

REPORTED TO Mid Shuswap Lumby Water Stewards
1631 Mable Lake Rd
Lumby, BC V0E 2G6

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ATTENTION Russ Collins

WORK ORDER 7081113

PO NUMBER Mid Shuswap Lumby Water Stewards
PROJECT Analytical Testing

RECEIVED / TEMP 2017-08-14 09:00 / 12°C
REPORTED 2017-08-21

PROJECT INFO

COC NUMBER 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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| Analysis Description | Method Reference | Technique | Location |
|---|----------------------------------|--|----------|
| Ammonia, Total in Water | APHA 4500-NH3 G* | Automated Colorimetry (Phenate) | Kelowna |
| Anions by IC in Water | APHA 4110 B | Ion Chromatography with Chemical Suppression of Eluent Conductivity | Kelowna |
| Coliforms, Total (MF-Endo) in Water | APHA 9222 B | Membrane Filtration / Incubation on m-Endo Agar | Kelowna |
| Coliforms, Total (MPN) in Water | APHA 9221 B | Most Probable Number / Multiple-Tube Fermentation | Kelowna |
| Conductivity in Water | APHA 2510 B | Conductivity Meter | Kelowna |
| Dissolved Metals by ICPMS in Water | APHA 3030 B / APHA 3125 B | 0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS) | Richmond |
| E. coli (MF-NA+MUG) in Water | APHA 9222 G | Membrane Filtration / Nutrient Agar with MUG | Kelowna |
| E. coli (MPN) in Water | APHA 9221 | Most Probable Number / Multiple-Tube Fermentation | Kelowna |
| Hardness (as CaCO3) in Water | APHA 2340 B* | Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated) | N/A |
| Nitrogen, Total Kjeldahl in Water | APHA 4500-Norg D* | Block Digestion and Flow Injection Analysis | Kelowna |
| pH in Water | APHA 4500-H+ B | Electrometry | Kelowna |
| Phosphorus, Total by Colorimetry in Water | APHA 4500-P B.5* / APHA 4500-P F | Persulfate Digestion / Automated Colorimetry (Ascorbic Acid) | Kelowna |
| Phosphorus, Total Dissolved by Colorimetry in Water | APHA 4500-P B.5* / APHA 4500-P F | Persulfate Digestion / Automated Colorimetry (Ascorbic Acid) | Kelowna |
| Total Metals by ICPMS in Water | APHA 3030 E* / 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

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)
 CFU/100 mL Colony Forming Units per 100 millilitres
 mg/L Milligrams per litre
 MPN/100 mL Most Probable Number per 100 millilitres
 NTU Nephelometric Turbidity Units
 pH units pH < 7 = acidic, pH > 7 = basic
 µg/L Micrograms per litre
 µS/cm Microsiemens per centimetre

Standards / Guidelines Referenced in this Report:

Guidelines for Canadian Drinking Water Quality (Feb 2017)

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

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 |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Duteau Creek (Hwy 6) (7081113-01) [Water] Sampled: 2017-08-13 11:00

Anions

| | | | | | | | |
|----------------|---------|----------|-------|------|-----|------------|--|
| Chloride | 5.48 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | 0.185 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 15.6 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |

General Parameters

| | | | | | | | |
|-----------------------------|---------|----------|--------|----------|------------|------------|-----|
| Ammonia, Total (as N) | < 0.020 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 162 | N/A | 2.0 | µS/cm | N/A | 2017-08-14 | |
| Nitrogen, Total Kjeldahl | 0.372 | N/A | 0.050 | mg/L | 2017-08-14 | 2017-08-16 | |
| pH | 7.83 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-14 | HT2 |
| Phosphorus, Total (as P) | 0.0244 | N/A | 0.0020 | mg/L | 2017-08-14 | 2017-08-15 | |
| Phosphorus, Total Dissolved | 0.0220 | N/A | 0.0020 | mg/L | 2017-08-14 | 2017-08-15 | |
| Turbidity | 1.62 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |

Calculated Parameters

| | | | | | | | |
|---|-------|-----|--------|------|-----|-----|--|
| Hardness, Total (as CaCO ₃) | 68.3 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | 0.185 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | 0.557 | N/A | 0.0500 | mg/L | N/A | N/A | |

Dissolved Metals

| | | | | | | | |
|---------------------|------|-----|-----|------|-----|------------|--|
| Aluminum, dissolved | 24.0 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
|---------------------|------|-----|-----|------|-----|------------|--|

Total Metals

| | | | | | | | |
|-------------------|---------|------------|--------|------|------------|------------|--|
| Aluminum, total | 53.1 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | 0.057 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Arsenic, total | 0.430 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 17.2 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 3.9 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0118 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 20300 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |
| Chromium, total | 0.45 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.0919 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Copper, total | 1.59 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 306 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 1.53 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 4270 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 33.2 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 1.13 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 1.08 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | 30 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 2350 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 0.52 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 4310 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |

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| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Duteau Creek (Hwy 6) (7081113-01) [Water] Sampled: 2017-08-13 11:00, Continued

Total Metals, Continued

| | | | | | | | |
|------------------|----------|-------------|--------|------|------------|------------|--|
| Sodium, total | 4370 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 126 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 4800 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thorium, total | 0.022 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.079 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 2.08 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 0.465 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Vanadium, total | 1.08 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | 4.9 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zirconium, total | 0.337 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |

Microbiological Parameters

| | | | | | | | |
|---------------------|--------|---------------------|-----|------------|-----|------------|--|
| Coliforms, Total | 180000 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |
| Background Colonies | > 200 | N/A | 200 | CFU/100 mL | N/A | 2017-08-14 | |
| E. coli | 1000 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |

Sample ID: Lower Bessette Creek (7081113-02) [Water] Sampled: 2017-08-13 10:20

Anions

| | | | | | | | |
|----------------|---------|----------|-------|------|-----|------------|--|
| Chloride | 9.48 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | < 0.010 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 36.5 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |

General Parameters

| | | | | | | | |
|-----------------------------|---------|----------|--------|----------|------------|------------|-----|
| Ammonia, Total (as N) | < 0.020 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 336 | N/A | 2.0 | µS/cm | N/A | 2017-08-14 | |
| Nitrogen, Total Kjeldahl | 0.295 | N/A | 0.050 | mg/L | 2017-08-14 | 2017-08-16 | |
| pH | 8.26 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-14 | HT2 |
| Phosphorus, Total (as P) | 0.0193 | N/A | 0.0020 | mg/L | 2017-08-14 | 2017-08-15 | |
| Phosphorus, Total Dissolved | 0.0097 | N/A | 0.0020 | mg/L | 2017-08-14 | 2017-08-15 | |
| Turbidity | 1.78 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |

Calculated Parameters

| | | | | | | | |
|---|----------|-----|--------|------|-----|-----|--|
| Hardness, Total (as CaCO ₃) | 153 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | < 0.0100 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | 0.295 | N/A | 0.0500 | mg/L | N/A | N/A | |

Dissolved Metals

| | | | | | | | |
|---------------------|-----|-----|-----|------|-----|------------|--|
| Aluminum, dissolved | 2.8 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
|---------------------|-----|-----|-----|------|-----|------------|--|

Total Metals

| | | | | | | | |
|-----------------|-------|----------|-------|------|------------|------------|--|
| Aluminum, total | 44.9 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | 0.057 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |

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| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Lower Bessette Creek (7081113-02) [Water] Sampled: 2017-08-13 10:20, Continued

Total Metals, Continued

| | | | | | | | |
|-------------------|----------|-------------|--------|------|------------|------------|--|
| Arsenic, total | 0.694 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 30.6 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 5.2 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0223 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 46400 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |
| Chromium, total | 0.25 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.112 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Copper, total | 1.13 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 146 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 3.13 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 9050 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 24.1 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 2.73 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 1.49 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | 25 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 3270 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 1.54 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 4440 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sodium, total | 8820 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 310 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 12500 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thorium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.067 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 2.90 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 1.45 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Vanadium, total | 0.90 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | 2.8 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zirconium, total | 0.100 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |

Microbiological Parameters

| | | | | | | | |
|------------------------|-----|-----|-----|------------|-----|------------|--|
| Coliforms, Total (MPN) | 460 | N/A | 3.0 | MPN/100 mL | N/A | 2017-08-14 | |
| E. coli (MPN) | 240 | N/A | 3.0 | MPN/100 mL | N/A | 2017-08-14 | |

Sample ID: Vance Creek (Mabel Lake Road) (7081113-03) [Water] Sampled: 2017-08-13 10:50

Anions

| | | | | | | | |
|----------------|---------|----------|-------|------|-----|------------|--|
| Chloride | 3.17 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | 0.027 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 36.6 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |

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| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Vance Creek (Mabel Lake Road) (7081113-03) [Water] Sampled: 2017-08-13 10:50, Continued

| General Parameters | | | | | | | |
|------------------------------|----------|-------------|--------|----------|------------|------------|-----|
| Ammonia, Total (as N) | 0.022 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 400 | N/A | 2.0 | µS/cm | N/A | 2017-08-14 | |
| Nitrogen, Total Kjeldahl | 0.129 | N/A | 0.050 | mg/L | 2017-08-14 | 2017-08-16 | |
| pH | 8.40 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-14 | HT2 |
| Phosphorus, Total (as P) | 0.0042 | N/A | 0.0020 | mg/L | 2017-08-14 | 2017-08-15 | |
| Phosphorus, Total Dissolved | 0.0035 | N/A | 0.0020 | mg/L | 2017-08-14 | 2017-08-15 | |
| Turbidity | 0.42 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |
| Calculated Parameters | | | | | | | |
| Hardness, Total (as CaCO3) | 205 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | 0.0267 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | 0.156 | N/A | 0.0500 | mg/L | N/A | N/A | |
| Dissolved Metals | | | | | | | |
| Aluminum, dissolved | 4.9 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
| Total Metals | | | | | | | |
| Aluminum, total | 5.7 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | 0.055 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Arsenic, total | 0.290 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 34.0 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 2.2 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0220 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 68500 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |
| Chromium, total | 0.27 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.0281 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Copper, total | 0.38 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 12.5 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 3.00 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 8230 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 2.96 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 2.65 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 0.236 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | 12 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 2130 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 3.07 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 6610 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sodium, total | 4140 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 451 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 11900 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
Analytical Testing

WORK ORDER REPORTED 7081113
2017-08-21

| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Vance Creek (Mabel Lake Road) (7081113-03) [Water] Sampled: 2017-08-13 10:50, Continued

Total Metals, Continued

| | | | | | | | |
|------------------|--------------|-----------|--------|------|------------|------------|--|
| Thorium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.074 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 0.30 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 1.78 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Vanadium, total | 0.36 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | < 1.0 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zirconium, total | < 0.020 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |

Microbiological Parameters

| | | | | | | | |
|------------------------|-------------|-----|-----|------------|-----|------------|--|
| Coliforms, Total (MPN) | 1100 | N/A | 3.0 | MPN/100 mL | N/A | 2017-08-14 | |
| E. coli (MPN) | 240 | N/A | 3.0 | MPN/100 mL | N/A | 2017-08-14 | |

Sample ID: Mid Bessette Creek (7081113-04) [Water] Sampled: 2017-08-13 10:35

Anions

| | | | | | | | |
|----------------|--------------|----------|-------|------|-----|------------|--|
| Chloride | 11.2 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | 0.176 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | 0.015 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 31.7 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |

General Parameters

| | | | | | | | |
|-----------------------------|---------------|----------|--------|----------|------------|------------|-----|
| Ammonia, Total (as N) | 0.034 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 333 | N/A | 2.0 | µS/cm | N/A | 2017-08-14 | |
| Nitrogen, Total Kjeldahl | 0.406 | N/A | 0.050 | mg/L | 2017-08-14 | 2017-08-16 | |
| pH | 8.23 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-14 | HT2 |
| Phosphorus, Total (as P) | 0.0356 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Phosphorus, Total Dissolved | 0.0202 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Turbidity | 1.86 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |

Calculated Parameters

| | | | | | | | |
|---|--------------|-----|--------|------|-----|-----|--|
| Hardness, Total (as CaCO ₃) | 150 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | 0.192 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | 0.598 | N/A | 0.0500 | mg/L | N/A | N/A | |

Dissolved Metals

| | | | | | | | |
|---------------------|------------|-----|-----|------|-----|------------|--|
| Aluminum, dissolved | 4.7 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
|---------------------|------------|-----|-----|------|-----|------------|--|

Total Metals

| | | | | | | | |
|------------------|---------------|------------|--------|------|------------|------------|--|
| Aluminum, total | 50.6 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | 0.075 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Arsenic, total | 0.723 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 30.9 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 5.7 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0186 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 45800 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
Analytical Testing

WORK ORDER REPORTED 7081113
2017-08-21

| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Mid Bessette Creek (7081113-04) [Water] Sampled: 2017-08-13 10:35, Continued

Total Metals, Continued

| | | | | | | | |
|-------------------|----------|-------------|--------|------|------------|------------|--|
| Chromium, total | 0.36 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.112 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Copper, total | 1.32 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 239 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 3.21 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 8600 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 44.9 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 2.48 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 1.63 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | 42 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 3490 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 1.53 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 5610 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sodium, total | 9510 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 292 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 10400 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thorium, total | 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.086 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 2.86 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 1.26 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Vanadium, total | 1.01 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | 1.6 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zirconium, total | 0.168 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |

Microbiological Parameters

| | | | | | | | |
|---------------------|--------|---------------------|-----|------------|-----|------------|--|
| Coliforms, Total | ≥ 1600 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |
| Background Colonies | > 200 | N/A | 200 | CFU/100 mL | N/A | 2017-08-14 | |
| E. coli | 710 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |

Sample ID: Harris Creek (Hwy 6) (7081113-05) [Water] Sampled: 2017-08-13 11:05

Anions

| | | | | | | | |
|----------------|---------|----------|-------|------|-----|------------|--|
| Chloride | 3.68 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | 0.012 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 30.1 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |

General Parameters

| | | | | | | | |
|--------------------------|-------|-----|-------|-------|------------|------------|--|
| Ammonia, Total (as N) | 0.047 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 307 | N/A | 2.0 | µS/cm | N/A | 2017-08-16 | |
| Nitrogen, Total Kjeldahl | 0.205 | N/A | 0.050 | mg/L | 2017-08-14 | 2017-08-16 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
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WORK ORDER REPORTED 7081113
2017-08-21

| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Harris Creek (Hwy 6) (7081113-05) [Water] Sampled: 2017-08-13 11:05, Continued

General Parameters, Continued

| | | | | | | | |
|-----------------------------|--------|----------|--------|----------|------------|------------|-----|
| pH | 8.06 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-16 | HT2 |
| Phosphorus, Total (as P) | 0.0445 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Phosphorus, Total Dissolved | 0.0283 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Turbidity | 1.38 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |

Calculated Parameters

| | | | | | | | |
|----------------------------|--------|-----|--------|------|-----|-----|--|
| Hardness, Total (as CaCO3) | 145 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | 0.0118 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | 0.217 | N/A | 0.0500 | mg/L | N/A | N/A | |

Dissolved Metals

| | | | | | | | |
|---------------------|-----|-----|-----|------|-----|------------|--|
| Aluminum, dissolved | 3.3 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
|---------------------|-----|-----|-----|------|-----|------------|--|

Total Metals

| | | | | | | | |
|-------------------|----------|-------------|--------|------|------------|------------|--|
| Aluminum, total | 25.8 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | 0.067 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Arsenic, total | 1.50 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 19.4 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 4.4 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0082 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 43100 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |
| Chromium, total | 0.22 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.0885 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Copper, total | 0.77 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 264 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 4.80 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 8950 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 48.7 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 2.08 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 1.53 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | 54 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 3690 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 0.63 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 8200 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sodium, total | 8130 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 223 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 7600 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thorium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.084 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 1.48 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 1.17 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
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WORK ORDER REPORTED 7081113
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| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Harris Creek (Hwy 6) (7081113-05) [Water] Sampled: 2017-08-13 11:05, Continued

Total Metals, Continued

| | | | | | | | |
|------------------|-------|-----------|-------|------|------------|------------|--|
| Vanadium, total | 1.35 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | 9.0 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zirconium, total | 0.104 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |

Microbiological Parameters

| | | | | | | | |
|---------------------|--------|---------------------|-----|------------|-----|------------|--|
| Coliforms, Total | ≥ 1800 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |
| Background Colonies | > 200 | N/A | 200 | CFU/100 mL | N/A | 2017-08-14 | |
| E. coli | 580 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |

Sample ID: Shuswap River (Odd Fellows) (7081113-06) [Water] Sampled: 2017-08-13 09:45

Anions

| | | | | | | | |
|----------------|---------|----------|-------|------|-----|------------|--|
| Chloride | 0.66 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | < 0.010 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 8.5 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |

General Parameters

| | | | | | | | |
|-----------------------------|----------|----------|--------|----------|------------|------------|-----|
| Ammonia, Total (as N) | 0.020 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 128 | N/A | 2.0 | µS/cm | N/A | 2017-08-16 | |
| Nitrogen, Total Kjeldahl | 0.098 | N/A | 0.050 | mg/L | 2017-08-14 | 2017-08-16 | |
| pH | 7.90 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-16 | HT2 |
| Phosphorus, Total (as P) | < 0.0020 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Phosphorus, Total Dissolved | < 0.0020 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Turbidity | 0.52 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |

Calculated Parameters

| | | | | | | | |
|---|----------|-----|--------|------|-----|-----|--|
| Hardness, Total (as CaCO ₃) | 55.3 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | < 0.0100 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | 0.0980 | N/A | 0.0500 | mg/L | N/A | N/A | |

Dissolved Metals

| | | | | | | | |
|---------------------|-----|-----|-----|------|-----|------------|--|
| Aluminum, dissolved | 9.2 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
|---------------------|-----|-----|-----|------|-----|------------|--|

Total Metals

| | | | | | | | |
|------------------|---------|------------|--------|------|------------|------------|--|
| Aluminum, total | 15.6 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | < 0.050 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Arsenic, total | 0.249 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 10.8 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 1.4 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0102 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 18000 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |
| Chromium, total | 0.20 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.0207 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
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WORK ORDER REPORTED 7081113
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| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Shuswap River (Odd Fellows) (7081113-06) [Water] Sampled: 2017-08-13 09:45, Continued

Total Metals, Continued

| | | | | | | | |
|-------------------|----------|-------------|--------|------|------------|------------|--|
| Copper, total | 0.35 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 37.6 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 0.841 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 2540 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 8.11 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 0.964 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 0.188 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | < 10 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 988 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 0.55 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 2650 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sodium, total | 1560 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 93.2 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 2800 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thorium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.117 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 0.37 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 0.451 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Vanadium, total | 0.44 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | < 1.0 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zirconium, total | < 0.020 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |

Microbiological Parameters

| | | | | | | | |
|---------------------|-------|---------------------|-----|------------|-----|------------|--|
| Coliforms, Total | 290 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |
| Background Colonies | > 200 | N/A | 200 | CFU/100 mL | N/A | 2017-08-14 | |
| E. coli | 47 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |

Sample ID: Shuswap River (Wilsey Dam) (7081113-07) [Water] Sampled: 2017-08-13 10:05

Anions

| | | | | | | | |
|----------------|---------|----------|-------|------|-----|------------|--|
| Chloride | 0.44 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | < 0.010 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 17.6 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |

General Parameters

| | | | | | | | |
|--------------------------|----------|----------|--------|----------|------------|------------|-----|
| Ammonia, Total (as N) | < 0.020 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 116 | N/A | 2.0 | µS/cm | N/A | 2017-08-16 | |
| Nitrogen, Total Kjeldahl | 0.104 | N/A | 0.050 | mg/L | 2017-08-14 | 2017-08-16 | |
| pH | 7.89 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-16 | HT2 |
| Phosphorus, Total (as P) | < 0.0020 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
Analytical Testing

WORK ORDER REPORTED 7081113
2017-08-21

| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Shuswap River (Wilsey Dam) (7081113-07) [Water] Sampled: 2017-08-13 10:05, Continued

General Parameters, Continued

| | | | | | | | |
|-----------------------------|-------------|----------|--------|------|------------|------------|--|
| Phosphorus, Total Dissolved | < 0.0020 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Turbidity | 0.30 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |

Calculated Parameters

| | | | | | | | |
|----------------------------|--------------|-----|--------|------|-----|-----|--|
| Hardness, Total (as CaCO3) | 51.6 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | < 0.0100 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | 0.104 | N/A | 0.0500 | mg/L | N/A | N/A | |

Dissolved Metals

| | | | | | | | |
|---------------------|------------|-----|-----|------|-----|------------|--|
| Aluminum, dissolved | 8.4 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
|---------------------|------------|-----|-----|------|-----|------------|--|

Total Metals

| | | | | | | | |
|-------------------|---------------|-------------|--------|------|------------|------------|--|
| Aluminum, total | 11.9 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | < 0.050 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Arsenic, total | 0.183 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 10.2 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 1.4 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0075 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 16900 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |
| Chromium, total | 0.32 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.0139 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Copper, total | 0.35 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 21.1 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 0.780 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 2290 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 2.78 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 0.848 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 0.214 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | < 10 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 900 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 0.49 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 2510 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sodium, total | 1340 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 83.7 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 2500 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thorium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.073 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 0.21 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 0.375 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Vanadium, total | 0.40 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | 10.4 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
Analytical Testing

WORK ORDER REPORTED 7081113
2017-08-21

| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Shuswap River (Wilsey Dam) (7081113-07) [Water] Sampled: 2017-08-13 10:05, Continued

| <i>Total Metals, Continued</i> | | | | | | | |
|-----------------------------------|---------|---------------------|-------|------------|------------|------------|--|
| Zirconium, total | < 0.020 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| <i>Microbiological Parameters</i> | | | | | | | |
| Coliforms, Total | ≥ 310 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |
| Background Colonies | > 200 | N/A | 200 | CFU/100 mL | N/A | 2017-08-14 | |
| E. coli | 10 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |

Sample ID: Schunter Creek (7081113-08) [Water] Sampled: 2017-08-13 12:43

| <i>Anions</i> | | | | | | | |
|---|----------|------------|--------|----------|------------|------------|-----|
| Chloride | 0.14 | AO ≤ 250 | 0.10 | mg/L | N/A | 2017-08-16 | |
| Nitrate (as N) | < 0.010 | MAC = 10 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Nitrite (as N) | < 0.010 | MAC = 1 | 0.010 | mg/L | N/A | 2017-08-16 | |
| Sulfate | 21.1 | AO ≤ 500 | 1.0 | mg/L | N/A | 2017-08-16 | |
| <i>General Parameters</i> | | | | | | | |
| Ammonia, Total (as N) | < 0.020 | N/A | 0.020 | mg/L | N/A | 2017-08-17 | |
| Conductivity (EC) | 270 | N/A | 2.0 | µS/cm | N/A | 2017-08-16 | |
| Nitrogen, Total Kjeldahl | < 0.050 | N/A | 0.050 | mg/L | 2017-08-15 | 2017-08-16 | |
| pH | 8.25 | 7.0-10.5 | 0.10 | pH units | N/A | 2017-08-16 | HT2 |
| Phosphorus, Total (as P) | < 0.0020 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Phosphorus, Total Dissolved | < 0.0020 | N/A | 0.0020 | mg/L | 2017-08-15 | 2017-08-17 | |
| Turbidity | 0.27 | OG < 0.1 | 0.10 | NTU | N/A | 2017-08-14 | |
| <i>Calculated Parameters</i> | | | | | | | |
| Hardness, Total (as CaCO ₃) | 134 | N/A | 0.100 | mg/L | N/A | N/A | |
| Nitrate+Nitrite (as N) | < 0.0100 | N/A | 0.0100 | mg/L | N/A | N/A | |
| Nitrogen, Total | < 0.0500 | N/A | 0.0500 | mg/L | N/A | N/A | |
| <i>Dissolved Metals</i> | | | | | | | |
| Aluminum, dissolved | 5.9 | N/A | 1.0 | µg/L | N/A | 2017-08-17 | |
| <i>Total Metals</i> | | | | | | | |
| Aluminum, total | 11.0 | OG < 100 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Antimony, total | < 0.050 | MAC = 6 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Arsenic, total | 0.194 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Barium, total | 29.1 | MAC = 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Beryllium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Bismuth, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Boron, total | 1.4 | MAC = 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cadmium, total | 0.0176 | MAC = 5 | 0.0020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Calcium, total | 41200 | N/A | 40 | µg/L | 2017-08-15 | 2017-08-18 | |
| Chromium, total | 0.35 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Cobalt, total | 0.0164 | N/A | 0.0050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Copper, total | 0.56 | AO ≤ 1000 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Iron, total | 12.0 | AO ≤ 300 | 2.0 | µg/L | 2017-08-15 | 2017-08-18 | |

REPORTED TO PROJECT Mid Shuswap Lumby Water Stewards
Analytical Testing

WORK ORDER REPORTED 7081113
2017-08-21

| Analyte | Result / Recovery | Standard / Guideline | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|----------------------|--------------|-------|----------|----------|-------|

Sample ID: Schunter Creek (7081113-08) [Water] Sampled: 2017-08-13 12:43, Continued

Total Metals, Continued

| | | | | | | | |
|-------------------|--------------|-------------|--------|------|------------|------------|--|
| Lead, total | < 0.050 | MAC = 10 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Lithium, total | 1.05 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Magnesium, total | 7430 | N/A | 5.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Manganese, total | 0.454 | AO ≤ 50 | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Molybdenum, total | 1.82 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Nickel, total | 0.296 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |
| Phosphorus, total | 10 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Potassium, total | 1670 | N/A | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Selenium, total | 1.92 | MAC = 50 | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silicon, total | 4700 | N/A | 50 | µg/L | 2017-08-15 | 2017-08-18 | |
| Silver, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sodium, total | 1890 | AO ≤ 200000 | 10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Strontium, total | 226 | N/A | 0.10 | µg/L | 2017-08-15 | 2017-08-18 | |
| Sulfur, total | 7000 | N/A | 1000 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tellurium, total | < 0.050 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thallium, total | < 0.0040 | N/A | 0.0040 | µg/L | 2017-08-15 | 2017-08-18 | |
| Thorium, total | < 0.010 | N/A | 0.010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Tin, total | 0.142 | N/A | 0.050 | µg/L | 2017-08-15 | 2017-08-18 | |
| Titanium, total | 0.30 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Uranium, total | 0.490 | MAC = 20 | 0.0010 | µg/L | 2017-08-15 | 2017-08-18 | |
| Vanadium, total | 0.52 | N/A | 0.20 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zinc, total | 1.2 | AO ≤ 5000 | 1.0 | µg/L | 2017-08-15 | 2017-08-18 | |
| Zirconium, total | < 0.020 | N/A | 0.020 | µg/L | 2017-08-15 | 2017-08-18 | |

Microbiological Parameters

| | | | | | | | |
|---------------------|-----------------|---------------------|-----|------------|-----|------------|--|
| Coliforms, Total | 940 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |
| Background Colonies | > 200 | N/A | 200 | CFU/100 mL | N/A | 2017-08-14 | |
| E. coli | 240 | MAC = None Detected | 1 | CFU/100 mL | N/A | 2017-08-14 | |

Sample / Analysis Qualifiers:

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