaCO3)	50.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Bicarbonate (as CaCO3)	50.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-08-20	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2021-08-18	
Conductivity (EC)	109	N/A	2.0	µS/cm	2021-08-20	
Nitrogen, Total Kjeldahl	0.198	N/A	0.050	mg/L	2021-08-20	
pH	7.81	7.0-10.5	0.10	pH units	2021-08-20	HT2
Phosphorus, Total (as P)	0.0091	N/A	0.0050	mg/L	2021-08-20	
Turbidity	0.46	OG < 1	0.10	NTU	2021-08-18	



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Picnic Shuswap (21H1700-03) | Matrix: Water | Sampled: 2021-08-15 11:50, Continued

Microbiological Parameters

Coliforms, Total	727	MAC = 0	1	MPN/100 mL	2021-08-16	
Coliforms, Fecal	6	0	1	MPN/100 mL	2021-08-16	
E. coli	6	MAC = 0	1	MPN/100 mL	2021-08-16	

Ferry Creek (21H1700-04) | Matrix: Water | Sampled: 2021-08-15 12:15

Anions

Bromide	< 0.10	N/A	0.10	mg/L	2021-08-17	
Chloride	0.90	AO ≤ 250	0.10	mg/L	2021-08-17	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2021-08-17	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2021-08-17	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-08-17	
Sulfate	31.4	AO ≤ 500	1.0	mg/L	2021-08-17	

Calculated Parameters

Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100	mg/L	N/A	
Nitrogen, Total	0.0770	N/A	0.0500	mg/L	N/A	

General Parameters

Alkalinity, Total (as CaCO3)	166	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Phenolphthalein (as CaCO3)	5.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Bicarbonate (as CaCO3)	156	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Carbonate (as CaCO3)	10.0	N/A	1.0	mg/L	2021-08-20	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-08-20	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2021-08-18	
Conductivity (EC)	350	N/A	2.0	µS/cm	2021-08-20	
Nitrogen, Total Kjeldahl	0.077	N/A	0.050	mg/L	2021-08-20	
pH	8.44	7.0-10.5	0.10	pH units	2021-08-20	HT2
Phosphorus, Total (as P)	0.0097	N/A	0.0050	mg/L	2021-08-20	
Turbidity	0.26	OG < 1	0.10	NTU	2021-08-18	

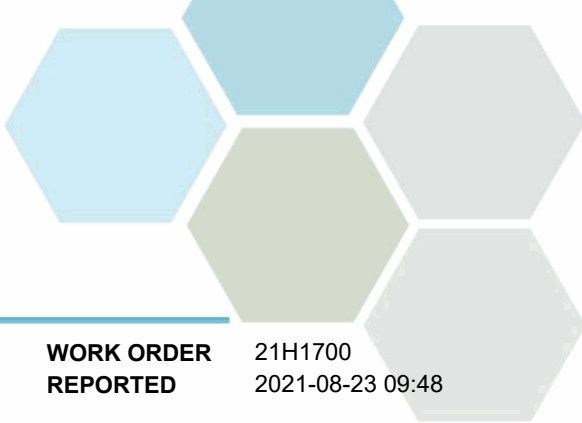
Microbiological Parameters

Coliforms, Total	816	MAC = 0	1	MPN/100 mL	2021-08-16	
Coliforms, Fecal	11	0	1	MPN/100 mL	2021-08-16	
E. coli	11	MAC = 0	1	MPN/100 mL	2021-08-16	

1/2 Mile Creek (21H1700-05) | Matrix: Water | Sampled: 2021-08-15 13:40

Anions

Bromide	< 0.10	N/A	0.10	mg/L	2021-08-17	
Chloride	0.23	AO ≤ 250	0.10	mg/L	2021-08-17	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2021-08-17	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2021-08-17	



TEST RESULTS

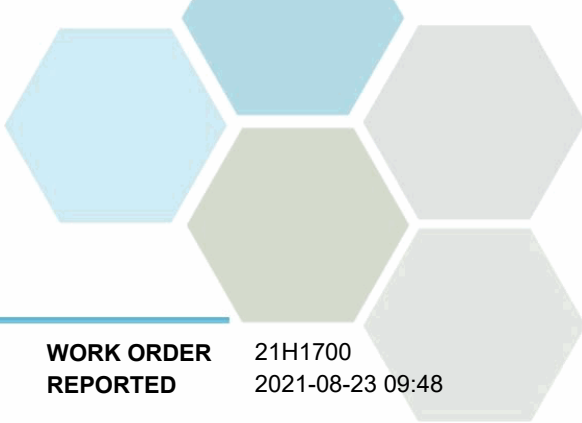
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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
1/2 Mile Creek (21H1700-05) Matrix: Water Sampled: 2021-08-15 13:40, Continued					
<i>Anions, Continued</i>					
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2021-08-17	
Sulfate	33.8	AO ≤ 500	1.0 mg/L	2021-08-17	
<i>Calculated Parameters</i>					
Nitrate+Nitrite (as N)	< 0.0100	N/A	0.0100 mg/L	N/A	
Nitrogen, Total	0.0920	N/A	0.0500 mg/L	N/A	
<i>General Parameters</i>					
Alkalinity, Total (as CaCO3)	186	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Bicarbonate (as CaCO3)	186	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2021-08-20	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2021-08-20	
Ammonia, Total (as N)	< 0.050	None Required	0.050 mg/L	2021-08-18	
Conductivity (EC)	382	N/A	2.0 µS/cm	2021-08-20	
Nitrogen, Total Kjeldahl	0.092	N/A	0.050 mg/L	2021-08-20	
pH	8.24	7.0-10.5	0.10 pH units	2021-08-20	HT2
Phosphorus, Total (as P)	0.0082	N/A	0.0050 mg/L	2021-08-20	
Turbidity	0.48	OG < 1	0.10 NTU	2021-08-18	
<i>Microbiological Parameters</i>					
Coliforms, Total	236	MAC = 0	1 MPN/100 mL	2021-08-16	
Coliforms, Fecal	3	0	1 MPN/100 mL	2021-08-16	
E. coli	2	MAC = 0	1 MPN/100 mL	2021-08-16	

Sample Qualifiers:

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	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH3 G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Coliforms, Fecal in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Coliforms, Total in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	✓	Kelowna
E. coli in Water	NA / SM 9223 (2017)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	✓	Kelowna
pH in Water	SM 4500-H+ B (2017)	Electrometry	✓	Kelowna
Phosphorus, Total in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2017)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	✓	Kelowna

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

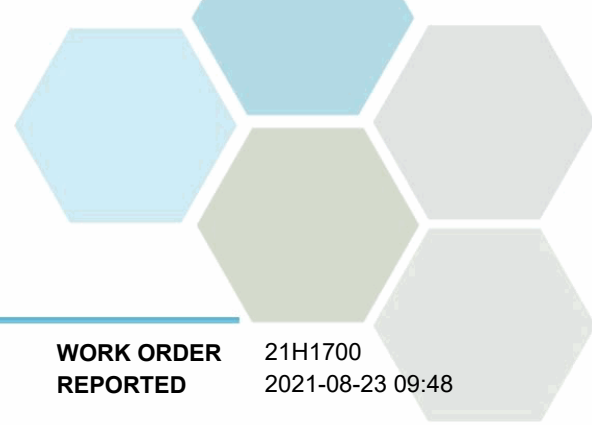
Glossary of Terms:

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
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
MPN/100 mL	Most Probable Number per 100 millilitres
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, pH > 7 = basic
µS/cm	Microsiemens per centimetre
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

Guidelines Referenced in this Report:

[Guidelines for Canadian Drinking Water Quality \(Health Canada, June 2019\)](#)

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



APPENDIX 1: SUPPORTING INFORMATION

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General Comments:

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Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager: teamcaro@caro.ca

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