



CERTIFICATE OF ANALYSIS

| | | | |
|---------------------|---|---------------------------------|----------------------------|
| REPORTED TO | Cherry Ridge Management 158 North Fork Road Cherryville, BC V0E 2G3 | WORK ORDER | 22K1537 |
| ATTENTION | Melanie Staker | RECEIVED / TEMP REPORTED | 2022-11-14 09:01 / - 0.9°C |
| PO NUMBER | Cherry Ridge Management Creek Monitoring | REPORTED | 2022-11-21 10:40 |
| PROJECT | Creek Monitoring | COC NUMBER | No Number |
| PROJECT INFO | | | |

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.

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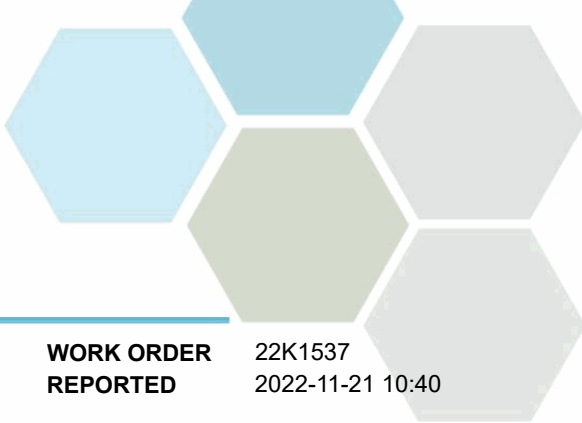
If you have any questions or concerns, please contact me at TeamCaro@caro.ca

Authorized By:

Team CARO
Client Service Representative

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 | #108 4475 Wayburne Drive Burnaby, BC V5G 4X4



TEST RESULTS

REPORTED TO PROJECT Cherry Ridge Management Creek Monitoring

WORK ORDER REPORTED 22K1537
2022-11-21 10:40

| Analyte | Result | Guideline | RL | Units | Analyzed | Qualifier |
|---|--------|-----------|----|-------|----------|----------------|
| North Fork Cherry Creek (22K1537-01) Matrix: Water Sampled: 2022-11-13 11:15 | | | | | | F1, FILT, PRES |

Anions

| | | | | | | |
|----------------|---------|----------|-------|------|------------|--|
| Chloride | 0.15 | AO ≤ 250 | 0.10 | mg/L | 2022-11-14 | |
| Nitrate (as N) | 0.022 | MAC = 10 | 0.010 | mg/L | 2022-11-14 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | 2022-11-14 | |
| Sulfate | 14.4 | AO ≤ 500 | 1.0 | mg/L | 2022-11-14 | |

Calculated Parameters

| | | | | | | |
|------------------------|----------|-----|--------|------|-----|--|
| Nitrate+Nitrite (as N) | 0.0225 | N/A | 0.0100 | mg/L | N/A | |
| Nitrogen, Total | < 0.0500 | N/A | 0.0500 | mg/L | N/A | |

Dissolved Metals

| | | | | | | |
|---------------------|----------|-----|--------|------|------------|--|
| Aluminum, dissolved | < 0.0050 | N/A | 0.0050 | mg/L | 2022-11-19 | |
|---------------------|----------|-----|--------|------|------------|--|

General Parameters

| | | | | | | |
|-----------------------------|----------|---------------|--------|----------|------------|-----|
| Ammonia, Total (as N) | < 0.050 | None Required | 0.050 | mg/L | 2022-11-14 | |
| Conductivity (EC) | 220 | N/A | 2.0 | µS/cm | 2022-11-16 | |
| Nitrogen, Total Kjeldahl | < 0.050 | N/A | 0.050 | mg/L | 2022-11-18 | |
| pH | 8.12 | 7.0-10.5 | 0.10 | pH units | 2022-11-16 | HT2 |
| Phosphorus, Total (as P) | 0.0057 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Phosphorus, Total Dissolved | < 0.0050 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Turbidity | 0.17 | OG < 1 | 0.10 | NTU | 2022-11-14 | |

Microbiological Parameters

| | | | | | | |
|---------------------------|-----|---------|---|------------|------------|--|
| Coliforms, Total (Q-Tray) | 26 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |
| E. coli (Q-Tray) | < 1 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |

Half Mile Creek (22K1537-02) | Matrix: Water | Sampled: 2022-11-13 12:00

F1, FILT, PRES

Anions

| | | | | | | |
|----------------|---------|----------|-------|------|------------|--|
| Chloride | 0.32 | AO ≤ 250 | 0.10 | mg/L | 2022-11-14 | |
| Nitrate (as N) | < 0.010 | MAC = 10 | 0.010 | mg/L | 2022-11-14 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | 2022-11-14 | |
| Sulfate | 39.6 | AO ≤ 500 | 1.0 | mg/L | 2022-11-14 | |

Calculated Parameters

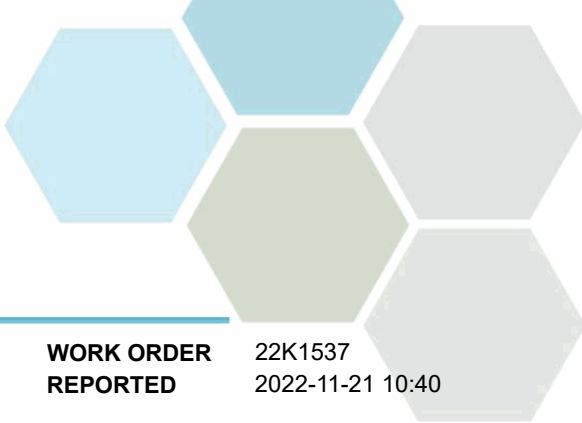
| | | | | | | |
|------------------------|----------|-----|--------|------|-----|--|
| Nitrate+Nitrite (as N) | < 0.0100 | N/A | 0.0100 | mg/L | N/A | |
| Nitrogen, Total | < 0.0500 | N/A | 0.0500 | mg/L | N/A | |

Dissolved Metals

| | | | | | | |
|---------------------|----------|-----|--------|------|------------|--|
| Aluminum, dissolved | < 0.0050 | N/A | 0.0050 | mg/L | 2022-11-19 | |
|---------------------|----------|-----|--------|------|------------|--|

General Parameters

| | | | | | | |
|--------------------------|---------|---------------|-------|-------|------------|--|
| Ammonia, Total (as N) | < 0.050 | None Required | 0.050 | mg/L | 2022-11-14 | |
| Conductivity (EC) | 397 | N/A | 2.0 | µS/cm | 2022-11-16 | |
| Nitrogen, Total Kjeldahl | < 0.050 | N/A | 0.050 | mg/L | 2022-11-18 | |



TEST RESULTS

REPORTED TO PROJECT Cherry Ridge Management
Creek Monitoring

WORK ORDER REPORTED 22K1537
2022-11-21 10:40

| Analyte | Result | Guideline | RL | Units | Analyzed | Qualifier |
|--|--------|-----------|----|-------|----------|----------------|
| Half Mile Creek (22K1537-02) Matrix: Water Sampled: 2022-11-13 12:00, Continued | | | | | | F1, FILT, PRES |

General Parameters, Continued

| | | | | | | |
|-----------------------------|----------|----------|--------|----------|------------|-----|
| pH | 8.24 | 7.0-10.5 | 0.10 | pH units | 2022-11-16 | HT2 |
| Phosphorus, Total (as P) | 0.0061 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Phosphorus, Total Dissolved | < 0.0050 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Turbidity | 0.17 | OG < 1 | 0.10 | NTU | 2022-11-14 | |

Microbiological Parameters

| | | | | | | |
|---------------------------|-----|---------|---|------------|------------|--|
| Coliforms, Total (Q-Tray) | 12 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |
| E. coli (Q-Tray) | < 1 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |

Cherry Creek at Hall (22K1537-03) | Matrix: Water | Sampled: 2022-11-13 11:40

F1, FILT, PRES

Anions

| | | | | | | |
|----------------|---------|----------|-------|------|------------|--|
| Chloride | 2.25 | AO ≤ 250 | 0.10 | mg/L | 2022-11-14 | |
| Nitrate (as N) | 0.026 | MAC = 10 | 0.010 | mg/L | 2022-11-14 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | 2022-11-14 | |
| Sulfate | 20.0 | AO ≤ 500 | 1.0 | mg/L | 2022-11-14 | |

Calculated Parameters

| | | | | | | |
|------------------------|--------|-----|--------|------|-----|--|
| Nitrate+Nitrite (as N) | 0.0260 | N/A | 0.0100 | mg/L | N/A | |
| Nitrogen, Total | 0.197 | N/A | 0.0500 | mg/L | N/A | |

Dissolved Metals

| | | | | | | |
|---------------------|----------|-----|--------|------|------------|--|
| Aluminum, dissolved | < 0.0050 | N/A | 0.0050 | mg/L | 2022-11-19 | |
|---------------------|----------|-----|--------|------|------------|--|

General Parameters

| | | | | | | |
|-----------------------------|---------|---------------|--------|----------|------------|-----|
| Ammonia, Total (as N) | < 0.050 | None Required | 0.050 | mg/L | 2022-11-14 | |
| Conductivity (EC) | 277 | N/A | 2.0 | µS/cm | 2022-11-16 | |
| Nitrogen, Total Kjeldahl | 0.171 | N/A | 0.050 | mg/L | 2022-11-18 | |
| pH | 8.22 | 7.0-10.5 | 0.10 | pH units | 2022-11-16 | HT2 |
| Phosphorus, Total (as P) | 0.0102 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Phosphorus, Total Dissolved | 0.0059 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Turbidity | 0.94 | OG < 1 | 0.10 | NTU | 2022-11-14 | |

Microbiological Parameters

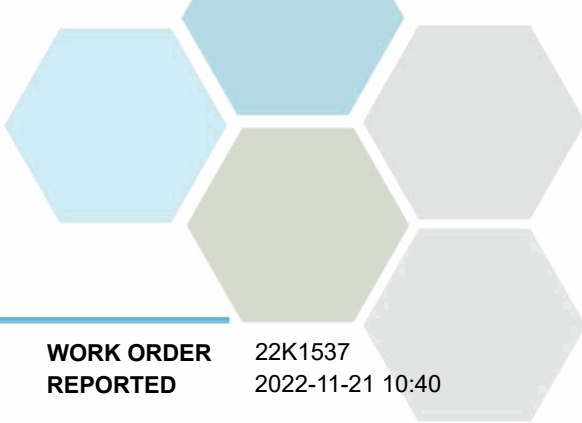
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|---------------------------|-----|---------|---|------------|------------|--|
| Coliforms, Total (Q-Tray) | 120 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |
| E. coli (Q-Tray) | 2 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |

Shuswap River Picnic Site (22K1537-04) | Matrix: Water | Sampled: 2022-11-13 10:15

F1, FILT, PRES

Anions

| | | | | | | |
|----------------|---------|----------|-------|------|------------|--|
| Chloride | 0.42 | AO ≤ 250 | 0.10 | mg/L | 2022-11-14 | |
| Nitrate (as N) | 0.037 | MAC = 10 | 0.010 | mg/L | 2022-11-14 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | 2022-11-14 | |



TEST RESULTS

REPORTED TO PROJECT Cherry Ridge Management Creek Monitoring

WORK ORDER REPORTED 22K1537
2022-11-21 10:40

| Analyte | Result | Guideline | RL | Units | Analyzed | Qualifier |
|--|--------|-----------|----|-------|----------|----------------|
| Shuswap River Picnic Site (22K1537-04) Matrix: Water Sampled: 2022-11-13 10:15, Continued | | | | | | F1, FILT, PRES |

Anions, Continued

| | | | | | | |
|---------|-----|----------|-----|------|------------|--|
| Sulfate | 6.8 | AO ≤ 500 | 1.0 | mg/L | 2022-11-14 | |
|---------|-----|----------|-----|------|------------|--|

Calculated Parameters

| | | | | | | |
|------------------------|--------|-----|--------|------|-----|--|
| Nitrate+Nitrite (as N) | 0.0373 | N/A | 0.0100 | mg/L | N/A | |
| Nitrogen, Total | 0.196 | N/A | 0.0500 | mg/L | N/A | |

Dissolved Metals

| | | | | | | |
|---------------------|--------|-----|--------|------|------------|--|
| Aluminum, dissolved | 0.0055 | N/A | 0.0050 | mg/L | 2022-11-19 | |
|---------------------|--------|-----|--------|------|------------|--|

General Parameters

| | | | | | | |
|-----------------------------|---------|---------------|--------|----------|------------|-----|
| Ammonia, Total (as N) | < 0.050 | None Required | 0.050 | mg/L | 2022-11-14 | |
| Conductivity (EC) | 108 | N/A | 2.0 | µS/cm | 2022-11-16 | |
| Nitrogen, Total Kjeldahl | 0.159 | N/A | 0.050 | mg/L | 2022-11-18 | |
| pH | 7.80 | 7.0-10.5 | 0.10 | pH units | 2022-11-16 | HT2 |
| Phosphorus, Total (as P) | 0.0099 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Phosphorus, Total Dissolved | 0.0065 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Turbidity | 1.25 | OG < 1 | 0.10 | NTU | 2022-11-14 | |

Microbiological Parameters

| | | | | | | |
|---------------------------|-----|---------|---|------------|------------|--|
| Coliforms, Total (Q-Tray) | 238 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |
| E. coli (Q-Tray) | 1 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |

Ferry Creek (22K1537-05) | Matrix: Water | Sampled: 2022-11-13 10:40

F1, FILT, PRES

Anions

| | | | | | | |
|----------------|---------|----------|-------|------|------------|--|
| Chloride | 1.09 | AO ≤ 250 | 0.10 | mg/L | 2022-11-15 | |
| Nitrate (as N) | 0.026 | MAC = 10 | 0.010 | mg/L | 2022-11-15 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | 2022-11-15 | |
| Sulfate | 34.7 | AO ≤ 500 | 1.0 | mg/L | 2022-11-15 | |

Calculated Parameters

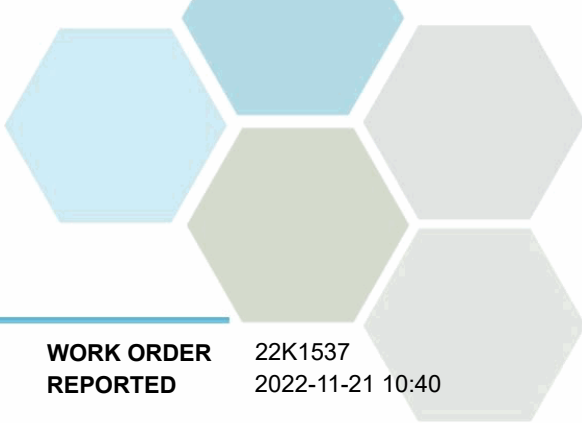
| | | | | | | |
|------------------------|--------|-----|--------|------|-----|--|
| Nitrate+Nitrite (as N) | 0.0260 | N/A | 0.0100 | mg/L | N/A | |
| Nitrogen, Total | 0.116 | N/A | 0.0500 | mg/L | N/A | |

Dissolved Metals

| | | | | | | |
|---------------------|----------|-----|--------|------|------------|--|
| Aluminum, dissolved | < 0.0050 | N/A | 0.0050 | mg/L | 2022-11-19 | |
|---------------------|----------|-----|--------|------|------------|--|

General Parameters

| | | | | | | |
|-----------------------------|---------|---------------|--------|----------|------------|-----|
| Ammonia, Total (as N) | < 0.050 | None Required | 0.050 | mg/L | 2022-11-14 | |
| Conductivity (EC) | 363 | N/A | 2.0 | µS/cm | 2022-11-16 | |
| Nitrogen, Total Kjeldahl | 0.090 | N/A | 0.050 | mg/L | 2022-11-18 | |
| pH | 8.28 | 7.0-10.5 | 0.10 | pH units | 2022-11-16 | HT2 |
| Phosphorus, Total (as P) | 0.0110 | N/A | 0.0050 | mg/L | 2022-11-17 | |
| Phosphorus, Total Dissolved | 0.0101 | N/A | 0.0050 | mg/L | 2022-11-17 | |



TEST RESULTS

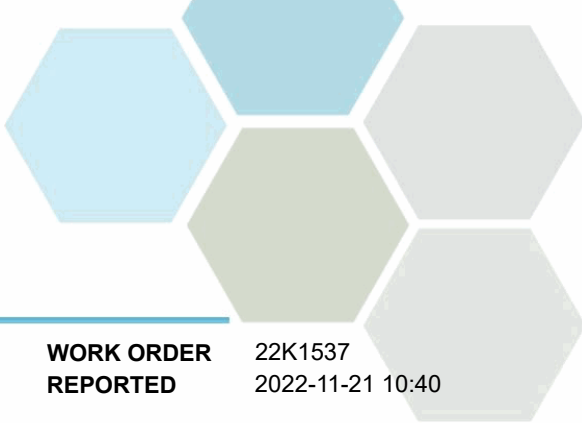
REPORTED TO PROJECT Cherry Ridge Management
Creek Monitoring

WORK ORDER REPORTED 22K1537
2022-11-21 10:40

| Analyte | Result | Guideline | RL | Units | Analyzed | Qualifier |
|--|--------|-----------|------|------------|------------|----------------|
| Ferry Creek (22K1537-05) Matrix: Water Sampled: 2022-11-13 10:40, Continued | | | | | | F1, FILT, PRES |
| <i>General Parameters, Continued</i> | | | | | | |
| Turbidity | 0.24 | OG < 1 | 0.10 | NTU | 2022-11-14 | |
| <i>Microbiological Parameters</i> | | | | | | |
| Coliforms, Total (Q-Tray) | 194 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |
| E. coli (Q-Tray) | 1 | MAC = 0 | 1 | MPN/100 mL | 2022-11-14 | |

Sample Qualifiers:

- F1 The sample was not field-filtered and was therefore filtered through a 0.45 µm membrane in the laboratory and preserved with HNO3 prior to analysis for dissolved metals.
- FILT The sample has been filtered for TDP in the laboratory. Results may not reflect conditions at the time of sampling.
- HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
- PRES Sample has been preserved for TDP in the laboratory and the holding time has been extended.



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Cherry Ridge Management Creek Monitoring

WORK ORDER REPORTED 22K1537
2022-11-21 10:40

| Analysis Description | Method Ref. | Technique | Accredited | Location |
|--------------------------------------|--|--|------------|----------|
| Ammonia, Total in Water | SM 4500-NH3 G* (2017) | Automated Colorimetry (Phenate) | ✓ | Kelowna |
| Anions in Water | SM 4110 B (2017) | Ion Chromatography | ✓ | 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 |
| Dissolved Metals in Water | EPA 200.8 / EPA 6020B | 0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) | ✓ | Richmond |
| 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 Dissolved in Water | SM 4500-P B.5* (2011) / SM 4500-P F (2017) | Persulfate Digestion / Automated Colorimetry (Ascorbic Acid) | ✓ | 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

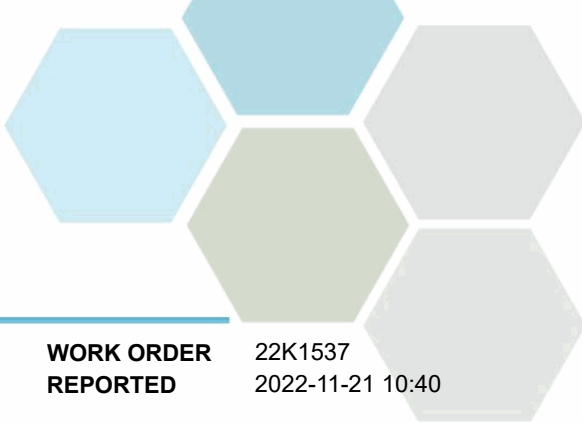
Glossary of Terms:

| | |
|------------|---|
| 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 |
| EPA | United States Environmental Protection Agency Test Methods |
| 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

REPORTED TO PROJECT Cherry Ridge Management
Creek Monitoring

WORK ORDER REPORTED 22K1537
2022-11-21 10:40

General Comments:

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