



HEMMERA ENVIROCHEM INC.
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Date Received: 10-OCT-14
Report Date: 24-OCT-14 15:30 (MT)
Version: FINAL REV. 2

Client Phone: 867-456-4865

Certificate of Analysis

Lab Work Order #: L1531123
Project P.O. #: NOT SUBMITTED
Job Reference: 1343-005.05
C of C Numbers: 1, 2, 3, 4
Legal Site Desc:

Comments:

24-OCT-2014 This report replaces the previous version and contains a correction to a Sample Date for one sample.

Brent Mack, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-1 Water 07-OCT-14 15:03 CH-P-13-05/50 | L1531123-2 Water 07-OCT-14 13:00 GLL07-03 | L1531123-3 Water 07-OCT-14 14:42 GCI-HA-03A | L1531123-4 Water 07-OCT-14 18:30 GSI-DC-03B | L1531123-5 Water 07-OCT-14 17:36 MW09-18 | |
|---|--|---|---|---|--|-------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | 2770 | 823 | 882 | 1090 | 2650 |
| | Hardness (as CaCO3) (mg/L) | 1860 | 449 | 512 | 685 | 1860 |
| | pH (pH) | 6.67 | 6.96 | 7.57 | 8.08 | 7.82 |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 89.8 | 45.6 | 161 | 242 | 572 |
| | Ammonia, Total (as N) (mg/L) | 0.0342 | 0.0617 | | 0.129 | 0.0244 |
| | Chloride (Cl) (mg/L) | <10 ^{DLA} | <0.50 | <2.5 ^{DLA} | <5.0 ^{DLA} | <10 ^{DLA} |
| | Fluoride (F) (mg/L) | <0.40 ^{DLA} | 0.096 | <0.10 ^{DLA} | <0.20 ^{DLA} | <0.40 ^{DLA} |
| | Nitrate (as N) (mg/L) | <0.10 ^{DLA} | 0.571 | <0.025 ^{DLA} | <0.050 ^{DLA} | <0.10 ^{DLA} |
| | Nitrite (as N) (mg/L) | <0.020 ^{DLA} | 0.0218 | <0.0050 ^{DLA} | <0.010 ^{DLA} | <0.020 ^{DLA} |
| | Total Kjeldahl Nitrogen (mg/L) | 0.071 | 0.148 | | 0.377 | 0.085 |
| | Sulfate (SO4) (mg/L) | 1890 | 390 | 343 | 411 | 1400 |
| | Sulphide as S (mg/L) | <0.020 | 0.164 | | <0.020 | <0.020 |
| | Anion Sum (meq/L) | 41.1 | 9.07 | 10.3 | 13.4 | 40.5 |
| | Cation Sum (meq/L) | 40.6 | 9.63 | 13.6 | 14.1 | 37.9 |
| | Cation - Anion Balance (%) | -0.6 | 3.0 | 13.7 | 2.5 | -3.3 |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.0050 ^{CNP} | <0.0050 | | <0.0050 |
| Cyanide, Total (mg/L) | | <0.0050 ^{CNP} | <0.0050 | | <0.0050 | <0.0050 |
| Thiocyanate (SCN) (mg/L) | | <0.50 | <0.50 | | | <0.50 |
| Cyanide, Free (mg/L) | | <0.0050 ^{CNP} | <0.0050 | | <0.0050 | <0.0050 |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | 12.4 | 9.7 | | 51.7 | 107 |
| | Total Organic Carbon (mg/L) | 0.88 | 1.21 | | 5.56 | 2.66 |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0656 | 0.0121 | 0.0234 | 0.0012 | <0.0020 ^{DLA} |
| | Antimony (Sb)-Dissolved (mg/L) | <0.00050 ^{DLA} | <0.00010 | 0.00027 | 0.00066 | 0.00026 |
| | Arsenic (As)-Dissolved (mg/L) | 0.00389 | <0.00010 | 0.0420 | 0.00235 | 0.0575 |
| | Barium (Ba)-Dissolved (mg/L) | 0.00674 | 0.0108 | 0.0848 | 0.0243 | 0.00832 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00050 ^{DLA} | <0.00010 | <0.00010 | <0.00010 | <0.00020 ^{DLA} |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.0025 ^{DLA} | <0.00050 | <0.00050 | <0.00050 | <0.0010 ^{DLA} |
| | Boron (B)-Dissolved (mg/L) | <0.050 ^{DLA} | <0.010 | <0.010 | <0.010 | <0.020 ^{DLA} |
| | Cadmium (Cd)-Dissolved (mg/L) | 0.333 | 0.276 | 0.000081 | 0.000846 | 0.000064 |
| | Calcium (Ca)-Dissolved (mg/L) | 453 | 138 | 125 | 177 | 359 |
| | Chromium (Cr)-Dissolved (mg/L) | <0.00050 ^{DLA} | <0.00010 | 0.00294 | 0.00176 | <0.00020 ^{DLA} |
| | Cobalt (Co)-Dissolved (mg/L) | 0.0382 | 0.00282 | 0.00107 | 0.00115 | <0.00020 ^{DLA} |
| | Copper (Cu)-Dissolved (mg/L) | 0.117 | 0.00880 | 0.00171 | 0.00227 | <0.00040 ^{DLA} |
| | Iron (Fe)-Dissolved (mg/L) | 12.0 | 2.24 | 55.0 | 0.013 | <0.010 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID Description Sampled Date Sampled Time Client ID | L1531123-6 Water 07-OCT-14 16:30 MW09-17 | L1531123-7 Water 07-OCT-14 15:10 GSI-HA-04A | L1531123-8 Water 07-OCT-14 14:54 GSI-HA-05A | L1531123-9 Water 07-OCT-14 14:20 GSI-HA-01A | L1531123-10 Water 07-OCT-14 14:33 GSI-HA-02A |
|-----------------------------------|---|--|---|---|---|--|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | 2710 | 240 | 897 | 971 | 695 |
| | Hardness (as CaCO3) (mg/L) | 1880 | 104 | 502 | 566 | 372 |
| | pH (pH) | 7.83 | 7.54 | 7.75 | 8.14 | 7.33 |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 638 | 29.6 | 170 | 218 | 121 |
| | Ammonia, Total (as N) (mg/L) | <0.0050 | | | | |
| | Chloride (Cl) (mg/L) | <10 ^{DLA} | <0.50 | <2.5 ^{DLA} | <5.0 ^{DLA} | 0.56 |
| | Fluoride (F) (mg/L) | <0.40 ^{DLA} | 0.029 | <0.10 ^{DLA} | <0.20 ^{DLA} | 0.142 ^{HTD} |
| | Nitrate (as N) (mg/L) | 0.17 | <0.0050 | 0.054 ^{DLA} | <0.050 ^{DLA} | 0.0126 ^{HTD} |
| | Nitrite (as N) (mg/L) | <0.020 ^{DLA} | <0.0010 | <0.0050 ^{DLA} | <0.010 ^{DLA} | 0.0027 ^{HTD} |
| | Total Kjeldahl Nitrogen (mg/L) | 0.088 | | | | |
| | Sulfate (SO4) (mg/L) | 1440 | 80.5 | 340 | 351 | 249 |
| | Sulphide as S (mg/L) | <0.020 | | | | |
| | Anion Sum (meq/L) | 42.8 | 2.27 | 10.5 | 11.7 | 7.62 |
| | Cation Sum (meq/L) | 38.3 | 2.64 | 11.2 | 11.7 | 8.92 |
| | Cation - Anion Balance (%) | -5.6 | 7.6 | 3.3 | 0.3 | 7.8 |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.0050 | | <0.0050 | <0.0050 |
| Cyanide, Total (mg/L) | | <0.0050 | | <0.0050 | <0.0050 | |
| Thiocyanate (SCN) (mg/L) | | <0.50 | | | | |
| Cyanide, Free (mg/L) | | <0.0050 | | <0.0050 | <0.0050 | |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | 111 | | | | |
| | Total Organic Carbon (mg/L) | 2.71 | | | | |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | <0.0020 ^{DLA} | 0.0823 | 0.0100 | 0.0033 | 0.0081 |
| | Antimony (Sb)-Dissolved (mg/L) | 0.00036 | 0.00097 | 0.00014 | 0.00023 | 0.00067 |
| | Arsenic (As)-Dissolved (mg/L) | 0.0225 | 0.00917 | 0.0404 | 0.0112 | 0.00651 |
| | Barium (Ba)-Dissolved (mg/L) | 0.00778 | 0.0420 | 0.116 | 0.103 | 0.101 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00020 ^{DLA} | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.0010 ^{DLA} | <0.00050 | <0.00050 | <0.00050 | <0.00050 |
| | Boron (B)-Dissolved (mg/L) | 0.079 | <0.010 | <0.010 | <0.010 | 0.022 |
| | Cadmium (Cd)-Dissolved (mg/L) | <0.000020 ^{DLA} | 0.000026 | 0.000061 | 0.000023 | 0.000122 |
| | Calcium (Ca)-Dissolved (mg/L) | 346 | 26.4 | 133 | 136 | 94.6 |
| | Chromium (Cr)-Dissolved (mg/L) | <0.00020 ^{DLA} | 0.00066 | 0.00079 | 0.00010 | 0.00010 |
| | Cobalt (Co)-Dissolved (mg/L) | <0.00020 ^{DLA} | 0.00051 | 0.00044 | 0.00029 | 0.00085 |
| | Copper (Cu)-Dissolved (mg/L) | 0.00046 | 0.00198 | 0.00157 | 0.00103 | 0.00704 |
| | Iron (Fe)-Dissolved (mg/L) | <0.010 | 8.36 | 14.6 | 2.43 | 20.3 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-11 Water 07-OCT-14 14:08 GSI-DC-02B | L1531123-12 Water 07-OCT-14 12:27 MW09-16 | L1531123-13 Water 07-OCT-14 11:00 MW09-19 | L1531123-14 Water 07-OCT-14 11:00 DUP2 | L1531123-15 Water 07-OCT-14 15:03 DUP-1 | |
|---|--|---|---|--|---|-------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | 928 | 2010 | 2130 | 2130 | 2750 |
| | Hardness (as CaCO3) (mg/L) | 544 | 1330 | 1380 | 1380 | 1850 |
| | pH (pH) | 7.98 | 7.56 | 7.36 | 7.29 | 6.60 |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 244 | 337 | 473 | 480 | 87.1 |
| | Ammonia, Total (as N) (mg/L) | | <0.0050 | 4.86 | 4.93 | 0.0333 |
| | Chloride (Cl) (mg/L) | <2.5 ^{DLA} | <5.0 ^{DLA} | <5.0 ^{DLA} | <5.0 ^{DLA} | <10 ^{DLA} |
| | Fluoride (F) (mg/L) | <0.10 ^{DLA} | <0.20 ^{DLA} | <0.20 ^{DLA} | <0.20 ^{DLA} | <0.40 ^{DLA} |
| | Nitrate (as N) (mg/L) | 0.298 | 0.140 | <0.050 ^{DLA} | <0.050 ^{DLA} | <0.10 ^{DLA} |
| | Nitrite (as N) (mg/L) | 0.0104 | <0.010 ^{DLA} | <0.010 ^{DLA} | <0.010 ^{DLA} | <0.020 ^{DLA} |
| | Total Kjeldahl Nitrogen (mg/L) | | 0.092 | 6.19 | 6.14 | 0.058 |
| | Sulfate (SO4) (mg/L) | 301 | 1020 | 968 | 948 | 1900 |
| | Sulphide as S (mg/L) | | <0.020 | 0.242 | 0.221 | <0.020 |
| | Anion Sum (meq/L) | 11.2 | 28.0 | 29.6 | 29.3 | 41.3 |
| | Cation Sum (meq/L) | 11.4 | 27.3 | 29.9 | 29.9 | 40.4 |
| | Cation - Anion Balance (%) | 0.8 | -1.4 | 0.4 | 1.0 | -1.1 |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Cyanide, Total (mg/L) | | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 ^{CNP} |
| Thiocyanate (SCN) (mg/L) | | | <0.50 | <0.50 | <0.50 | <0.50 |
| Cyanide, Free (mg/L) | | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 ^{CNP} |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | | 66.4 | 105 | 103 | 13.6 |
| | Total Organic Carbon (mg/L) | | 3.14 | 24.4 | 23.2 | 1.23 |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0026 | <0.0020 ^{DLA} | 0.0118 | 0.0117 | 0.0668 |
| | Antimony (Sb)-Dissolved (mg/L) | 0.00032 | 0.0690 | 0.00020 | 0.00021 | <0.00050 ^{DLA} |
| | Arsenic (As)-Dissolved (mg/L) | 0.00537 | 0.00808 | 0.105 | 0.107 | 0.00376 |
| | Barium (Ba)-Dissolved (mg/L) | 0.115 | 0.0155 | 0.0529 | 0.0531 | 0.00697 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00010 | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00050 ^{DLA} |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.00050 | <0.0010 ^{DLA} | <0.0010 ^{DLA} | <0.0010 ^{DLA} | <0.0025 ^{DLA} |
| | Boron (B)-Dissolved (mg/L) | <0.010 | 0.112 | 0.223 | 0.239 | <0.050 ^{DLA} |
| | Cadmium (Cd)-Dissolved (mg/L) | 0.000115 | 0.0286 | <0.000020 ^{DLA} | <0.000020 ^{DLA} | 0.326 |
| | Calcium (Ca)-Dissolved (mg/L) | 141 | 307 | 304 | 307 | 453 |
| | Chromium (Cr)-Dissolved (mg/L) | <0.00010 | <0.00020 ^{DLA} | 0.00043 | 0.00041 | <0.00050 ^{DLA} |
| | Cobalt (Co)-Dissolved (mg/L) | 0.00138 | <0.00020 ^{DLA} | 0.00227 | 0.00224 | 0.0383 |
| | Copper (Cu)-Dissolved (mg/L) | 0.00430 | 0.00553 | <0.00040 ^{DLA} | <0.00040 ^{DLA} | 0.109 |
| | Iron (Fe)-Dissolved (mg/L) | 1.64 | <0.010 | 18.0 | 18.2 | 11.8 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID Description Sampled Date Sampled Time Client ID | L1531123-16 Water 07-OCT-14 12:27 FB1 | L1531123-17 Water 07-OCT-14 13:10 GSI-DC-01B | L1531123-18 Water 08-OCT-14 18:37 W14103083BH03 | L1531123-19 Water 08-OCT-14 15:07 GIS-PC-03B | L1531123-20 Water 08-OCT-14 13:40 GIS-PC-04B |
|-----------------------------------|---|---|--|---|--|--|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | <2.0 | | 761 | | |
| | Hardness (as CaCO3) (mg/L) | <0.50 | 320 | 390 | 637 | 264 |
| | pH (pH) | 5.59 | | 6.80 | | |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | <2.0 | | 260 | | |
| | Ammonia, Total (as N) (mg/L) | <0.0050 | | 6.13 | | |
| | Chloride (Cl) (mg/L) | <0.50 | | <2.5 ^{DLA} | | |
| | Fluoride (F) (mg/L) | <0.020 | | <0.10 ^{DLA} | | |
| | Nitrate (as N) (mg/L) | <0.0050 | | <0.025 ^{DLA} | | |
| | Nitrite (as N) (mg/L) | <0.0010 | | <0.0050 ^{DLA} | | |
| | Total Kjeldahl Nitrogen (mg/L) | <0.050 | | 7.45 | | |
| | Sulfate (SO4) (mg/L) | <0.50 | | 160 | | |
| | Sulphide as S (mg/L) | <0.020 | | 0.136 | | |
| | Anion Sum (meq/L) | <0.10 | | 8.53 | | |
| | Cation Sum (meq/L) | <0.10 | | 13.7 | | |
| | Cation - Anion Balance (%) | 0.0 | | 23.4 | | |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.0050 | | <0.010 ^{DLM} | |
| Cyanide, Total (mg/L) | | <0.0050 | | <0.010 ^{DLM} | | |
| Thiocyanate (SCN) (mg/L) | | <0.50 | | <0.50 | | |
| Cyanide, Free (mg/L) | | <0.0050 | | <0.010 ^{DLM} | | |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | <0.50 | | 55.5 | | |
| | Total Organic Carbon (mg/L) | <0.50 | | 30.6 | | |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0015 ^{RRV} | 0.0030 | 0.0529 | 0.0155 | 0.0115 |
| | Antimony (Sb)-Dissolved (mg/L) | <0.00010 | 0.00117 | 0.00025 | 0.00367 | 0.00084 |
| | Arsenic (As)-Dissolved (mg/L) | <0.00010 | 0.00353 | 0.0605 | 0.0190 | 0.0109 |
| | Barium (Ba)-Dissolved (mg/L) | <0.000050 | 0.0246 | 0.354 | 0.113 | 0.114 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00010 | <0.00010 | <0.00010 | <0.00010 | <0.00010 |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.00050 | <0.00050 | <0.00050 | <0.00050 | <0.00050 |
| | Boron (B)-Dissolved (mg/L) | <0.010 | 0.058 | <0.010 | 0.049 | 0.022 |
| | Cadmium (Cd)-Dissolved (mg/L) | <0.000010 | 0.000067 | <0.000010 | 0.000051 | 0.000010 |
| | Calcium (Ca)-Dissolved (mg/L) | <0.050 | 89.5 | 104 | 94.0 | 75.3 |
| | Chromium (Cr)-Dissolved (mg/L) | <0.00010 | 0.00708 | 0.00074 | 0.00648 | 0.00581 |
| | Cobalt (Co)-Dissolved (mg/L) | <0.00010 | 0.00016 | 0.00062 | 0.00598 | 0.00471 |
| | Copper (Cu)-Dissolved (mg/L) | <0.00020 | 0.0512 | <0.00020 | 0.00491 | 0.00066 |
| | Iron (Fe)-Dissolved (mg/L) | <0.010 | 0.026 | 92.4 | 1.11 | 4.16 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID Description Sampled Date Sampled Time Client ID | L1531123-21 Water 08-OCT-14 14:07 GIS-PC-05B | L1531123-22 Water 08-OCT-14 11:05 GLL07-02 | L1531123-23 Water 08-OCT-14 17:02 MW09-05 | L1531123-24 Water 08-OCT-14 15:22 MW09-22 | L1531123-25 Water 08-OCT-14 18:35 MW09-23 |
|-----------------------------------|---|--|--|---|---|---|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | | 322 | 1600 | 2000 | 1440 |
| | Hardness (as CaCO3) (mg/L) | 182 | 164 | 888 | | 784 |
| | pH (pH) | | 7.26 | 7.03 | 6.69 | 7.51 |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | | 72.6 | 88.7 | 148 | 268 |
| | Ammonia, Total (as N) (mg/L) | | 0.0051 | 4.77 | 1.92 | 2.71 |
| | Chloride (Cl) (mg/L) | | <0.50 | <5.0 ^{DLA} | <5.0 ^{DLA} | <5.0 ^{DLA} |
| | Fluoride (F) (mg/L) | | 0.048 | <0.20 ^{DLA} | <0.20 ^{DLA} | <0.20 ^{DLA} |
| | Nitrate (as N) (mg/L) | | 0.655 | <0.050 ^{DLA} | 11.0 | <0.050 ^{DLA} |
| | Nitrite (as N) (mg/L) | | <0.0010 | 0.012 | 0.198 | <0.010 ^{DLA} |
| | Total Kjeldahl Nitrogen (mg/L) | | 0.426 | 5.76 | 4.76 | 4.14 |
| | Sulfate (SO4) (mg/L) | | 88.4 | 876 | 1040 | 614 |
| | Sulphide as S (mg/L) | | <0.020 | <0.020 | 0.030 | 0.038 |
| | Anion Sum (meq/L) | | 3.34 | 20.0 | | 18.1 |
| | Cation Sum (meq/L) | | 3.46 | 20.8 | | 18.4 |
| | Cation - Anion Balance (%) | | 1.8 | 2.0 | | 0.8 |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | | <0.0050 | <0.0050 | 0.0351 |
| Cyanide, Total (mg/L) | | | <0.0050 | <0.0050 | 0.0786 | 0.016 ^{DLM} |
| Thiocyanate (SCN) (mg/L) | | | <0.50 | <0.50 | <0.50 | <0.50 |
| Cyanide, Free (mg/L) | | | <0.0050 | <0.0050 | 0.0330 | <0.010 ^{DLM} |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | | 14.2 | 14.7 | 22.7 | 57.1 |
| | Total Organic Carbon (mg/L) | | 9.45 | 12.2 | 12.8 | 17.4 |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0164 | 0.0128 | 0.0235 | | 0.0090 |
| | Antimony (Sb)-Dissolved (mg/L) | 0.00223 | 0.00061 | 0.00237 | | <0.00050 ^{DLA} |
| | Arsenic (As)-Dissolved (mg/L) | 0.00267 | 0.00135 | 0.695 | | 0.00194 |
| | Barium (Ba)-Dissolved (mg/L) | 0.0360 | 0.0213 | 0.0312 | | 0.0408 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00010 | <0.00010 | <0.00010 | | <0.00050 ^{DLA} |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.00050 | <0.00050 | <0.00050 | | <0.0025 ^{DLA} |
| | Boron (B)-Dissolved (mg/L) | <0.010 | <0.010 | 0.093 | | 0.143 |
| | Cadmium (Cd)-Dissolved (mg/L) | 0.000082 | 0.000169 | 0.00320 | | <0.000050 ^{DLA} |
| | Calcium (Ca)-Dissolved (mg/L) | 50.7 | 46.2 | 281 | | 206 |
| | Chromium (Cr)-Dissolved (mg/L) | 0.00080 | 0.00014 | 0.00058 | | <0.00050 ^{DLA} |
| | Cobalt (Co)-Dissolved (mg/L) | <0.00010 | <0.00010 | 0.0178 | | 0.0196 |
| | Copper (Cu)-Dissolved (mg/L) | 0.00411 | 0.00298 | 0.00283 | | <0.0010 ^{DLA} |
| | Iron (Fe)-Dissolved (mg/L) | 0.044 | 0.031 | 8.64 | | 13.7 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-26 Water 08-OCT-14 12:38 MW09-04 | L1531123-27 Water 08-OCT-14 13:54 MW09-03 | L1531123-28 Water 08-OCT-14 10:15 MW09-02 | L1531123-29 Water 08-OCT-14 13:54 FB2 | L1531123-30 Water 08-OCT-14 18:37 DUP-3 | |
|---|---|---|---|---|---|------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | 2690 | 2450 | 2940 | <2.0 | 751 |
| | Hardness (as CaCO3) (mg/L) | 1670 | 1580 | 1570 | <0.50 | 386 |
| | pH (pH) | 8.02 | 7.82 | 6.97 | 5.68 | 6.90 |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 96.8 | 178 | 44.3 | <2.0 | 262 |
| | Ammonia, Total (as N) (mg/L) | 7.28 | 1.06 | 13.6 | <0.0050 | 6.07 ^{RRV} |
| | Chloride (Cl) (mg/L) | <10 ^{DLA} | <10 ^{DLA} | <10 ^{DLA} | <0.50 | 2.9 ^{DLA} |
| | Fluoride (F) (mg/L) | <0.40 ^{DLA} | <0.40 ^{DLA} | 0.49 ^{DLA} | <0.020 | <0.10 ^{DLA} |
| | Nitrate (as N) (mg/L) | <0.10 ^{DLA} | <0.10 ^{DLA} | <0.10 ^{DLA} | <0.0050 | <0.025 ^{DLA} |
| | Nitrite (as N) (mg/L) | <0.020 ^{DLA} | <0.020 ^{DLA} | <0.020 ^{DLA} | <0.0010 | <0.0050 ^{DLA} |
| | Total Kjeldahl Nitrogen (mg/L) | 8.77 | 1.43 | 17.8 | <0.050 | 7.41 |
| | Sulfate (SO4) (mg/L) | 1730 | 1530 | 1900 | <0.50 | 154 |
| | Sulphide as S (mg/L) | <0.020 | <0.020 | <0.020 | <0.020 | 0.114 |
| | Anion Sum (meq/L) | 38.0 | 35.5 | 40.4 | <0.10 | 8.54 |
| | Cation Sum (meq/L) | 37.3 | 35.1 | 42.2 | <0.10 | 13.5 |
| | Cation - Anion Balance (%) | -0.8 | -0.6 | 2.1 | 0.0 | 22.6 |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.0050 | <0.010 ^{DLM} | 0.018 ^{DLM} | <0.0050 |
| Cyanide, Total (mg/L) | | <0.0050 | 0.043 ^{DLM} | 0.227 ^{DLM} | <0.0050 | <0.010 ^{DLM} |
| Thiocyanate (SCN) (mg/L) | | <0.50 | <0.50 | 1.21 | <0.50 | <0.50 |
| Cyanide, Free (mg/L) | | <0.0050 | <0.010 ^{DLM} | <0.010 ^{DLM} | <0.0050 | <0.010 ^{DLM} |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | 14.4 | 35.6 | <1.0 | <0.50 | 57.0 |
| | Total Organic Carbon (mg/L) | 6.80 | 6.18 | 6.84 | <0.50 | 32.4 |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | NA | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0038 | <0.010 ^{DLA} | <0.0050 ^{DLA} | <0.0010 | 0.0502 |
| | Antimony (Sb)-Dissolved (mg/L) | 0.341 | 0.547 | 0.00453 | <0.00010 | 0.00029 |
| | Arsenic (As)-Dissolved (mg/L) | 3.76 | 0.838 | 22.8 | <0.00010 | 0.0688 |
| | Barium (Ba)-Dissolved (mg/L) | 0.00712 | 0.0474 | 0.00785 | <0.000050 | 0.348 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00020 ^{DLA} | <0.0010 ^{DLA} | <0.00050 ^{DLA} | <0.00010 | <0.00010 |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.0010 ^{DLA} | <0.0050 ^{DLA} | <0.0025 ^{DLA} | <0.00050 | <0.00050 |
| | Boron (B)-Dissolved (mg/L) | 0.297 | 0.10 | 0.059 | <0.010 | <0.010 |
| | Cadmium (Cd)-Dissolved (mg/L) | 0.000021 | 0.00123 | 0.000497 | <0.000010 | <0.000010 |
| | Calcium (Ca)-Dissolved (mg/L) | 487 | 509 | 477 | <0.050 | 102 |
| | Chromium (Cr)-Dissolved (mg/L) | <0.00020 ^{DLA} | <0.0010 ^{DLA} | <0.00050 ^{DLA} | <0.00010 | 0.00072 |
| | Cobalt (Co)-Dissolved (mg/L) | 0.00104 | 0.0064 | 0.0118 | <0.00010 | 0.00058 |
| | Copper (Cu)-Dissolved (mg/L) | <0.00040 ^{DLA} | <0.0020 ^{DLA} | <0.0010 ^{DLA} | <0.00020 | <0.00020 |
| | Iron (Fe)-Dissolved (mg/L) | <0.010 | 0.254 | 48.7 | <0.010 | 90.7 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID Description Sampled Date Sampled Time Client ID | L1531123-31 Water 08-OCT-14 13:54 DUP4 | L1531123-32 Water 09-OCT-14 12:00 MW09-22 | L1531123-33 Water 09-OCT-14 12:00 FB3 | L1531123-34 Water 09-OCT-14 10:45 W14103083BH02 | L1531123-35 Water 09-OCT-14 10:56 W14103083BH04 | |
|-----------------------------------|---|--|---|---|---|---|---------|
| Grouping | Analyte | | | | | | |
| WATER | | | | | | | |
| Physical Tests | Conductivity (uS/cm) | 2490 | | <2.0 | 1060 | 903 | |
| | Hardness (as CaCO3) (mg/L) | 1550 | 900 | <0.50 | 643 | 517 | |
| | pH (pH) | 7.63 | | 5.39 | 8.01 | 8.29 | |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 181 | | <2.0 | 210 | 218 | |
| | Ammonia, Total (as N) (mg/L) | 1.06 | | <0.0050 | 0.0174 | | |
| | Chloride (Cl) (mg/L) | <10 ^{DLA} | | <0.50 | <5.0 ^{DLA} | <2.5 ^{DLA} | |
| | Fluoride (F) (mg/L) | <0.40 ^{DLA} | | <0.020 | <0.20 ^{DLA} | 0.17 | |
| | Nitrate (as N) (mg/L) | <0.10 ^{DLA} | | <0.0050 | 0.500 ^{DLA} | 3.07 ^{DLA} | |
| | Nitrite (as N) (mg/L) | <0.020 ^{DLA} | | <0.0010 | <0.010 ^{DLA} | <0.0050 ^{DLA} | |
| | Total Kjeldahl Nitrogen (mg/L) | 1.50 | | <0.050 | 0.236 | | |
| | Sulfate (SO4) (mg/L) | 1540 | | <0.50 | 421 | 291 | |
| | Sulphide as S (mg/L) | <0.020 | | <0.020 | <0.020 | | |
| | Anion Sum (meq/L) | 35.6 | | <0.10 | 13.0 | 10.6 | |
| | Cation Sum (meq/L) | 34.5 | | <0.10 | 13.3 | 10.9 | |
| | Cation - Anion Balance (%) | -1.6 | | 0.0 | 1.3 | 1.2 | |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.050 ^{DLA} | | <0.0050 | | <0.0050 |
| | | Cyanide, Total (mg/L) | 0.133 ^{DLA} | | <0.0050 | | <0.0050 |
| Thiocyanate (SCN) (mg/L) | | <0.50 | | <0.50 | <0.50 | | |
| Cyanide, Free (mg/L) | | <0.050 ^{DLA} | | <0.0050 | | <0.0050 | |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | 36.9 | | <0.50 | | | |
| | Total Organic Carbon (mg/L) | 6.19 | | <0.50 | 5.36 | | |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD | |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD | |
| | Aluminum (Al)-Dissolved (mg/L) | <0.010 ^{DLA} | 0.0250 | <0.0010 | 0.0018 | 0.0021 | |
| | Antimony (Sb)-Dissolved (mg/L) | 0.527 | 0.00027 | <0.00010 | 0.00024 | 0.00024 | |
| | Arsenic (As)-Dissolved (mg/L) | 0.730 | 0.00486 | <0.00010 | 0.00312 | 0.00357 | |
| | Barium (Ba)-Dissolved (mg/L) | 0.0423 | 0.0437 | <0.000050 | 0.114 | 0.264 | |
| | Beryllium (Be)-Dissolved (mg/L) | <0.0010 ^{DLA} | <0.00010 | <0.00010 | <0.00010 | <0.00010 | |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.0050 ^{DLA} | <0.00050 | <0.00050 | <0.00050 | <0.00050 | |
| | Boron (B)-Dissolved (mg/L) | <0.10 ^{DLA} | 0.074 | <0.010 | 0.017 | 0.016 | |
| | Cadmium (Cd)-Dissolved (mg/L) | 0.00114 | 0.000040 | <0.000010 | 0.000296 | 0.00424 | |
| | Calcium (Ca)-Dissolved (mg/L) | 504 | 294 | <0.050 | 164 | 140 | |
| | Chromium (Cr)-Dissolved (mg/L) | <0.0010 ^{DLA} | 0.00047 | <0.00010 | 0.00019 | 0.00011 | |
| | Cobalt (Co)-Dissolved (mg/L) | 0.0060 | 0.0171 | <0.00010 | <0.00010 | <0.00010 | |
| | Copper (Cu)-Dissolved (mg/L) | <0.0020 ^{DLA} | 0.00115 | 0.00027 ^{RRV} | 0.00272 | 0.00324 | |
| | Iron (Fe)-Dissolved (mg/L) | 0.247 | 28.5 | <0.010 | <0.010 | <0.010 | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-36 Water 09-OCT-14 15:56 MW09-08 | L1531123-37 Water 09-OCT-14 13:58 MP09-04 | L1531123-38 Water 09-OCT-14 11:33 MP09-05 | L1531123-39 Water 09-OCT-14 12:00 DUP 5 | L1531123-40 Water 09-OCT-14 10:42 MW09-21 | |
|---|---|---|---|---|---|-------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | 198 | 835 | 2510 | 2510 | 1670 |
| | Hardness (as CaCO3) (mg/L) | 101 | 494 | 1460 | 1480 | 1010 |
| | pH (pH) | 7.63 | 7.99 | 7.12 | 7.04 | 7.29 |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 112 | 179 | 224 | 223 | 336 |
| | Ammonia, Total (as N) (mg/L) | 2.05 | <0.0050 | 12.1 | 11.2 | 10.7 |
| | Chloride (Cl) (mg/L) | <0.50 | <0.50 | <10 ^{DLA} | <10 ^{DLA} | <5.0 ^{DLA} |
| | Fluoride (F) (mg/L) | 0.217 | 0.038 | <0.40 ^{DLA} | <0.40 ^{DLA} | <0.20 ^{DLA} |
| | Nitrate (as N) (mg/L) | 0.0536 ^{HTD} | 0.170 | 0.35 | 0.24 | 0.498 |
| | Nitrite (as N) (mg/L) | <0.0010 ^{HTD} | <0.0010 | 0.027 | 0.035 | 0.019 |
| | Total Kjeldahl Nitrogen (mg/L) | 2.75 | 0.156 | 14.7 | 15.3 | 16.0 |
| | Sulfate (SO4) (mg/L) | 234 | 292 | 1840 | 1420 | 688 |
| | Sulphide as S (mg/L) | 0.065 | <0.020 | 0.021 | <0.020 | 0.044 |
| | Anion Sum (meq/L) | 7.13 | 9.67 | 42.8 | 34.0 | 21.1 |
| | Cation Sum (meq/L) | 4.22 | 10.2 | 38.2 | 38.6 | 24.8 |
| | Cation - Anion Balance (%) | -25.6 | 2.7 | -5.8 | 6.3 | 8.1 |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.010 ^{DLM} | <0.0050 | <0.010 ^{DLM} | 0.029 ^{DLM} |
| Cyanide, Total (mg/L) | | <0.010 ^{DLM} | <0.0050 | 0.244 ^{DLM} | 0.307 ^{DLM} | 0.0140 |
| Thiocyanate (SCN) (mg/L) | | <0.50 | <0.50 | 2.50 | 2.44 | <0.50 |
| Cyanide, Free (mg/L) | | <0.010 ^{DLM} | <0.0050 | <0.010 ^{DLM} | 0.023 | 0.0062 |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | 22.7 | 35.7 | 43.3 | 45.2 | 62.4 |
| | Total Organic Carbon (mg/L) | 21.9 | 10.7 | 28.9 | 15.0 | 30.0 |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0901 | 0.0017 | 0.0354 | 0.0336 | 0.0965 |
| | Antimony (Sb)-Dissolved (mg/L) | 0.00028 | 0.00170 | 0.00048 | 0.00042 | 0.00024 |
| | Arsenic (As)-Dissolved (mg/L) | 0.136 | 0.00105 | 0.0963 | 0.0956 | 0.117 |
| | Barium (Ba)-Dissolved (mg/L) | 0.101 | 0.0287 | 0.122 | 0.123 | 0.0892 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00010 | <0.00010 | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00020 ^{DLA} |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.00050 | <0.00050 | <0.0010 ^{DLA} | <0.0010 ^{DLA} | <0.0010 ^{DLA} |
| | Boron (B)-Dissolved (mg/L) | <0.010 | 0.012 | 0.085 | 0.077 | 0.037 |
| | Cadmium (Cd)-Dissolved (mg/L) | <0.000010 | 0.000040 | 0.000295 | 0.000263 | 0.000095 |
| | Calcium (Ca)-Dissolved (mg/L) | 30.5 | 119 | 471 | 477 | 318 |
| | Chromium (Cr)-Dissolved (mg/L) | 0.00117 | 0.00032 | 0.00094 | 0.00084 | 0.00158 |
| | Cobalt (Co)-Dissolved (mg/L) | 0.00080 | 0.00015 | 0.0160 | 0.0159 | 0.0128 |
| | Copper (Cu)-Dissolved (mg/L) | <0.00020 | 0.00261 | 0.00115 | 0.00112 | 0.00061 |
| | Iron (Fe)-Dissolved (mg/L) | 34.4 | <0.010 | 69.1 | 71.6 | 50.8 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-41 Water 09-OCT-14 09:15 MW09-24 | L1531123-42 Water 09-OCT-14 15:10 MP09-12 | L1531123-43 Water 09-OCT-14 15:50 MP09-11 | L1531123-44 Water 08-OCT-14 10:02 MP09-02 | L1531123-45 Water 08-OCT-14 MW09-06 | |
|---|---|---|---|---|--|-------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Physical Tests | Conductivity (uS/cm) | 968 | 749 | 1100 | 315 | 1760 |
| | Hardness (as CaCO3) (mg/L) | 574 | 434 | 626 | 160 | 1080 |
| | pH (pH) | 8.00 | 8.21 | 8.09 | 7.90 | 7.98 |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | 201 | 421 | 695 | 53.2 | 127 |
| | Ammonia, Total (as N) (mg/L) | 0.0080 | 4.49 | 6.49 | 0.0091 | 1.22 |
| | Chloride (Cl) (mg/L) | <5.0 ^{DLA} | <0.50 | <5.0 ^{DLA} | <0.50 | <5.0 ^{DLA} |
| | Fluoride (F) (mg/L) | <0.20 ^{DLA} | 0.328 | 0.36 | 0.048 | 0.26 |
| | Nitrate (as N) (mg/L) | 2.94 | 0.0149 | <0.050 ^{DLA} | 0.0636 | <0.050 ^{DLA} |
| | Nitrite (as N) (mg/L) | 0.016 | 0.0207 | <0.010 ^{DLA} | <0.0010 | <0.010 ^{DLA} |
| | Total Kjeldahl Nitrogen (mg/L) | 0.228 ^{TKNI} | 6.07 | 12.3 | 0.477 | 1.65 |
| | Sulfate (SO4) (mg/L) | 355 | 27.8 | 64.2 | 101 | 989 |
| | Sulphide as S (mg/L) | <0.020 | <0.020 | 0.029 | <0.020 | <0.020 |
| | Anion Sum (meq/L) | 11.6 | 9.00 | 15.2 | 3.18 | 23.1 |
| | Cation Sum (meq/L) | 11.9 | 9.62 | 15.4 | 3.40 | 23.5 |
| | Cation - Anion Balance (%) | 1.1 | 3.3 | 0.7 | 3.3 | 0.7 |
| | Cyanides | Cyanide, Weak Acid Diss (mg/L) | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Cyanide, Total (mg/L) | | 0.0235 | 0.0093 | 0.0117 | <0.0050 | <0.0050 |
| Thiocyanate (SCN) (mg/L) | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Cyanide, Free (mg/L) | | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | 42.3 | 89.4 | 134 | 10.4 | 20.7 |
| | Total Organic Carbon (mg/L) | 9.02 | 19.4 | 53.9 | 9.21 | 6.68 |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0017 | 0.0026 | 0.0068 | 0.0132 | <0.0020 ^{DLA} |
| | Antimony (Sb)-Dissolved (mg/L) | 0.00021 | 0.0417 | 0.0434 | 0.00051 | 0.254 |
| | Arsenic (As)-Dissolved (mg/L) | 0.00157 | 5.66 | 18.8 | 0.00305 | 0.106 |
| | Barium (Ba)-Dissolved (mg/L) | 0.0538 | 0.0434 | 0.119 | 0.0308 | 0.00685 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00010 | <0.00010 | <0.00050 ^{DLA} | <0.00010 | <0.00020 ^{DLA} |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.00050 | <0.00050 | <0.0025 ^{DLA} | <0.00050 | <0.0010 ^{DLA} |
| | Boron (B)-Dissolved (mg/L) | 0.013 | 0.064 | <0.050 ^{DLA} | <0.010 | 0.158 |
| | Cadmium (Cd)-Dissolved (mg/L) | 0.000055 | 0.000352 | <0.000050 ^{DLA} | 0.000027 | 0.00621 |
| | Calcium (Ca)-Dissolved (mg/L) | 152 | 102 | 145 | 47.5 | 342 |
| | Chromium (Cr)-Dissolved (mg/L) | 0.00030 | 0.00037 | 0.00130 | <0.00010 | <0.00020 ^{DLA} |
| | Cobalt (Co)-Dissolved (mg/L) | 0.00042 | 0.00165 | 0.00210 | 0.00015 | 0.00123 |
| | Copper (Cu)-Dissolved (mg/L) | 0.00852 | 0.00093 | <0.0010 ^{DLA} | 0.00092 | 0.00644 |
| | Iron (Fe)-Dissolved (mg/L) | <0.010 | 4.19 | 18.4 | 0.289 | <0.010 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-46 Water 09-OCT-14 12:00 MW09-22 D-METALS TEST | L1531123-47 Water 09-OCT-14 12:00 DUP 5 D-METALS TEST | L1531123-48 Water 09-OCT-14 11:33 MP09-05 D-METALS TEST | L1531123-49 Water 09-OCT-14 15:50 MP09-11 D-METALS TEST | |
|---|---|---|---|---|--------------------------|
| Grouping | Analyte | | | | |
| WATER | | | | | |
| Physical Tests | Conductivity (uS/cm) | | | | |
| | Hardness (as CaCO3) (mg/L) | 915 | 1470 | 1480 | 656 |
| | pH (pH) | | | | |
| Anions and Nutrients | Alkalinity, Total (as CaCO3) (mg/L) | | | | |
| | Ammonia, Total (as N) (mg/L) | | | | |
| | Chloride (Cl) (mg/L) | | | | |
| | Fluoride (F) (mg/L) | | | | |
| | Nitrate (as N) (mg/L) | | | | |
| | Nitrite (as N) (mg/L) | | | | |
| | Total Kjeldahl Nitrogen (mg/L) | | | | |
| | Sulfate (SO4) (mg/L) | | | | |
| | Sulphide as S (mg/L) | | | | |
| | Anion Sum (meq/L) | | | | |
| | Cation Sum (meq/L) | | | | |
| | Cation - Anion Balance (%) | | | | |
| Cyanides | Cyanide, Weak Acid Diss (mg/L) | | | | |
| | Cyanide, Total (mg/L) | | | | |
| | Thiocyanate (SCN) (mg/L) | | | | |
| | Cyanide, Free (mg/L) | | | | |
| Organic / Inorganic Carbon | Total Inorganic Carbon (mg/L) | | | | |
| | Total Organic Carbon (mg/L) | | | | |
| Dissolved Metals | Dissolved Mercury Filtration Location | FIELD | FIELD | FIELD | FIELD |
| | Dissolved Metals Filtration Location | FIELD | FIELD | FIELD | FIELD |
| | Aluminum (Al)-Dissolved (mg/L) | 0.0229 | 0.0318 | 0.0307 | 0.0071 |
| | Antimony (Sb)-Dissolved (mg/L) | 0.00026 | 0.00047 | 0.00045 | 0.0421 |
| | Arsenic (As)-Dissolved (mg/L) | 0.00433 | 0.101 | 0.0838 | 19.3 |
| | Barium (Ba)-Dissolved (mg/L) | 0.0433 | 0.123 | 0.121 | 0.119 |
| | Beryllium (Be)-Dissolved (mg/L) | <0.00010 | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00050 ^{DLA} |
| | Bismuth (Bi)-Dissolved (mg/L) | <0.00050 | <0.0010 ^{DLA} | <0.0010 ^{DLA} | <0.0025 ^{DLA} |
| | Boron (B)-Dissolved (mg/L) | 0.078 | 0.085 | 0.087 | <0.050 ^{DLA} |
| | Cadmium (Cd)-Dissolved (mg/L) | 0.000037 | 0.000254 | 0.000265 | <0.000050 ^{DLA} |
| | Calcium (Ca)-Dissolved (mg/L) | 300 | 474 | 477 | 151 |
| | Chromium (Cr)-Dissolved (mg/L) | 0.00042 | 0.00086 | 0.00078 | 0.00127 |
| | Cobalt (Co)-Dissolved (mg/L) | 0.0168 | 0.0159 | 0.0156 | 0.00207 |
| | Copper (Cu)-Dissolved (mg/L) | 0.00097 | 0.00111 | 0.00106 | <0.0010 ^{DLA} |
| | Iron (Fe)-Dissolved (mg/L) | 28.2 | 69.5 | 68.2 | 19.6 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-1 Water 07-OCT-14 15:03 CH-P-13-05/50 | L1531123-2 Water 07-OCT-14 13:00 GLL07-03 | L1531123-3 Water 07-OCT-14 14:42 GCI-HA-03A | L1531123-4 Water 07-OCT-14 18:30 GSI-DC-03B | L1531123-5 Water 07-OCT-14 17:36 MW09-18 | |
|---|--|---|---|---|--|--------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | 0.00636 | 0.000191 | 0.000479 | 0.000165 | <0.00010 ^{DLA} |
| | Lithium (Li)-Dissolved (mg/L) | 0.0409 | 0.0111 | 0.00063 | 0.00684 | 0.0217 |
| | Magnesium (Mg)-Dissolved (mg/L) | 177 | 25.1 | 48.3 | 59.3 | 234 |
| | Manganese (Mn)-Dissolved (mg/L) | 36.7 | 2.26 | 4.71 | 1.95 | 0.597 |
| | Mercury (Hg)-Dissolved (mg/L) | 0.000015 | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Molybdenum (Mo)-Dissolved (mg/L) | 0.00032 | 0.000089 | 0.00329 | 0.00236 | <0.00010 ^{DLA} |
| | Nickel (Ni)-Dissolved (mg/L) | 0.0141 | 0.00831 | 0.0257 | 0.00892 | <0.0010 ^{DLA} |
| | Phosphorus (P)-Dissolved (mg/L) | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| | Potassium (K)-Dissolved (mg/L) | 4.86 | 1.62 | 2.16 | 2.94 | 7.09 |
| | Selenium (Se)-Dissolved (mg/L) | <0.00050 ^{DLA} | <0.00010 | <0.00010 | <0.00010 | 0.00042 |
| | Silicon (Si)-Dissolved (mg/L) | 7.18 | 2.44 | 7.31 | 7.03 | 5.08 |
| | Silver (Ag)-Dissolved (mg/L) | <0.000050 ^{DLA} | <0.000010 | <0.000010 | <0.000010 | <0.000020 ^{DLA} |
| | Sodium (Na)-Dissolved (mg/L) | 8.67 | 5.38 | 5.00 | 5.20 | 12.1 |
| | Strontium (Sr)-Dissolved (mg/L) | 0.560 | 0.161 | 0.407 | 0.439 | 1.07 |
| | Sulfur (S)-Dissolved (mg/L) | 614 | 135 | 116 | 140 | 448 |
| | Thallium (Tl)-Dissolved (mg/L) | 0.000530 | 0.000138 | <0.000010 | 0.000024 | 0.000293 |
| | Tin (Sn)-Dissolved (mg/L) | <0.00050 ^{DLA} | <0.00010 | 0.00046 | 0.00058 | <0.00020 ^{DLA} |
| | Titanium (Ti)-Dissolved (mg/L) | <0.050 ^{DLA} | <0.010 | <0.010 | <0.010 | <0.020 ^{DLA} |
| | Uranium (U)-Dissolved (mg/L) | 0.000634 | 0.000037 | 0.000117 | 0.00233 | 0.00849 |
| | Vanadium (V)-Dissolved (mg/L) | <0.0050 ^{DLA} | <0.0010 | <0.0010 | <0.0010 | <0.0020 ^{DLA} |
| | Zinc (Zn)-Dissolved (mg/L) | 32.7 | 5.87 | 0.0282 | 0.136 | 0.0029 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID Description Sampled Date Sampled Time Client ID | L1531123-6 Water 07-OCT-14 16:30 MW09-17 | L1531123-7 Water 07-OCT-14 15:10 GSI-HA-04A | L1531123-8 Water 07-OCT-14 14:54 GSI-HA-05A | L1531123-9 Water 07-OCT-14 14:20 GSI-HA-01A | L1531123-10 Water 07-OCT-14 14:33 GSI-HA-02A |
|-------------------------|---|--|---|---|---|--|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | <0.00010 ^{DLA} | 0.000449 | 0.000166 | 0.000312 | 0.000186 |
| | Lithium (Li)-Dissolved (mg/L) | 0.0216 | 0.00116 | 0.00177 | 0.00769 | 0.00209 |
| | Magnesium (Mg)-Dissolved (mg/L) | 247 | 9.12 | 41.1 | 55.1 | 33.0 |
| | Manganese (Mn)-Dissolved (mg/L) | <0.00010 ^{DLA} | 0.477 | 3.17 | 0.120 | 4.48 |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Molybdenum (Mo)-Dissolved (mg/L) | <0.00010 ^{DLA} | 0.00114 | 0.000290 | 0.00154 | 0.00235 |
| | Nickel (Ni)-Dissolved (mg/L) | <0.0010 ^{DLA} | 0.00466 | 0.00846 | 0.00488 | 0.0142 |
| | Phosphorus (P)-Dissolved (mg/L) | <0.050 | <0.050 | 0.088 | <0.050 | <0.050 |
| | Potassium (K)-Dissolved (mg/L) | 6.96 | 0.24 | 1.85 | 3.69 | 3.25 |
| | Selenium (Se)-Dissolved (mg/L) | 0.00024 | 0.00010 | <0.00010 | <0.00010 | <0.00010 |
| | Silicon (Si)-Dissolved (mg/L) | 5.05 | 9.04 | 6.59 | 5.96 | 4.24 |
| | Silver (Ag)-Dissolved (mg/L) | <0.000020 ^{DLA} | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Sodium (Na)-Dissolved (mg/L) | 12.4 | 2.12 | 5.40 | 4.85 | 3.33 |
| | Strontium (Sr)-Dissolved (mg/L) | 1.08 | 0.0959 | 0.307 | 0.370 | 0.272 |
| | Sulfur (S)-Dissolved (mg/L) | 457 | 23.3 | 112 | 114 | 88.1 |
| | Thallium (Tl)-Dissolved (mg/L) | 0.000107 | <0.000010 | 0.000011 | 0.000014 | 0.000014 |
| | Tin (Sn)-Dissolved (mg/L) | <0.00020 ^{DLA} | 0.00016 | 0.00025 | 0.00012 | 0.00017 |
| | Titanium (Ti)-Dissolved (mg/L) | <0.020 ^{DLA} | <0.010 | <0.010 | <0.010 | <0.010 |
| | Uranium (U)-Dissolved (mg/L) | 0.00833 | 0.000043 | 0.000039 | 0.00135 | 0.000360 |
| | Vanadium (V)-Dissolved (mg/L) | <0.0020 ^{DLA} | <0.0010 | <0.0010 | <0.0010 | <0.0010 |
| | Zinc (Zn)-Dissolved (mg/L) | <0.0020 ^{DLA} | 0.0115 | 0.0154 | 0.0042 | 0.0271 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID Description Sampled Date Sampled Time Client ID | L1531123-11 Water 07-OCT-14 14:08 GSI-DC-02B | L1531123-12 Water 07-OCT-14 12:27 MW09-16 | L1531123-13 Water 07-OCT-14 11:00 MW09-19 | L1531123-14 Water 07-OCT-14 11:00 DUP2 | L1531123-15 Water 07-OCT-14 15:03 DUP-1 |
|-------------------------|---|--|---|---|--|---|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | 0.000223 | 0.00451 | <0.00010 ^{DLA} | <0.00010 ^{DLA} | 0.00623 |
| | Lithium (Li)-Dissolved (mg/L) | 0.00167 | 0.0115 | 0.0098 | 0.0103 | 0.0421 |
| | Magnesium (Mg)-Dissolved (mg/L) | 46.6 | 137 | 150 | 148 | 175 |
| | Manganese (Mn)-Dissolved (mg/L) | 2.89 | 0.0297 | 5.90 | 5.76 | 36.0 |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000010 | <0.000010 | 0.000017 |
| | Molybdenum (Mo)-Dissolved (mg/L) | 0.000958 | 0.00011 | <0.00010 ^{DLA} | <0.00010 ^{DLA} | 0.00032 |
| | Nickel (Ni)-Dissolved (mg/L) | 0.0111 | 0.0046 | 0.0017 | 0.0017 | 0.0126 |
| | Phosphorus (P)-Dissolved (mg/L) | <0.050 | <0.050 | 0.248 | 0.249 | <0.050 |
| | Potassium (K)-Dissolved (mg/L) | 3.09 | 5.81 | 8.06 | 8.14 | 4.85 |
| | Selenium (Se)-Dissolved (mg/L) | <0.00010 | 0.00023 | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00050 ^{DLA} |
| | Silicon (Si)-Dissolved (mg/L) | 6.97 | 4.77 | 9.41 | 9.49 | 7.10 |
| | Silver (Ag)-Dissolved (mg/L) | <0.000010 | <0.000020 ^{DLA} | <0.000020 ^{DLA} | <0.000020 ^{DLA} | <0.000050 ^{DLA} |
| | Sodium (Na)-Dissolved (mg/L) | 4.94 | 8.59 | 14.5 | 14.6 | 8.20 |
| | Strontium (Sr)-Dissolved (mg/L) | 0.305 | 0.688 | 0.982 | 1.08 | 0.525 |
| | Sulfur (S)-Dissolved (mg/L) | 103 | 334 | 312 | 313 | 607 |
| | Thallium (Tl)-Dissolved (mg/L) | <0.000010 | 0.000258 | <0.000020 ^{DLA} | <0.000020 ^{DLA} | 0.000543 |
| | Tin (Sn)-Dissolved (mg/L) | 0.00025 | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00050 ^{DLA} |
| | Titanium (Ti)-Dissolved (mg/L) | <0.010 | <0.020 ^{DLA} | <0.020 ^{DLA} | <0.020 ^{DLA} | <0.050 ^{DLA} |
| | Uranium (U)-Dissolved (mg/L) | 0.000397 | 0.00411 | 0.000436 | 0.000434 | 0.000649 |
| | Vanadium (V)-Dissolved (mg/L) | <0.0010 | <0.0020 ^{DLA} | <0.0020 ^{DLA} | <0.0020 ^{DLA} | <0.0050 ^{DLA} |
| | Zinc (Zn)-Dissolved (mg/L) | 0.0173 | 4.40 | <0.0020 ^{DLA} | <0.0020 ^{DLA} | 31.4 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | | Sample ID | L1531123-16 | L1531123-17 | L1531123-18 | L1531123-19 | L1531123-20 |
|-------------------------|----------------------------------|--------------|-------------|-------------|---------------|-------------|-------------|
| | | Description | Water | Water | Water | Water | Water |
| | | Sampled Date | 07-OCT-14 | 07-OCT-14 | 08-OCT-14 | 08-OCT-14 | 08-OCT-14 |
| | | Sampled Time | 12:27 | 13:10 | 18:37 | 15:07 | 13:40 |
| | | Client ID | FB1 | GSI-DC-01B | W14103083BH03 | GIS-PC-03B | GIS-PC-04B |
| Grouping | Analyte | | | | | | |
| WATER | | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | <0.000050 | 0.00209 | <0.000050 | 0.000779 | 0.000335 | |
| | Lithium (Li)-Dissolved (mg/L) | <0.00050 | 0.00066 | 0.00081 | 0.00632 | 0.00088 | |
| | Magnesium (Mg)-Dissolved (mg/L) | <0.10 | 23.4 | 31.8 | 97.7 | 18.5 | |
| | Manganese (Mn)-Dissolved (mg/L) | <0.000050 | 0.0239 | 2.07 | 2.16 | 2.85 | |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 | |
| | Molybdenum (Mo)-Dissolved (mg/L) | <0.000050 | 0.00818 | 0.000095 | 0.0251 | 0.00964 | |
| | Nickel (Ni)-Dissolved (mg/L) | <0.00050 | 0.0260 | <0.00050 | 0.116 | 0.0646 | |
| | Phosphorus (P)-Dissolved (mg/L) | <0.050 | <0.050 | 0.232 | <0.050 | <0.050 | |
| | Potassium (K)-Dissolved (mg/L) | <0.10 | 4.40 | 1.58 | 5.11 | 2.02 | |
| | Selenium (Se)-Dissolved (mg/L) | <0.00010 | <0.00010 | 0.00018 | 0.00011 | <0.00010 | |
| | Silicon (Si)-Dissolved (mg/L) | <0.050 | 3.76 | 10.9 | 8.94 | 7.48 | |
| | Silver (Ag)-Dissolved (mg/L) | <0.000010 | 0.000011 | <0.000010 | <0.000010 | <0.000010 | |
| | Sodium (Na)-Dissolved (mg/L) | <0.050 | 4.16 | 9.54 | 20.7 | 5.77 | |
| | Strontium (Sr)-Dissolved (mg/L) | <0.00020 | 0.240 | 0.397 | 0.794 | 0.423 | |
| | Sulfur (S)-Dissolved (mg/L) | <0.50 | 65.9 | 53.0 | 120 | 30.1 | |
| | Thallium (Tl)-Dissolved (mg/L) | <0.000010 | 0.000019 | <0.000010 | <0.000010 | <0.000010 | |
| | Tin (Sn)-Dissolved (mg/L) | <0.00010 | 0.00399 | <0.00010 | 0.00011 | <0.00010 | |
| | Titanium (Ti)-Dissolved (mg/L) | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | |
| | Uranium (U)-Dissolved (mg/L) | <0.000010 | 0.000415 | 0.000124 | 0.00241 | 0.000143 | |
| | Vanadium (V)-Dissolved (mg/L) | <0.0010 | <0.0010 | 0.0021 | <0.0010 | <0.0010 | |
| | Zinc (Zn)-Dissolved (mg/L) | <0.0010 | 0.0305 | 0.0021 | 0.0509 | 0.0069 | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| | Sample ID Description Sampled Date Sampled Time Client ID | L1531123-21 Water 08-OCT-14 14:07 GIS-PC-05B | L1531123-22 Water 08-OCT-14 11:05 GLL07-02 | L1531123-23 Water 08-OCT-14 17:02 MW09-05 | L1531123-24 Water 08-OCT-14 15:22 MW09-22 | L1531123-25 Water 08-OCT-14 18:35 MW09-23 |
|-------------------------|---|--|--|---|---|---|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | 0.000302 | 0.000339 | 0.00309 | | DLA <0.00025 |
| | Lithium (Li)-Dissolved (mg/L) | <0.00050 | 0.00150 | 0.00269 | | DLA <0.0025 |
| | Magnesium (Mg)-Dissolved (mg/L) | 13.3 | 11.9 | 45.1 | | 65.4 |
| | Manganese (Mn)-Dissolved (mg/L) | 0.00416 | 0.00251 | 6.24 | | 21.7 |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | 0.000013 | <0.000010 | <0.000010 |
| | Molybdenum (Mo)-Dissolved (mg/L) | 0.000452 | 0.000085 | 0.000646 | | 0.00223 |
| | Nickel (Ni)-Dissolved (mg/L) | 0.00161 | 0.00062 | 0.0103 | | DLA <0.0025 |
| | Phosphorus (P)-Dissolved (mg/L) | <0.050 | <0.050 | <0.050 | | <0.050 |
| | Potassium (K)-Dissolved (mg/L) | 0.70 | 0.60 | 15.5 | | 6.40 |
| | Selenium (Se)-Dissolved (mg/L) | <0.00010 | <0.00010 | 0.00011 | | DLA <0.00050 |
| | Silicon (Si)-Dissolved (mg/L) | 6.07 | 6.51 | 7.10 | | 6.01 |
| | Silver (Ag)-Dissolved (mg/L) | <0.000010 | 0.000013 | 0.000045 | | DLA <0.000050 |
| | Sodium (Na)-Dissolved (mg/L) | 3.91 | 3.71 | 37.2 | | 23.7 |
| | Strontium (Sr)-Dissolved (mg/L) | 0.331 | 0.274 | 0.592 | | 0.519 |
| | Sulfur (S)-Dissolved (mg/L) | 31.8 | 30.7 | 302 | | 197 |
| | Thallium (Tl)-Dissolved (mg/L) | 0.000010 | <0.000010 | 0.000208 | | DLA <0.000050 |
| | Tin (Sn)-Dissolved (mg/L) | <0.00010 | <0.00010 | 0.00032 | | DLA <0.00050 |
| | Titanium (Ti)-Dissolved (mg/L) | <0.010 | <0.010 | <0.010 | | DLA <0.050 |
| | Uranium (U)-Dissolved (mg/L) | 0.000157 | 0.000222 | 0.000455 | | 0.00377 |
| | Vanadium (V)-Dissolved (mg/L) | 0.0014 | <0.0010 | <0.0010 | | DLA <0.0050 |
| | Zinc (Zn)-Dissolved (mg/L) | 0.0068 | 0.0174 | 0.732 | | 0.0182 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-26 Water 08-OCT-14 12:38 MW09-04 | L1531123-27 Water 08-OCT-14 13:54 MW09-03 | L1531123-28 Water 08-OCT-14 10:15 MW09-02 | L1531123-29 Water 08-OCT-14 13:54 FB2 | L1531123-30 Water 08-OCT-14 18:37 DUP-3 | |
|---|---|---|---|---|---|-----------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | 0.00028 | <0.00050 ^{DLA} | <0.00025 ^{DLA} | <0.000050 | <0.000050 |
| | Lithium (Li)-Dissolved (mg/L) | 0.0055 | <0.0050 ^{DLA} | 0.0294 | <0.00050 | 0.00116 |
| | Magnesium (Mg)-Dissolved (mg/L) | 110 | 74.6 | 92.2 | <0.10 | 31.9 |
| | Manganese (Mn)-Dissolved (mg/L) | 4.64 | 55.2 | 34.7 | <0.000050 | 2.02 |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Molybdenum (Mo)-Dissolved (mg/L) | 0.00739 | 0.00336 | 0.00560 | <0.000050 | 0.000126 |
| | Nickel (Ni)-Dissolved (mg/L) | <0.0010 ^{DLA} | <0.0050 ^{DLA} | 0.0033 | <0.00050 | <0.00050 |
| | Phosphorus (P)-Dissolved (mg/L) | 0.081 | 0.057 | <0.050 | <0.050 | 0.224 |
| | Potassium (K)-Dissolved (mg/L) | 40.8 | 16.6 | 83.7 | <0.10 | 1.46 |
| | Selenium (Se)-Dissolved (mg/L) | <0.00020 ^{DLA} | <0.0010 ^{DLA} | <0.00050 ^{DLA} | <0.00010 | 0.00020 |
| | Silicon (Si)-Dissolved (mg/L) | 12.0 | 16.0 | 6.87 | <0.050 | 10.6 |
| | Silver (Ag)-Dissolved (mg/L) | <0.000020 ^{DLA} | <0.00010 ^{DLA} | <0.000050 ^{DLA} | <0.000010 | <0.000010 |
| | Sodium (Na)-Dissolved (mg/L) | 52.3 | 24.1 | 86.9 | <0.050 | 9.11 |
| | Strontium (Sr)-Dissolved (mg/L) | 1.37 | 1.47 | 1.07 | <0.00020 | 0.377 |
| | Sulfur (S)-Dissolved (mg/L) | 561 | 520 | 657 | <0.50 | 53.9 |
| | Thallium (Tl)-Dissolved (mg/L) | 0.000109 | <0.00010 ^{DLA} | 0.000256 ^{DLA} | <0.000010 | <0.000010 |
| | Tin (Sn)-Dissolved (mg/L) | 0.00064 | <0.0010 ^{DLA} | <0.00050 ^{DLA} | <0.00010 | <0.00010 |
| | Titanium (Ti)-Dissolved (mg/L) | <0.020 ^{DLA} | <0.10 ^{DLA} | <0.050 ^{DLA} | <0.010 | <0.010 |
| | Uranium (U)-Dissolved (mg/L) | 0.000238 | 0.00285 | 0.000528 | <0.000010 | 0.000130 |
| | Vanadium (V)-Dissolved (mg/L) | <0.0020 ^{DLA} | <0.010 ^{DLA} | <0.0050 ^{DLA} | <0.0010 | 0.0020 |
| | Zinc (Zn)-Dissolved (mg/L) | 0.132 | <0.010 ^{DLA} | 0.333 | <0.0010 | 0.0019 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-31 Water 08-OCT-14 13:54 DUP4 | L1531123-32 Water 09-OCT-14 12:00 MW09-22 | L1531123-33 Water 09-OCT-14 12:00 FB3 | L1531123-34 Water 09-OCT-14 10:45 W14103083BH02 | L1531123-35 Water 09-OCT-14 10:56 W14103083BH04 |
|---|--|---|---|---|---|
| Grouping | Analyte | | | | |
| WATER | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) <small>DLA</small> <0.00050 | <0.000050 | <0.000050 | <0.000050 | <0.000050 |
| | Lithium (Li)-Dissolved (mg/L) <small>DLA</small> <0.0050 | 0.00067 | <0.00050 | 0.00123 | 0.00123 |
| | Magnesium (Mg)-Dissolved (mg/L) 71.8 | 40.3 | <0.10 | 56.7 | 40.9 |
| | Manganese (Mn)-Dissolved (mg/L) 53.2 | 6.55 | <0.000050 | 0.0118 | 0.00274 |
| | Mercury (Hg)-Dissolved (mg/L) <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Molybdenum (Mo)-Dissolved (mg/L) 0.00246 | 0.000093 | <0.000050 | 0.00128 | 0.00109 |
| | Nickel (Ni)-Dissolved (mg/L) <small>DLA</small> <0.0050 | 0.00211 | <0.00050 | 0.00061 | 0.00056 |
| | Phosphorus (P)-Dissolved (mg/L) 0.070 | <0.050 | <0.050 | <0.050 | <0.050 |
| | Potassium (K)-Dissolved (mg/L) 16.3 | 4.56 | <0.10 | 3.18 | 2.63 |
| | Selenium (Se)-Dissolved (mg/L) <small>DLA</small> <0.0010 | 0.00032 | <0.00010 | 0.00060 | 0.00293 |
| | Silicon (Si)-Dissolved (mg/L) 15.8 | 4.49 | <0.050 | 5.37 | 4.95 |
| | Silver (Ag)-Dissolved (mg/L) <small>DLA</small> <0.00010 | 0.000021 | <0.000010 | <0.000010 | <0.000010 |
| | Sodium (Na)-Dissolved (mg/L) 24.4 | 71.3 | <0.050 | 8.79 | 11.7 |
| | Strontium (Sr)-Dissolved (mg/L) 1.52 | 0.752 | <0.00020 | 0.669 | 0.612 |
| | Sulfur (S)-Dissolved (mg/L) 508 | 284 | <0.50 | 144 | 101 |
| | Thallium (Tl)-Dissolved (mg/L) <small>DLA</small> <0.00010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Tin (Sn)-Dissolved (mg/L) <small>DLA</small> <0.0010 | 0.00016 | <0.00010 | 0.00042 | 0.00062 |
| | Titanium (Ti)-Dissolved (mg/L) <small>DLA</small> <0.10 | <0.010 | <0.010 | <0.010 | <0.010 |
| | Uranium (U)-Dissolved (mg/L) 0.00266 | 0.000847 | <0.000010 | 0.00544 | 0.00755 |
| | Vanadium (V)-Dissolved (mg/L) <small>DLA</small> <0.010 | <0.0010 | <0.0010 | <0.0010 | <0.0010 |
| | Zinc (Zn)-Dissolved (mg/L) <small>DLA</small> <0.010 | 0.0015 | <0.0010 | 0.0014 | 0.0083 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-36 Water 09-OCT-14 15:56 MW09-08 | L1531123-37 Water 09-OCT-14 13:58 MP09-04 | L1531123-38 Water 09-OCT-14 11:33 MP09-05 | L1531123-39 Water 09-OCT-14 12:00 DUP 5 | L1531123-40 Water 09-OCT-14 10:42 MW09-21 | |
|---|---|---|---|---|---|--------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | 0.000144 | <0.000050 | <0.00010 ^{DLA} | <0.00010 ^{DLA} | <0.00010 ^{DLA} |
| | Lithium (Li)-Dissolved (mg/L) | <0.00050 | 0.00069 | <0.0010 ^{DLA} | <0.0010 ^{DLA} | <0.0010 ^{DLA} |
| | Magnesium (Mg)-Dissolved (mg/L) | 6.12 | 48.1 | 68.9 | 70.8 | 52.8 |
| | Manganese (Mn)-Dissolved (mg/L) | 2.58 | 0.000472 | 15.3 | 15.1 | 5.21 |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Molybdenum (Mo)-Dissolved (mg/L) | <0.000050 | 0.000219 | 0.00055 | 0.00051 | 0.00039 |
| | Nickel (Ni)-Dissolved (mg/L) | <0.00050 | <0.00050 | 0.0052 | 0.0050 | 0.0018 |
| | Phosphorus (P)-Dissolved (mg/L) | 0.116 | <0.050 | <0.050 | <0.050 | <0.050 |
| | Potassium (K)-Dissolved (mg/L) | 1.32 | 1.63 | 8.75 | 8.89 | 11.3 |
| | Selenium (Se)-Dissolved (mg/L) | 0.00010 | 0.00019 | <0.00020 ^{DLA} | 0.00020 | 0.00030 |
| | Silicon (Si)-Dissolved (mg/L) | 10.1 | 5.38 | 6.63 | 6.82 | 5.53 |
| | Silver (Ag)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000020 ^{DLA} | <0.000020 ^{DLA} | <0.000020 ^{DLA} |
| | Sodium (Na)-Dissolved (mg/L) | 1.30 | 6.52 | 83.8 | 81.0 | 13.6 |
| | Strontium (Sr)-Dissolved (mg/L) | 0.131 | 0.366 | 1.25 | 1.15 | 0.838 |
| | Sulfur (S)-Dissolved (mg/L) | 0.68 | 103 | 474 | 488 | 231 |
| | Thallium (Tl)-Dissolved (mg/L) | <0.000010 | <0.000010 | 0.000021 ^{DLA} | <0.000020 ^{DLA} | <0.000020 ^{DLA} |
| | Tin (Sn)-Dissolved (mg/L) | <0.00010 | <0.00010 | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00020 ^{DLA} |
| | Titanium (Ti)-Dissolved (mg/L) | <0.010 | <0.010 | <0.020 ^{DLA} | <0.020 ^{DLA} | <0.020 ^{DLA} |
| | Uranium (U)-Dissolved (mg/L) | 0.000088 | 0.00192 | 0.00161 | 0.00142 | 0.000670 |
| | Vanadium (V)-Dissolved (mg/L) | 0.0040 | <0.0010 | 0.0030 | 0.0030 | 0.0061 |
| Zinc (Zn)-Dissolved (mg/L) | 0.0012 | 0.0018 | 0.0147 | 0.0144 | 0.0035 | |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-41 Water 09-OCT-14 09:15 MW09-24 | L1531123-42 Water 09-OCT-14 15:10 MP09-12 | L1531123-43 Water 09-OCT-14 15:50 MP09-11 | L1531123-44 Water 08-OCT-14 10:02 MP09-02 | L1531123-45 Water 08-OCT-14 MW09-06 | |
|---|---|---|---|---|--|--------------------------|
| Grouping | Analyte | | | | | |
| WATER | | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | <0.000050 | 0.00651 | 0.00322 | 0.000064 | 0.00034 |
| | Lithium (Li)-Dissolved (mg/L) | 0.00091 | 0.00252 | 0.0031 | 0.00080 | 0.0096 |
| | Magnesium (Mg)-Dissolved (mg/L) | 47.0 | 43.5 | 64.1 | 10.1 | 55.4 |
| | Manganese (Mn)-Dissolved (mg/L) | 0.000705 | 2.66 | 4.84 | 0.0195 | 5.64 |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000010 | <0.000010 | 0.000011 |
| | Molybdenum (Mo)-Dissolved (mg/L) | 0.000323 | 0.00294 | 0.00864 | 0.000060 | 0.00425 |
| | Nickel (Ni)-Dissolved (mg/L) | <0.00050 | 0.00534 | 0.0096 | <0.00050 | 0.0016 |
| | Phosphorus (P)-Dissolved (mg/L) | <0.050 | 0.127 | 0.180 | <0.050 | <0.050 |
| | Potassium (K)-Dissolved (mg/L) | 1.47 | 5.34 | 10.3 | 0.50 | 20.5 |
| | Selenium (Se)-Dissolved (mg/L) | 0.00038 | 0.00011 | <0.00050 ^{DLA} | <0.00010 | <0.00020 ^{DLA} |
| | Silicon (Si)-Dissolved (mg/L) | 5.24 | 10.5 | 13.6 | 7.21 | 7.46 |
| | Silver (Ag)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000050 ^{DLA} | <0.000010 | <0.000020 ^{DLA} |
| | Sodium (Na)-Dissolved (mg/L) | 8.41 | 3.84 | 24.1 | 3.76 | 23.7 |
| | Strontium (Sr)-Dissolved (mg/L) | 0.443 | 0.591 | 0.723 | 0.343 | 0.706 |
| | Sulfur (S)-Dissolved (mg/L) | 118 | 10.1 | 24.7 | 35.3 | 342 |
| | Thallium (Tl)-Dissolved (mg/L) | <0.000010 | 0.000109 | <0.000050 ^{DLA} | <0.000010 | 0.000358 ^{DLA} |
| | Tin (Sn)-Dissolved (mg/L) | 0.00016 | <0.00010 | <0.00050 ^{DLA} | <0.00010 | <0.00020 ^{DLA} |
| | Titanium (Ti)-Dissolved (mg/L) | <0.010 | <0.010 | <0.050 ^{DLA} | <0.010 | <0.020 ^{DLA} |
| | Uranium (U)-Dissolved (mg/L) | 0.00436 | 0.000644 | 0.00104 | 0.000080 | 0.00128 |
| | Vanadium (V)-Dissolved (mg/L) | <0.0010 | <0.0010 | <0.0050 ^{DLA} | <0.0010 | <0.0020 ^{DLA} |
| | Zinc (Zn)-Dissolved (mg/L) | 0.0015 | 0.0367 | 0.0358 | 0.0029 | 0.104 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample ID Description Sampled Date Sampled Time Client ID | L1531123-46 Water 09-OCT-14 12:00 MW09-22 D-METALS TEST | L1531123-47 Water 09-OCT-14 12:00 DUP 5 D-METALS TEST | L1531123-48 Water 09-OCT-14 11:33 MP09-05 D-METALS TEST | L1531123-49 Water 09-OCT-14 15:50 MP09-11 D-METALS TEST | |
|---|---|---|---|---|--------------------------|
| Grouping | Analyte | | | | |
| WATER | | | | | |
| Dissolved Metals | Lead (Pb)-Dissolved (mg/L) | <0.000050 | <0.00010 ^{DLA} | <0.00010 ^{DLA} | 0.00226 |
| | Lithium (Li)-Dissolved (mg/L) | 0.00062 | <0.0010 ^{DLA} | <0.0010 ^{DLA} | 0.0034 |
| | Magnesium (Mg)-Dissolved (mg/L) | 40.6 | 69.3 | 70.8 | 67.5 |
| | Manganese (Mn)-Dissolved (mg/L) | 6.35 | 15.0 | 14.8 | 4.96 |
| | Mercury (Hg)-Dissolved (mg/L) | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| | Molybdenum (Mo)-Dissolved (mg/L) | 0.000098 | 0.00061 | 0.00057 | 0.00913 |
| | Nickel (Ni)-Dissolved (mg/L) | 0.00207 | 0.0051 | 0.0049 | 0.0097 |
| | Phosphorus (P)-Dissolved (mg/L) | <0.050 | <0.050 | <0.050 | 0.128 |
| | Potassium (K)-Dissolved (mg/L) | 4.59 | 8.85 | 8.94 | 11.2 |
| | Selenium (Se)-Dissolved (mg/L) | 0.00033 | 0.00026 | <0.00020 ^{DLA} | <0.00050 ^{DLA} |
| | Silicon (Si)-Dissolved (mg/L) | 4.47 | 6.71 | 6.71 | 13.5 |
| | Silver (Ag)-Dissolved (mg/L) | 0.000023 | <0.000020 ^{DLA} | <0.000020 ^{DLA} | <0.000050 ^{DLA} |
| | Sodium (Na)-Dissolved (mg/L) | 70.5 | 82.3 | 80.2 | 25.1 |
| | Strontium (Sr)-Dissolved (mg/L) | 0.785 | 1.26 | 1.25 | 0.844 |
| | Sulfur (S)-Dissolved (mg/L) | 286 | 480 | 495 | 29.1 |
| | Thallium (Tl)-Dissolved (mg/L) | <0.000010 | 0.000024 ^{DLA} | <0.000020 ^{DLA} | <0.000050 ^{DLA} |
| | Tin (Sn)-Dissolved (mg/L) | 0.00015 | <0.00020 ^{DLA} | <0.00020 ^{DLA} | <0.00050 ^{DLA} |
| | Titanium (Ti)-Dissolved (mg/L) | <0.010 | <0.020 ^{DLA} | <0.020 ^{DLA} | <0.050 ^{DLA} |
| | Uranium (U)-Dissolved (mg/L) | 0.000848 | 0.00164 | 0.00161 | 0.00110 |
| | Vanadium (V)-Dissolved (mg/L) | <0.0010 | 0.0031 | 0.0025 | <0.0050 ^{DLA} |
| | Zinc (Zn)-Dissolved (mg/L) | 0.0016 | 0.0156 | 0.0142 | 0.0347 |

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Individual Samples Listed:

| Sample Number | Client Sample ID | Qualifier | Description |
|---------------|-----------------------|-----------|---|
| L1531123-10 | GSI-HA-02A | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-11 | GSI-DC-02B | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-17 | GSI-DC-01B | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-19 | GIS-PC-03B | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-20 | GIS-PC-04B | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-21 | GIS-PC-05B | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-3 | GCI-HA-03A | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-31 | DUP4 | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-32 | MW09-22 | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-35 | W14103083BH04 | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-4 | GSI-DC-03B | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-46 | MW09-22 D-METALS TEST | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-47 | DUP 5 D-METALS TEST | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-48 | MP09-05 D-METALS TEST | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-49 | MP09-11 D-METALS TEST | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-7 | GSI-HA-04A | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-8 | GSI-HA-05A | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |
| L1531123-9 | GSI-HA-01A | WSMD | Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low. |

QC Samples with Qualifiers & Comments:

| QC Type Description | Parameter | Qualifier | Applies to Sample Number(s) |
|---------------------|--------------------------|-----------|---|
| Duplicate | Aluminum (Al)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Antimony (Sb)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Arsenic (As)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Beryllium (Be)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Bismuth (Bi)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Boron (B)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Chromium (Cr)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Lead (Pb)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, |

Reference Information

| | Parameter | Qualifier | Applies to Sample Number(s) |
|--------------|--------------------------|-----------|---|
| | | | -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Nickel (Ni)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Selenium (Se)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Silver (Ag)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Thallium (Tl)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Tin (Sn)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Titanium (Ti)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Vanadium (V)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Zinc (Zn)-Dissolved | DLA | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Duplicate | Cadmium (Cd)-Dissolved | DLM | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Sulfate (SO4) | MS-B | L1531123-1, -11, -12, -13, -14, -15, -16, -18, -2, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -33, -34, -35, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9 |
| Matrix Spike | Sulfate (SO4) | MS-B | L1531123-1, -11, -12, -13, -14, -15, -16, -18, -2, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -33, -34, -35, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9 |
| Matrix Spike | Sulfate (SO4) | MS-B | L1531123-1, -11, -12, -13, -14, -15, -16, -18, -2, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -33, -34, -35, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9 |
| Matrix Spike | Sulfate (SO4) | MS-B | L1531123-10 |
| Matrix Spike | Total Organic Carbon | MS-B | L1531123-1, -12, -13, -14, -15, -16, -18, -2, -22, -24, -26, -27, -28, -29, -30, -31, -33, -34, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6 |
| Matrix Spike | Total Organic Carbon | MS-B | L1531123-1, -12, -13, -14, -15, -16, -18, -2, -22, -24, -26, -27, -28, -29, -30, -31, -33, -34, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6 |
| Matrix Spike | Sodium (Na)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Strontium (Sr)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Calcium (Ca)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |

Reference Information

| | Parameter | Qualifier | Applies to Sample Number(s) |
|--------------|--------------------------|-----------|---|
| Matrix Spike | Silicon (Si)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Sulfur (S)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Total Organic Carbon | MS-B | L1531123-23, -25 |
| Matrix Spike | Barium (Ba)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Sodium (Na)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Strontium (Sr)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Uranium (U)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Calcium (Ca)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Silicon (Si)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Sulfur (S)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Total Inorganic Carbon | MS-B | L1531123-28 |
| Matrix Spike | Total Kjeldahl Nitrogen | MS-B | L1531123-24, -26, -27, -28, -29, -31, -33, -34, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45 |
| Matrix Spike | Total Kjeldahl Nitrogen | MS-B | L1531123-24, -26, -27, -28, -29, -31, -33, -34, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45 |
| Matrix Spike | Barium (Ba)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Manganese (Mn)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |
| Matrix Spike | Strontium (Sr)-Dissolved | MS-B | L1531123-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -6, -7, -8, -9 |

Qualifiers for Individual Parameters Listed:

| Qualifier | Description |
|-----------|---|
| CNP | Cyanide test sample appears to have been preserved, but pH was <10 at time of testing. Results may be biased low, particularly for Free CN species. |
| DLA | Detection Limit adjusted for required dilution |
| DLM | Detection Limit Adjusted due to sample matrix effects. |
| HTD | Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time. |
| MS-B | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample. |
| RRV | Reported Result Verified By Repeat Analysis |

Reference Information

TKNI TKN result is likely biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Test Method References:

| ALS Test Code | Matrix | Test Description | Method Reference** |
|----------------------------|--------|--|--------------------------------------|
| ALK-COL-VA | Water | Alkalinity by Colourimetric (Automated) | EPA 310.2 |
| | | This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method. | |
| ANIONS-CL-IC-WR | Water | Chloride by Ion Chromatography | EPA 300.1 |
| | | This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003. | |
| ANIONS-F-IC-WR | Water | Fluoride by Ion Chromatography | EPA 300.1 |
| | | This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003. | |
| ANIONS-NO2-IC-WR | Water | Nitrite Nitrogen by Ion Chromatography | EPA 300.1 |
| | | This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003. Nitrate is detected by UV absorbance. | |
| ANIONS-NO3-IC-WR | Water | Nitrate Nitrogen by Ion Chromatography | EPA 300.1 |
| | | This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003. Nitrate is detected by UV absorbance. | |
| ANIONS-SO4-IC-WR | Water | Sulphate by Ion Chromatography | EPA 300.1 |
| | | This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003. | |
| CARBONS-TIC-VA | Water | Total inorganic carbon by CO2 purge | APHA 5310 TOTAL ORGANIC CARBON (TOC) |
| | | This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". | |
| CARBONS-TOC-VA | Water | Total organic carbon by combustion | APHA 5310 TOTAL ORGANIC CARBON (TOC) |
| | | This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". | |
| CN-FREE-CFA-VA | Water | Free Cyanide in water by CFA | ASTM 7237 |
| | | This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis. | |
| CN-SCN-VA | Water | Thiocyanate by Colour | APHA 4500-CN CYANIDE |
| | | This analysis is carried out using procedures adapted from APHA Method 4500-CN- M "Thiocyanate" Thiocyanate is determined by the ferric nitrate colourimetric method. | |
| CN-T-CFA-VA | Water | Total Cyanide in water by CFA | ISO 14403:2002 |
| | | This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero. | |
| CN-WAD-CFA-VA | Water | Weak Acid Diss. Cyanide in water by CFA | APHA 4500-CN CYANIDE |
| | | This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis. | |
| EC-PCT-VA | Water | Conductivity (Automated) | APHA 2510 Auto. Conduc. |
| | | This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode. | |
| HARDNESS-CALC-VA | Water | Hardness | APHA 2340B |
| | | Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation. | |
| HG-DIS-LOW-CVAFS-VA | Water | Dissolved Mercury in Water by CVAFS(Low) | EPA SW-846 3005A & EPA 245.7 |
| | | This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental | |

Reference Information

analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

$$\text{Ion Balance (\%)} = \frac{[\text{Cation Sum} - \text{Anion Sum}]}{[\text{Cation Sum} + \text{Anion Sum}]}$$

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030 B&E / EPA SW-846 6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S2-T-COL-VA Water Total Sulphide by Colorimetric APHA 4500-S2 Sulphide

This analysis is carried out using procedures adapted from APHA Method 4500-S2 "Sulphide". Sulphide is determined using the methylene blue colourimetric method.

TKN-F-VA Water TKN in Water by Fluorescence APHA 4500-NORG D.

This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

| Laboratory Definition Code | Laboratory Location |
|----------------------------|---|
| WR | ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA |
| VA | ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA |

Chain of Custody Numbers:

Reference Information

1 2 3 4

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

