



## CERTIFICATE OF ANALYSIS

**REPORTED TO** Interior Health Authority - Kamloops  
519 Columbia Street  
Kamloops, BC V2C 2T8

**ATTENTION** Jessy Bhatti

**PO NUMBER**

**PROJECT** Comprehensive Testing 2018 (Jessy Bhatti)

**PROJECT INFO** 709 Wittner Road, Kamloops

**WORK ORDER** 8120365

**RECEIVED / TEMP** 2018-12-04 09:30 / 4°C

**REPORTED** 2018-12-11 15:24

**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.

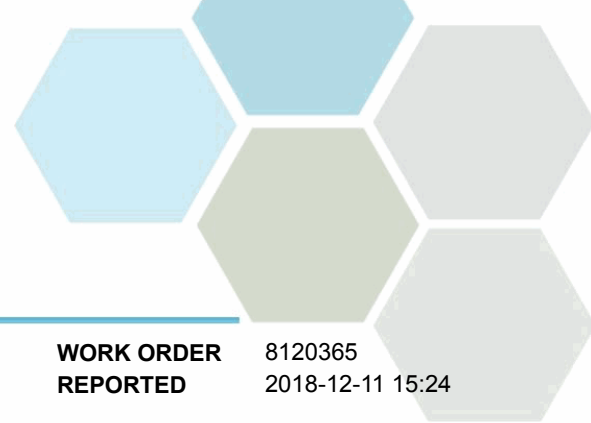
*If you have any questions or concerns, please contact me at [jnobrega@caro.ca](mailto:jnobrega@caro.ca)*

#### **Authorized By:**

Jessica Nobrega, B.Sc.  
Client Service Manager

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## TEST RESULTS

**REPORTED TO PROJECT** Interior Health Authority - Kamloops  
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| Analyte | Result | Guideline | RL Units | Analyzed | Qualifier |
|---------|--------|-----------|----------|----------|-----------|
|---------|--------|-----------|----------|----------|-----------|

**Del Oro CWS, Pumphouse (8120365-01) | Matrix: Water | Sampled: 2018-12-03 10:45**

**Anions**

|                |         |           |            |            |  |
|----------------|---------|-----------|------------|------------|--|
| Chloride       | 0.63    | AO ≤ 250  | 0.10 mg/L  | 2018-12-06 |  |
| Fluoride       | < 0.10  | MAC = 1.5 | 0.10 mg/L  | 2018-12-06 |  |
| Nitrate (as N) | 0.031   | MAC = 10  | 0.010 mg/L | 2018-12-06 |  |
| Nitrite (as N) | < 0.010 | MAC = 1   | 0.010 mg/L | 2018-12-06 |  |
| Sulfate        | 5.7     | AO ≤ 500  | 1.0 mg/L   | 2018-12-06 |  |

**Calculated Parameters**

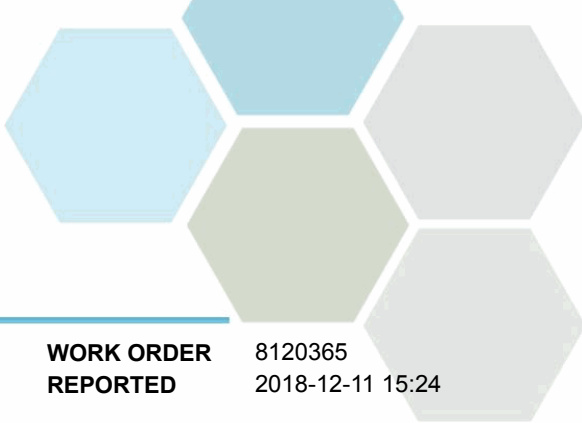
|                            |      |               |            |     |  |
|----------------------------|------|---------------|------------|-----|--|
| Hardness, Total (as CaCO3) | 39.6 | None Required | 0.500 mg/L | N/A |  |
| Solids, Total Dissolved    | 23.5 | AO ≤ 500      | 1.00 mg/L  | N/A |  |

**General Parameters**

|  |          |           |               |            |     |
|--|----------|-----------|---------------|------------|-----|
| Alkalinity, Total (as CaCO3)           | 39.1     | N/A       | 1.0 mg/L      | 2018-12-06 |     |
| Alkalinity, Phenolphthalein (as CaCO3) | < 1.0    | N/A       | 1.0 mg/L      | 2018-12-06 |     |
| Alkalinity, Bicarbonate (as CaCO3)     | 39.1     | N/A       | 1.0 mg/L      | 2018-12-06 |     |
| Alkalinity, Carbonate (as CaCO3)       | < 1.0    | N/A       | 1.0 mg/L      | 2018-12-06 |     |
| Alkalinity, Hydroxide (as CaCO3)       | < 1.0    | N/A       | 1.0 mg/L      | 2018-12-06 |     |
| Colour, True                           | 7.0      | AO ≤ 15   | 5.0 CU        | 2018-12-06 |     |
| Conductivity (EC)                      | 87.6     | N/A       | 2.0 µS/cm     | 2018-12-06 |     |
| Cyanide, Total                         | < 0.0020 | MAC = 0.2 | 0.0020 mg/L   | 2018-12-06 |     |
| Cation-Anion Balance                   | -100     | N/A       |               | 2018-12-06 |     |
| pH                                     | 7.67     | 7.0-10.5  | 0.10 pH units | 2018-12-06 | HT2 |
| Temperature, at pH                     | 20.2     | N/A       | °C            | 2018-12-06 | HT2 |
| Turbidity                              | 0.77     | OG < 1    | 0.10 NTU      | 2018-12-06 |     |

**Total Metals**

|                   |            |               |               |            |  |
|-------------------|------------|---------------|---------------|------------|--|
| Aluminum, total   | 0.0307     | OG < 0.1      | 0.0050 mg/L   | 2018-12-07 |  |
| Antimony, total   | 0.00026    | MAC = 0.006   | 0.00020 mg/L  | 2018-12-07 |  |
| Arsenic, total    | < 0.00050  | MAC = 0.01    | 0.00050 mg/L  | 2018-12-07 |  |
| Barium, total     | 0.0119     | MAC = 1       | 0.0050 mg/L   | 2018-12-07 |  |
| Boron, total      | 0.0052     | MAC = 5       | 0.0050 mg/L   | 2018-12-07 |  |
| Cadmium, total    | 0.000049   | MAC = 0.005   | 0.000010 mg/L | 2018-12-07 |  |
| Calcium, total    | 12.4       | None Required | 0.20 mg/L     | 2018-12-07 |  |
| Chromium, total   | < 0.00050  | MAC = 0.05    | 0.00050 mg/L  | 2018-12-07 |  |
| Cobalt, total     | 0.00014    | N/A           | 0.00010 mg/L  | 2018-12-07 |  |
| Copper, total     | 0.00282    | AO ≤ 1        | 0.00040 mg/L  | 2018-12-07 |  |
| Iron, total       | 0.049      | AO ≤ 0.3      | 0.010 mg/L    | 2018-12-07 |  |
| Lead, total       | < 0.00020  | MAC = 0.01    | 0.00020 mg/L  | 2018-12-07 |  |
| Magnesium, total  | 2.10       | None Required | 0.010 mg/L    | 2018-12-07 |  |
| Manganese, total  | 0.00853    | AO ≤ 0.05     | 0.00020 mg/L  | 2018-12-07 |  |
| Mercury, total    | < 0.000010 | MAC = 0.001   | 0.000010 mg/L | 2018-12-10 |  |
| Molybdenum, total | 0.00062    | N/A           | 0.00010 mg/L  | 2018-12-07 |  |
| Nickel, total     | 0.00051    | N/A           | 0.00040 mg/L  | 2018-12-07 |  |
| Potassium, total  | 0.85       | N/A           | 0.10 mg/L     | 2018-12-07 |  |



## TEST RESULTS

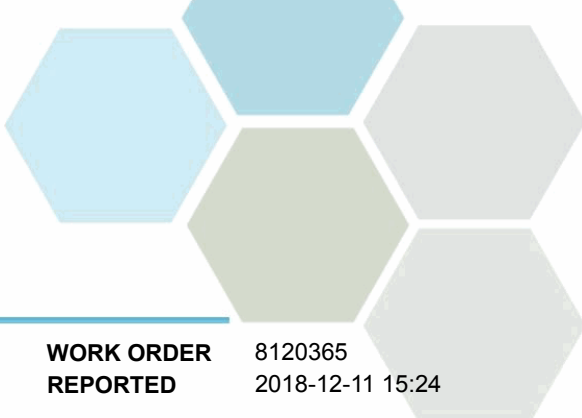
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| Analyte   | Result          | Guideline  | RL Units      | Analyzed   | Qualifier |
|---|-----------------|------------|---------------|------------|-----------|
| <b>Del Oro CWS, Pumphouse (8120365-01)   Matrix: Water   Sampled: 2018-12-03 10:45, Continued</b> |                 |            |               |            |           |
| <i>Total Metals, Continued</i>  |                 |            |               |            |           |
| Selenium, total   | < 0.00050       | MAC = 0.05 | 0.00050 mg/L  | 2018-12-07 |           |
| Sodium, total   | <b>1.67</b>     | AO ≤ 200   | 0.10 mg/L     | 2018-12-07 |           |
| Strontium, total  | <b>0.0831</b>   | N/A        | 0.0010 mg/L   | 2018-12-07 |           |
| Uranium, total  | <b>0.000331</b> | MAC = 0.02 | 0.000020 mg/L | 2018-12-07 |           |
| Zinc, total   | <b>0.0080</b>   | AO ≤ 5     | 0.0040 mg/L   | 2018-12-07 |           |

**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** Interior Health Authority - Kamloops  
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| 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  |
| 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  |
| Hardness in Water                | SM 2340 B* (2011)      | Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)  | 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  |

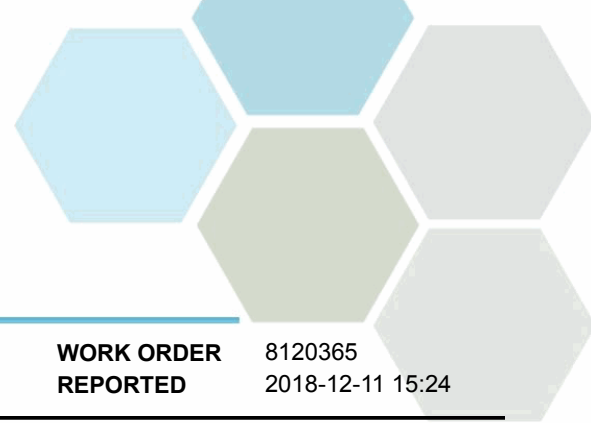
*Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method*

### 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   |
| 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.



## APPENDIX 2: QUALITY CONTROL RESULTS

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

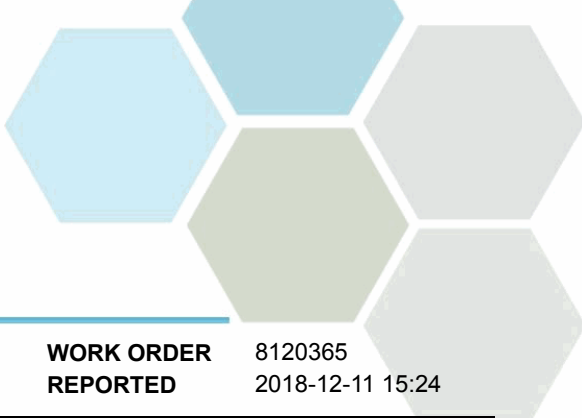
- **Method Blank (Blk):** A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup):** An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS):** A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS):** A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM):** A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

| Analyte                      | Result  | RL Units   | Spike Level                                | Source Result | % REC | REC Limit | % RPD | RPD Limit | Qualifier |
|------------------------------|---------|------------|--|---------------|-------|-----------|-------|-----------|-----------|
| <b>Anions, Batch B8L0302</b> |         |            |  |               |       |           |       |           |           |
| <b>Blank (B8L0302-BLK1)</b>  |         |            | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Chloride                     | < 0.10  | 0.10 mg/L  |  |               |       |           |       |           |           |
| Fluoride                     | < 0.10  | 0.10 mg/L  |  |               |       |           |       |           |           |
| Nitrate (as N)               | < 0.010 | 0.010 mg/L |  |               |       |           |       |           |           |
| Nitrite (as N)               | < 0.010 | 0.010 mg/L |  |               |       |           |       |           |           |
| Sulfate                      | < 1.0   | 1.0 mg/L   |  |               |       |           |       |           |           |
| <b>Blank (B8L0302-BLK2)</b>  |         |            | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Chloride                     | < 0.10  | 0.10 mg/L  |  |               |       |           |       |           |           |
| Fluoride                     | < 0.10  | 0.10 mg/L  |  |               |       |           |       |           |           |
| Nitrate (as N)               | < 0.010 | 0.010 mg/L |  |               |       |           |       |           |           |
| Nitrite (as N)               | < 0.010 | 0.010 mg/L |  |               |       |           |       |           |           |
| Sulfate                      | < 1.0   | 1.0 mg/L   |  |               |       |           |       |           |           |
| <b>LCS (B8L0302-BS1)</b>     |         |            | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Chloride                     | 15.9    | 0.10 mg/L  | 16.0                                       |               | 100   | 90-110    |       |           |           |
| Fluoride                     | 4.00    | 0.10 mg/L  | 4.00                                       |               | 100   | 88-108    |       |           |           |
| Nitrate (as N)               | 3.96    | 0.010 mg/L | 4.00                                       |               | 99    | 93-108    |       |           |           |
| Nitrite (as N)               | 2.01    | 0.010 mg/L | 2.00                                       |               | 100   | 85-114    |       |           |           |
| Sulfate                      | 16.1    | 1.0 mg/L   | 16.0                                       |               | 100   | 91-109    |       |           |           |
| <b>LCS (B8L0302-BS2)</b>     |         |            | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Chloride                     | 15.6    | 0.10 mg/L  | 16.0                                       |               | 97    | 90-110    |       |           |           |
| Fluoride                     | 3.97    | 0.10 mg/L  | 4.00                                       |               | 99    | 88-108    |       |           |           |
| Nitrate (as N)               | 4.02    | 0.010 mg/L | 4.00                                       |               | 101   | 93-108    |       |           |           |
| Nitrite (as N)               | 2.01    | 0.010 mg/L | 2.00                                       |               | 101   | 85-114    |       |           |           |
| Sulfate                      | 15.9    | 1.0 mg/L   | 16.0                                       |               | 100   | 91-109    |       |           |           |

### General Parameters, Batch B8L0345

|  |       |          |  |  |  |  |  |  |  |
|--|-------|----------|--|--|--|--|--|--|--|
| <b>Blank (B8L0345-BLK1)</b>            |       |          | Prepared: 2018-12-05, Analyzed: 2018-12-05 |  |  |  |  |  |  |
| Alkalinity, Total (as CaCO3)           | < 1.0 | 1.0 mg/L |  |  |  |  |  |  |  |
| Alkalinity, Phenolphthalein (as CaCO3) | < 1.0 | 1.0 mg/L |  |  |  |  |  |  |  |
| Alkalinity, Bicarbonate (as CaCO3)     | < 1.0 | 1.0 mg/L |  |  |  |  |  |  |  |
| Alkalinity, Carbonate (as CaCO3)       | < 1.0 | 1.0 mg/L |  |  |  |  |  |  |  |
| Alkalinity, Hydroxide (as CaCO3)       | < 1.0 | 1.0 mg/L |  |  |  |  |  |  |  |

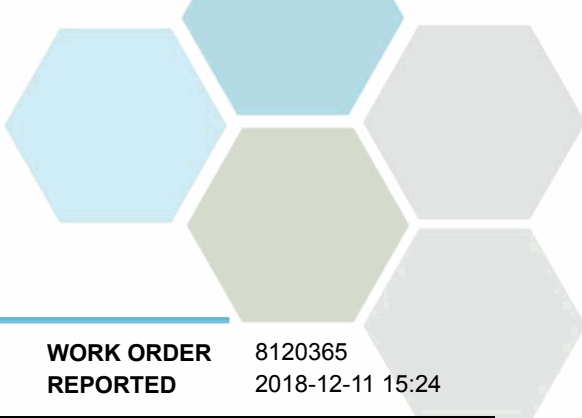


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| Analyte   | Result | RL Units      | Spike Level                                | Source Result | % REC | REC Limit | % RPD | RPD Limit | Qualifier |
|---|--------|---------------|--|---------------|-------|-----------|-------|-----------|-----------|
| <b>General Parameters, Batch B8L0345, Continued</b> |        |               |  |               |       |           |       |           |           |
| <b>Blank (B8L0345-BLK1), Continued</b>              |        |               | Prepared: 2018-12-05, Analyzed: 2018-12-05 |               |       |           |       |           |           |
| Conductivity (EC)                                   | < 2.0  | 2.0 µS/cm     |  |               |       |           |       |           |           |
| Cation-Anion Balance                                | 0.0    | mg/L          |  |               |       |           |       |           |           |
| <b>Blank (B8L0345-BLK2)</b>                         |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Alkalinity, Total (as CaCO3)                        | < 1.0  | 1.0 mg/L      |  |               |       |           |       |           |           |
| Alkalinity, Phenolphthalein (as CaCO3)              | < 1.0  | 1.0 mg/L      |  |               |       |           |       |           |           |
| Alkalinity, Bicarbonate (as CaCO3)                  | < 1.0  | 1.0 mg/L      |  |               |       |           |       |           |           |
| Alkalinity, Carbonate (as CaCO3)                    | < 1.0  | 1.0 mg/L      |  |               |       |           |       |           |           |
| Alkalinity, Hydroxide (as CaCO3)                    | < 1.0  | 1.0 mg/L      |  |               |       |           |       |           |           |
| Conductivity (EC)                                   | < 2.0  | 2.0 µS/cm     |  |               |       |           |       |           |           |
| Cation-Anion Balance                                | 0.0    | mg/L          |  |               |       |           |       |           |           |
| <b>LCS (B8L0345-BS1)</b>                            |        |               | Prepared: 2018-12-05, Analyzed: 2018-12-05 |               |       |           |       |           |           |
| Alkalinity, Total (as CaCO3)                        | 103    | 1.0 mg/L      | 100  |               | 103   | 92-106    |       |           |           |
| <b>LCS (B8L0345-BS2)</b>                            |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Alkalinity, Total (as CaCO3)                        | 103    | 1.0 mg/L      | 100  |               | 103   | 92-106    |       |           |           |
| <b>LCS (B8L0345-BS3)</b>                            |        |               | Prepared: 2018-12-05, Analyzed: 2018-12-05 |               |       |           |       |           |           |
| Conductivity (EC)                                   | 1400   | 2.0 µS/cm     | 1410                                       |               | 99    | 95-104    |       |           |           |
| <b>LCS (B8L0345-BS4)</b>                            |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Conductivity (EC)                                   | 1410   | 2.0 µS/cm     | 1410                                       |               | 100   | 95-104    |       |           |           |
| <b>Reference (B8L0345-SRM1)</b>                     |        |               | Prepared: 2018-12-05, Analyzed: 2018-12-05 |               |       |           |       |           |           |
| pH  | 7.00   | 0.10 pH units | 7.01                                       |               | 100   | 98-102    |       |           |           |
| <b>Reference (B8L0345-SRM2)</b>                     |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| pH  | 7.00   | 0.10 pH units | 7.01                                       |               | 100   | 98-102    |       |           |           |
| <b>General Parameters, Batch B8L0364</b>            |        |               |  |               |       |           |       |           |           |
| <b>Blank (B8L0364-BLK1)</b>                         |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Colour, True  | < 5.0  | 5.0 CU        |  |               |       |           |       |           |           |
| <b>Blank (B8L0364-BLK2)</b>                         |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Colour, True  | < 5.0  | 5.0 CU        |  |               |       |           |       |           |           |
| <b>LCS (B8L0364-BS1)</b>                            |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Colour, True  | 20     | 5.0 CU        | 20.0                                       |               | 99    | 85-115    |       |           |           |
| <b>LCS (B8L0364-BS2)</b>                            |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Colour, True  | 20     | 5.0 CU        | 20.0                                       |               | 99    | 85-115    |       |           |           |
| <b>General Parameters, Batch B8L0366</b>            |        |               |  |               |       |           |       |           |           |
| <b>Blank (B8L0366-BLK1)</b>                         |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Turbidity   | < 0.10 | 0.10 NTU      |  |               |       |           |       |           |           |
| <b>Blank (B8L0366-BLK2)</b>                         |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Turbidity   | < 0.10 | 0.10 NTU      |  |               |       |           |       |           |           |
| <b>LCS (B8L0366-BS1)</b>                            |        |               | Prepared: 2018-12-06, Analyzed: 2018-12-06 |               |       |           |       |           |           |
| Turbidity   | 41.1   | 0.10 NTU      | 40.0                                       |               | 103   | 90-110    |       |           |           |



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| Analyte | Result | RL Units | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Qualifier |
|---------|--------|----------|-------------|---------------|-------|-----------|-------|-----------|-----------|
|---------|--------|----------|-------------|---------------|-------|-----------|-------|-----------|-----------|

**General Parameters, Batch B8L0366, Continued**

**LCS (B8L0366-BS2)**

Prepared: 2018-12-06, Analyzed: 2018-12-06

|           |      |          |      |  |     |        |  |  |  |
|-----------|------|----------|------|--|-----|--------|--|--|--|
| Turbidity | 41.0 | 0.10 NTU | 40.0 |  | 102 | 90-110 |  |  |  |
|-----------|------|----------|------|--|-----|--------|--|--|--|

**General Parameters, Batch B8L0367**

**Blank (B8L0367-BLK1)**

Prepared: 2018-12-06, Analyzed: 2018-12-06

|                |          |             |  |  |  |  |  |  |  |
|----------------|----------|-------------|--|--|--|--|--|--|--|
| Cyanide, Total | < 0.0020 | 0.0020 mg/L |  |  |  |  |  |  |  |
|----------------|----------|-------------|--|--|--|--|--|--|--|

**Blank (B8L0367-BLK2)**

Prepared: 2018-12-06, Analyzed: 2018-12-06

|                |          |             |  |  |  |  |  |  |  |
|----------------|----------|-------------|--|--|--|--|--|--|--|
| Cyanide, Total | < 0.0020 | 0.0020 mg/L |  |  |  |  |  |  |  |
|----------------|----------|-------------|--|--|--|--|--|--|--|

**LCS (B8L0367-BS1)**

Prepared: 2018-12-06, Analyzed: 2018-12-06

|                |        |             |        |  |    |        |  |  |  |
|----------------|--------|-------------|--------|--|----|--------|--|--|--|
| Cyanide, Total | 0.0184 | 0.0020 mg/L | 0.0200 |  | 92 | 82-120 |  |  |  |
|----------------|--------|-------------|--------|--|----|--------|--|--|--|

**LCS (B8L0367-BS2)**

Prepared: 2018-12-06, Analyzed: 2018-12-06

|                |        |             |        |  |    |        |  |  |  |
|----------------|--------|-------------|--------|--|----|--------|--|--|--|
| Cyanide, Total | 0.0185 | 0.0020 mg/L | 0.0200 |  | 93 | 82-120 |  |  |  |
|----------------|--------|-------------|--------|--|----|--------|--|--|--|

**LCS Dup (B8L0367-BSD1)**

Prepared: 2018-12-06, Analyzed: 2018-12-06

|                |        |             |        |  |    |        |   |    |  |
|----------------|--------|-------------|--------|--|----|--------|---|----|--|
| Cyanide, Total | 0.0189 | 0.0020 mg/L | 0.0200 |  | 94 | 82-120 | 3 | 10 |  |
|----------------|--------|-------------|--------|--|----|--------|---|----|--|

**LCS Dup (B8L0367-BSD2)**

Prepared: 2018-12-06, Analyzed: 2018-12-06

|                |        |             |        |  |    |        |   |    |  |
|----------------|--------|-------------|--------|--|----|--------|---|----|--|
| Cyanide, Total | 0.0188 | 0.0020 mg/L | 0.0200 |  | 94 | 82-120 | 1 | 10 |  |
|----------------|--------|-------------|--------|--|----|--------|---|----|--|

**Total Metals, Batch B8L0539**

**Blank (B8L0539-BLK1)**

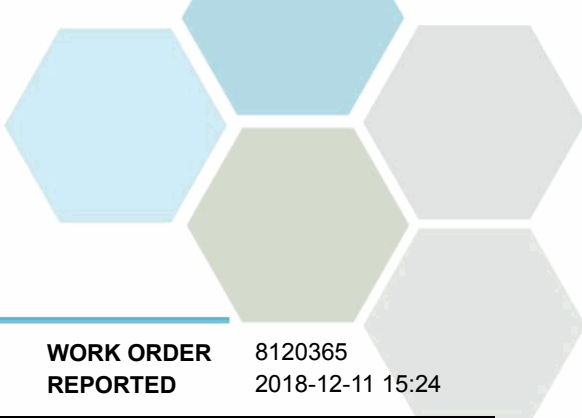
Prepared: 2018-12-07, Analyzed: 2018-12-07

|                   |            |               |  |  |  |  |  |  |  |
|-------------------|------------|---------------|--|--|--|--|--|--|--|
| Aluminum, total   | < 0.0050   | 0.0050 mg/L   |  |  |  |  |  |  |  |
| Antimony, total   | < 0.00020  | 0.00020 mg/L  |  |  |  |  |  |  |  |
| Arsenic, total    | < 0.00050  | 0.00050 mg/L  |  |  |  |  |  |  |  |
| Barium, total     | < 0.0050   | 0.0050 mg/L   |  |  |  |  |  |  |  |
| Boron, total      | < 0.0050   | 0.0050 mg/L   |  |  |  |  |  |  |  |
| Cadmium, total    | < 0.000010 | 0.000010 mg/L |  |  |  |  |  |  |  |
| Calcium, total    | < 0.20     | 0.20 mg/L     |  |  |  |  |  |  |  |
| Chromium, total   | < 0.00050  | 0.00050 mg/L  |  |  |  |  |  |  |  |
| Cobalt, total     | < 0.00010  | 0.00010 mg/L  |  |  |  |  |  |  |  |
| Copper, total     | < 0.00040  | 0.00040 mg/L  |  |  |  |  |  |  |  |
| Iron, total       | < 0.010    | 0.010 mg/L    |  |  |  |  |  |  |  |
| Lead, total       | < 0.00020  | 0.00020 mg/L  |  |  |  |  |  |  |  |
| Magnesium, total  | < 0.010    | 0.010 mg/L    |  |  |  |  |  |  |  |
| Manganese, total  | < 0.00020  | 0.00020 mg/L  |  |  |  |  |  |  |  |
| Molybdenum, total | < 0.00010  | 0.00010 mg/L  |  |  |  |  |  |  |  |
| Nickel, total     | < 0.00040  | 0.00040 mg/L  |  |  |  |  |  |  |  |
| Potassium, total  | < 0.10     | 0.10 mg/L     |  |  |  |  |  |  |  |
| Selenium, total   | < 0.00050  | 0.00050 mg/L  |  |  |  |  |  |  |  |
| Sodium, total     | < 0.10     | 0.10 mg/L     |  |  |  |  |  |  |  |
| Strontium, total  | < 0.0010   | 0.0010 mg/L   |  |  |  |  |  |  |  |
| Uranium, total    | < 0.000020 | 0.000020 mg/L |  |  |  |  |  |  |  |
| Zinc, total       | < 0.0040   | 0.0040 mg/L   |  |  |  |  |  |  |  |

**Blank (B8L0539-BLK2)**

Prepared: 2018-12-07, Analyzed: 2018-12-07

|                 |            |               |  |  |  |  |  |  |  |
|-----------------|------------|---------------|--|--|--|--|--|--|--|
| Aluminum, total | < 0.0050   | 0.0050 mg/L   |  |  |  |  |  |  |  |
| Antimony, total | < 0.00020  | 0.00020 mg/L  |  |  |  |  |  |  |  |
| Arsenic, total  | < 0.00050  | 0.00050 mg/L  |  |  |  |  |  |  |  |
| Barium, total   | < 0.0050   | 0.0050 mg/L   |  |  |  |  |  |  |  |
| Boron, total    | < 0.0050   | 0.0050 mg/L   |  |  |  |  |  |  |  |
| Cadmium, total  | < 0.000010 | 0.000010 mg/L |  |  |  |  |  |  |  |



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Interior Health Authority - Kamloops  
Comprehensive Testing 2018 (Jessy Bhatti)

**WORK ORDER REPORTED** 8120365  
2018-12-11 15:24

| Analyte | Result | RL Units | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Qualifier |
|---------|--------|----------|-------------|---------------|-------|-----------|-------|-----------|-----------|
|---------|--------|----------|-------------|---------------|-------|-----------|-------|-----------|-----------|

**Total Metals, Batch B8L0539, Continued**

**Blank (B8L0539-BLK2), Continued**

Prepared: 2018-12-07, Analyzed: 2018-12-07

|                   |            |               |
|-------------------|------------|---------------|
| Calcium, total    | < 0.20     | 0.20 mg/L     |
| Chromium, total   | < 0.00050  | 0.00050 mg/L  |
| Cobalt, total     | < 0.00010  | 0.00010 mg/L  |
| Copper, total     | < 0.00040  | 0.00040 mg/L  |
| Iron, total       | < 0.010    | 0.010 mg/L    |
| Lead, total       | < 0.00020  | 0.00020 mg/L  |
| Magnesium, total  | < 0.010    | 0.010 mg/L    |
| Manganese, total  | < 0.00020  | 0.00020 mg/L  |
| Molybdenum, total | < 0.00010  | 0.00010 mg/L  |
| Nickel, total     | < 0.00040  | 0.00040 mg/L  |
| Potassium, total  | < 0.10     | 0.10 mg/L     |
| Selenium, total   | < 0.00050  | 0.00050 mg/L  |
| Sodium, total     | < 0.10     | 0.10 mg/L     |
| Strontium, total  | < 0.0010   | 0.0010 mg/L   |
| Uranium, total    | < 0.000020 | 0.000020 mg/L |
| Zinc, total       | < 0.0040   | 0.0040 mg/L   |

**Blank (B8L0539-BLK3)**

Prepared: 2018-12-07, Analyzed: 2018-12-07

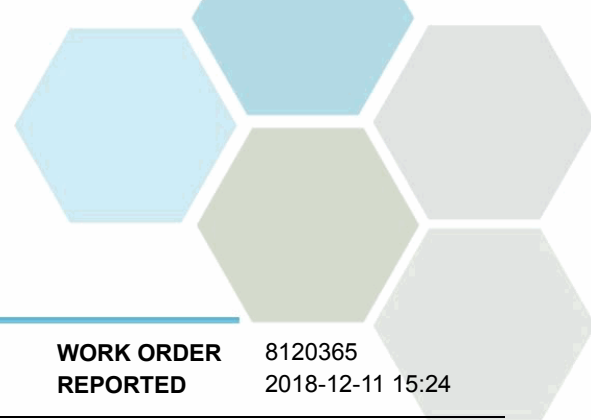
|                   |            |               |
|-------------------|------------|---------------|
| Aluminum, total   | < 0.0050   | 0.0050 mg/L   |
| Antimony, total   | < 0.00020  | 0.00020 mg/L  |
| Arsenic, total    | < 0.00050  | 0.00050 mg/L  |
| Barium, total     | < 0.0050   | 0.0050 mg/L   |
| Boron, total      | < 0.0050   | 0.0050 mg/L   |
| Cadmium, total    | < 0.000010 | 0.000010 mg/L |
| Calcium, total    | < 0.20     | 0.20 mg/L     |
| Chromium, total   | < 0.00050  | 0.00050 mg/L  |
| Cobalt, total     | < 0.00010  | 0.00010 mg/L  |
| Copper, total     | < 0.00040  | 0.00040 mg/L  |
| Iron, total       | < 0.010    | 0.010 mg/L    |
| Lead, total       | < 0.00020  | 0.00020 mg/L  |
| Magnesium, total  | < 0.010    | 0.010 mg/L    |
| Manganese, total  | < 0.00020  | 0.00020 mg/L  |
| Molybdenum, total | < 0.00010  | 0.00010 mg/L  |
| Nickel, total     | < 0.00040  | 0.00040 mg/L  |
| Potassium, total  | < 0.10     | 0.10 mg/L     |
| Selenium, total   | < 0.00050  | 0.00050 mg/L  |
| Sodium, total     | < 0.10     | 0.10 mg/L     |
| Strontium, total  | < 0.0010   | 0.0010 mg/L   |
| Uranium, total    | < 0.000020 | 0.000020 mg/L |
| Zinc, total       | < 0.0040   | 0.0040 mg/L   |

**Blank (B8L0539-BLK4)**

Prepared: 2018-12-07, Analyzed: 2018-12-07

|                  |            |               |
|------------------|------------|---------------|
| Aluminum, total  | < 0.0050   | 0.0050 mg/L   |
| Antimony, total  | < 0.00020  | 0.00020 mg/L  |
| Arsenic, total   | < 0.00050  | 0.00050 mg/L  |
| Barium, total    | < 0.0050   | 0.0050 mg/L   |
| Boron, total     | < 0.0050   | 0.0050 mg/L   |
| Cadmium, total   | < 0.000010 | 0.000010 mg/L |
| Calcium, total   | < 0.20     | 0.20 mg/L     |
| Chromium, total  | < 0.00050  | 0.00050 mg/L  |
| Cobalt, total    | < 0.00010  | 0.00010 mg/L  |
| Copper, total    | < 0.00040  | 0.00040 mg/L  |
| Iron, total      | < 0.010    | 0.010 mg/L    |
| Lead, total      | < 0.00020  | 0.00020 mg/L  |
| Magnesium, total | < 0.010    | 0.010 mg/L    |
| Manganese, total | < 0.00020  | 0.00020 mg/L  |



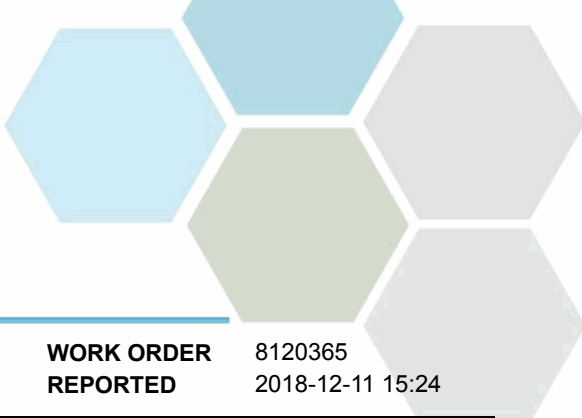


## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Interior Health Authority - Kamloops  
Comprehensive Testing 2018 (Jessy Bhatti)

**WORK ORDER REPORTED** 8120365  
2018-12-11 15:24

| Analyte                                       | Result     | RL Units      | Spike Level | Source Result | % REC                                      | REC Limit | % RPD | RPD Limit | Qualifier |
|---|------------|---------------|-------------|---------------|--|-----------|-------|-----------|-----------|
| <b>Total Metals, Batch B8L0539, Continued</b> |            |               |             |               |  |           |       |           |           |
| <b>Blank (B8L0539-BLK4), Continued</b>        |            |               |             |               | Prepared: 2018-12-07, Analyzed: 2018-12-07 |           |       |           |           |
| Molybdenum, total                             | < 0.00010  | 0.00010 mg/L  |             |               |  |           |       |           |           |
| Nickel, total                                 | < 0.00040  | 0.00040 mg/L  |             |               |  |           |       |           |           |
| Potassium, total                              | < 0.10     | 0.10 mg/L     |             |               |  |           |       |           |           |
| Selenium, total                               | < 0.00050  | 0.00050 mg/L  |             |               |  |           |       |           |           |
| Sodium, total                                 | < 0.10     | 0.10 mg/L     |             |               |  |           |       |           |           |
| Strontium, total                              | < 0.0010   | 0.0010 mg/L   |             |               |  |           |       |           |           |
| Uranium, total                                | < 0.000020 | 0.000020 mg/L |             |               |  |           |       |           |           |
| Zinc, total                                   | < 0.0040   | 0.0040 mg/L   |             |               |  |           |       |           |           |
| <b>LCS (B8L0539-BS1)</b>                      |            |               |             |               | Prepared: 2018-12-07, Analyzed: 2018-12-07 |           |       |           |           |
| Aluminum, total                               | 0.0241     | 0.0050 mg/L   | 0.0200      |               | 120  | 80-120    |       |           |           |
| Antimony, total                               | 0.0213     | 0.00020 mg/L  | 0.0200      |               | 106  | 80-120    |       |           |           |
| Arsenic, total                                | 0.0215     | 0.00050 mg/L  | 0.0200      |               | 108  | 80-120    |       |           |           |
| Barium, total                                 | 0.0218     | 0.0050 mg/L   | 0.0200      |               | 109  | 80-120    |       |           |           |
| Boron, total                                  | 0.0214     | 0.0050 mg/L   | 0.0200      |               | 107  | 80-120    |       |           |           |
| Cadmium, total                                | 0.0217     | 0.000010 mg/L | 0.0200      |               | 108  | 80-120    |       |           |           |
| Calcium, total                                | 2.06       | 0.20 mg/L     | 2.00        |               | 103  | 80-120    |       |           |           |
| Chromium, total                               | 0.0216     | 0.00050 mg/L  | 0.0200      |               | 108  | 80-120    |       |           |           |
| Cobalt, total                                 | 0.0220     | 0.00010 mg/L  | 0.0200      |               | 110  | 80-120    |       |           |           |
| Copper, total                                 | 0.0228     | 0.00040 mg/L  | 0.0200      |               | 114  | 80-120    |       |           |           |
| Iron, total                                   | 2.03       | 0.010 mg/L    | 2.00        |               | 101  | 80-120    |       |           |           |
| Lead, total                                   | 0.0221     | 0.00020 mg/L  | 0.0200      |               | 110  | 80-120    |       |           |           |
| Magnesium, total                              | 2.07       | 0.010 mg/L    | 2.00        |               | 104  | 80-120    |       |           |           |
| Manganese, total                              | 0.0209     | 0.00020 mg/L  | 0.0200      |               | 105  | 80-120    |       |           |           |
| Molybdenum, total                             | 0.0209     | 0.00010 mg/L  | 0.0200      |               | 105  | 80-120    |       |           |           |
| Nickel, total                                 | 0.0220     | 0.00040 mg/L  | 0.0200      |               | 110  | 80-120    |       |           |           |
| Potassium, total                              | 1.99       | 0.10 mg/L     | 2.00        |               | 99   | 80-120    |       |           |           |
| Selenium, total                               | 0.0218     | 0.00050 mg/L  | 0.0200      |               | 109  | 80-120    |       |           |           |
| Sodium, total                                 | 2.07       | 0.10 mg/L     | 2.00        |               | 104  | 80-120    |       |           |           |
| Strontium, total                              | 0.0211     | 0.0010 mg/L   | 0.0200      |               | 105  | 80-120    |       |           |           |
| Uranium, total                                | 0.0213     | 0.000020 mg/L | 0.0200      |               | 106  | 80-120    |       |           |           |
| Zinc, total                                   | 0.0208     | 0.0040 mg/L   | 0.0200      |               | 104  | 80-120    |       |           |           |
| <b>Reference (B8L0539-SRM1)</b>               |            |               |             |               | Prepared: 2018-12-07, Analyzed: 2018-12-07 |           |       |           |           |
| Aluminum, total                               | 0.285      | 0.0050 mg/L   | 0.303       |               | 94   | 82-114    |       |           |           |
| Antimony, total                               | 0.0518     | 0.00020 mg/L  | 0.0511      |               | 101  | 88-115    |       |           |           |
| Arsenic, total                                | 0.123      | 0.00050 mg/L  | 0.118       |               | 105  | 88-111    |       |           |           |
| Barium, total                                 | 0.797      | 0.0050 mg/L   | 0.823       |               | 97   | 83-110    |       |           |           |
| Boron, total                                  | 3.17       | 0.0050 mg/L   | 3.45        |               | 92   | 80-118    |       |           |           |
| Cadmium, total                                | 0.0503     | 0.000010 mg/L | 0.0495      |               | 102  | 90-110    |       |           |           |
| Calcium, total                                | 10.8       | 0.20 mg/L     | 11.6        |               | 93   | 85-113    |       |           |           |
| Chromium, total                               | 0.257      | 0.00050 mg/L  | 0.250       |               | 103  | 88-111    |       |           |           |
| Cobalt, total                                 | 0.0406     | 0.00010 mg/L  | 0.0377      |               | 108  | 90-114    |       |           |           |
| Copper, total                                 | 0.524      | 0.00040 mg/L  | 0.486       |               | 108  | 90-117    |       |           |           |
| Iron, total                                   | 0.489      | 0.010 mg/L    | 0.488       |               | 100  | 90-116    |       |           |           |
| Lead, total                                   | 0.208      | 0.00020 mg/L  | 0.204       |               | 102  | 90-110    |       |           |           |
| Magnesium, total                              | 3.77       | 0.010 mg/L    | 3.79        |               | 100  | 88-116    |       |           |           |
| Manganese, total                              | 0.105      | 0.00020 mg/L  | 0.109       |               | 96   | 88-108    |       |           |           |
| Molybdenum, total                             | 0.201      | 0.00010 mg/L  | 0.198       |               | 102  | 88-110    |       |           |           |
| Nickel, total                                 | 0.260      | 0.00040 mg/L  | 0.249       |               | 104  | 90-112    |       |           |           |
| Potassium, total                              | 6.94       | 0.10 mg/L     | 7.21        |               | 96   | 87-116    |       |           |           |
| Selenium, total                               | 0.130      | 0.00050 mg/L  | 0.121       |               | 107  | 90-122    |       |           |           |
| Sodium, total                                 | 7.26       | 0.10 mg/L     | 7.54        |               | 96   | 86-118    |       |           |           |
| Strontium, total                              | 0.378      | 0.0010 mg/L   | 0.375       |               | 101  | 86-110    |       |           |           |
| Uranium, total                                | 0.0305     | 0.000020 mg/L | 0.0306      |               | 100  | 88-112    |       |           |           |
| Zinc, total                                   | 2.55       | 0.0040 mg/L   | 2.49        |               | 103  | 90-113    |       |           |           |

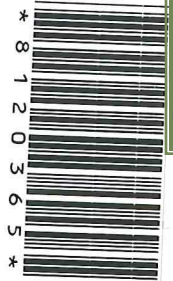


## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Interior Health Authority - Kamloops  
Comprehensive Testing 2018 (Jessy Bhatti)

**WORK ORDER REPORTED** 8120365  
2018-12-11 15:24

| Analyte                                    | Result     | RL Units      | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Qualifier |
|--|------------|---------------|-------------|---------------|-------|-----------|-------|-----------|-----------|
| <b>Total Metals, Batch B8L0661</b>         |            |               |             |               |       |           |       |           |           |
| <b>Blank (B8L0661-BLK1)</b>                |            |               |             |               |       |           |       |           |           |
| Prepared: 2018-12-10, Analyzed: 2018-12-10 |            |               |             |               |       |           |       |           |           |
| Mercury, total                             | < 0.000010 | 0.000010 mg/L |             |               |       |           |       |           |           |
| <b>Blank (B8L0661-BLK2)</b>                |            |               |             |               |       |           |       |           |           |
| Prepared: 2018-12-10, Analyzed: 2018-12-10 |            |               |             |               |       |           |       |           |           |
| Mercury, total                             | < 0.000010 | 0.000010 mg/L |             |               |       |           |       |           |           |
| <b>Matrix Spike (B8L0661-MS2)</b>          |            |               |             |               |       |           |       |           |           |
| Source: 8120365-01                         |            |               |             |               |       |           |       |           |           |
| Prepared: 2018-12-10, Analyzed: 2018-12-10 |            |               |             |               |       |           |       |           |           |
| Mercury, total                             | 0.000229   | 0.000010 mg/L | 0.000250    | < 0.000010    | 92    | 70-130    |       |           |           |
| <b>Reference (B8L0661-SRM1)</b>            |            |               |             |               |       |           |       |           |           |
| Prepared: 2018-12-10, Analyzed: 2018-12-10 |            |               |             |               |       |           |       |           |           |
| Mercury, total                             | 0.00510    | 0.000010 mg/L | 0.00489     |               | 104   | 80-120    |       |           |           |
| <b>Reference (B8L0661-SRM2)</b>            |            |               |             |               |       |           |       |           |           |
| Prepared: 2018-12-10, Analyzed: 2018-12-10 |            |               |             |               |       |           |       |           |           |
| Mercury, total                             | 0.00455    | 0.000010 mg/L | 0.00489     |               | 93    | 80-120    |       |           |           |



|   |  |                               |
|---|--|-------------------------------|
| Interior Health Authority – Kamloops<br>Project: Comprehensive Testing 2018 (Jessy Bhatti)<br>Email to receive report: <a href="mailto:Jastinder.Bhatti@interiorhealth.ca">Jastinder.Bhatti@interiorhealth.ca</a> |  | Lab Number:<br>Date Reported: |
| DWO/EHO: <i>Katie McNamara</i><br>Phone #: <i>250 851 7410</i> Cell #: <i>250 319 8351</i>  | Email: <i>Katherine.mcnamara@interiorhealth.ca</i>   |                               |
| Facility Name: <i>Del Oro CWS</i>   | Facility #: <i>611958</i>  |                               |
| Site Address: <i>709 Wittner Road Kamloops B.C. V2C 6Y7</i>   |  |                               |
| Phone #: <i>250 377 8673</i>  | Email: <i>tmccabe@trnd.ca</i>  | Fax #: <i>250 372-5048</i>    |
| Sampler's Name: <i>Dale Stachorski</i><br>Phone #:<br>Cell #: <i>250 318 3012</i><br>Email:   | Date Collected DD/MM/YYYY: <i>3/12/18</i><br>Time Collected HH/MM: <i>10:45</i> (am) or pm |                               |
| Sampling Site Location: <i>Pumphouse</i>  | ◀◀ SAMPLER MUST FILL IN SAMPLE SITE  |                               |

| Analysis   |
|--|
| Alkalinity, all (KEL)                                |
| <del>Coliforms, Total &amp; Fecal by MPN (KEL)</del> |
| Conductivity in Water (KEL)                          |
| Cyanide, Free in Water, Auto (KEL)                   |
| <del>E. coli MPN Package (KEL)</del>                 |
| Fluoride in Water, IC (KEL)                          |
| Langelier Index (CALC)                               |
| Mercury, total CVAFS Reg & Low (RMD)                 |
| Metals, total, All, Low (RMD)                        |
| Nitrogen, NO2 in water, IC (KEL)                     |
| Nitrogen, NO3 in water, IC (KEL)                     |
| pH in Water (KEL)                                    |
| Sulfate in Water, IC (KEL)                           |
| Temperature (KEL)                                    |

*BS Nov*  
*Dec. 4 0930*  
*Ace 4°C*

NOTE: Coliforms are excluded from the above package as a raw bacteriological water sample from the source (wellhead, intake, etc.) is time-sensitive and should be collected separately as part of your routine bacteriological sampling program (i.e. the samples delivered every month to the Interior Health offices). Ideally, raw bacteriological source samples should be collected quarterly to capture all four seasons.