



3440 South 700 West
Salt Lake City, UT 84119

Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Jim Harris
Utah Division of Water Quality
PO Box 144870
SLC, UT 84114
TEL: (801) 538-6329

RE: Gold King Mine Spill / 01255.1.016.03

Dear Jim Harris:

Lab Set ID: 1509529

American West Analytical Laboratories received sample(s) on 9/25/2015 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by: _____
Laboratory Director or designee



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-001
Client Sample ID: GK01-SW-01
Collection Date: 9/22/2015 956h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

TOTAL METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-------|-----------------|-----------------|-------------|------------|-----------------|-------------------|------|
| Aluminum | 7429-90-5 | mg/L | 9/28/2015 1926h | 9/29/2015 1153h | E200.7 | 0.0237 | 0.100 | 2.53 | |
| Antimony | 7440-36-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.0000366 | 0.00200 | 0.000820 | J |
| Arsenic | 7440-38-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.0000920 | 0.00200 | 0.00232 | |
| Barium | 7440-39-3 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.000538 | 0.00200 | 0.140 | B |
| Beryllium | 7440-41-7 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.0000288 | 0.00200 | 0.000216 | J |
| Cadmium | 7440-43-9 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.000193 | 0.000500 | < 0.000500 | U |
| Calcium | 7440-70-2 | mg/L | 9/28/2015 1926h | 9/29/2015 1130h | E200.7 | 0.401 | 10.0 | 76.6 | |
| Chromium | 7440-47-3 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.00154 | 0.00200 | 0.00192 | J |
| Cobalt | 7440-48-4 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.0000434 | 0.00400 | 0.00131 | J |
| Copper | 7440-50-8 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.000692 | 0.00200 | 0.00430 | |
| Iron | 7439-89-6 | mg/L | 9/28/2015 1926h | 9/29/2015 1153h | E200.7 | 0.0767 | 0.100 | 2.47 | |
| Lead | 7439-92-1 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.000264 | 0.00200 | 0.00299 | |
| Magnesium | 7439-95-4 | mg/L | 9/28/2015 1926h | 9/29/2015 1153h | E200.7 | 0.0294 | 1.00 | 19.3 | |
| Manganese | 7439-96-5 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.00153 | 0.00200 | 0.0905 | |
| Mercury | 7439-97-6 | mg/L | 9/27/2015 1200h | 9/28/2015 827h | E245.1 | 0.00000892 | 0.000150 | < 0.000150 | U |
| Molybdenum | 7439-98-7 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.000206 | 0.00200 | 0.00178 | J |
| Nickel | 7440-02-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.000754 | 0.00200 | 0.00264 | |
| Potassium | 7440-09-7 | mg/L | 9/28/2015 1926h | 9/29/2015 1153h | E200.7 | 0.247 | 1.00 | 3.65 | |
| Selenium | 7782-49-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.0000634 | 0.00200 | 0.000837 | J |
| Silver | 7440-22-4 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.0000244 | 0.00200 | 0.0000704 | J |
| Sodium | 7440-23-5 | mg/L | 9/28/2015 1926h | 9/29/2015 1153h | E200.7 | 0.0330 | 1.00 | 44.0 | |
| Thallium | 7440-28-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.0000242 | 0.00200 | 0.0000794 | J |
| Vanadium | 7440-62-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.000438 | 0.00440 | 0.00668 | B |
| Zinc | 7440-66-6 | mg/L | 9/28/2015 1927h | 10/6/2015 2103h | E200.8 | 0.00476 | 0.00500 | 0.0141 | |

B - This analyte was also detected in the method blank below the PQL.

J - Estimated value between the MDL and the reporting limit (PQL).

U - This flag indicates the compound was analyzed for but not detected above the MDL.



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-002
Client Sample ID: GK02-SW-02
Collection Date: 9/22/2015 1355h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

TOTAL METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-------|-----------------|-----------------|-------------|------------|-----------------|-------------------|--------------|
| Aluminum | 7429-90-5 | mg/L | 9/28/2015 1926h | 9/29/2015 1155h | E200.7 | 0.0237 | 0.100 | 1.72 | ¹ |
| Antimony | 7440-36-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.0000366 | 0.00200 | 0.000612 | J |
| Arsenic | 7440-38-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.0000920 | 0.00200 | 0.00178 | J |
| Barium | 7440-39-3 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.000538 | 0.00200 | 0.114 | B |
| Beryllium | 7440-41-7 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.0000288 | 0.00200 | 0.000151 | J |
| Cadmium | 7440-43-9 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.000193 | 0.000500 | < 0.000500 | U |
| Calcium | 7440-70-2 | mg/L | 9/28/2015 1926h | 9/29/2015 1133h | E200.7 | 0.401 | 10.0 | 71.2 | |
| Chromium | 7440-47-3 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.00154 | 0.00200 | < 0.00200 | U |
| Cobalt | 7440-48-4 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.0000434 | 0.00400 | 0.000921 | J |
| Copper | 7440-50-8 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.000692 | 0.00200 | 0.00332 | |
| Iron | 7439-89-6 | mg/L | 9/28/2015 1926h | 9/29/2015 1155h | E200.7 | 0.0767 | 0.100 | 1.68 | ¹ |
| Lead | 7439-92-1 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.000264 | 0.00200 | 0.00215 | |
| Magnesium | 7439-95-4 | mg/L | 9/28/2015 1926h | 9/29/2015 1155h | E200.7 | 0.0294 | 1.00 | 17.2 | |
| Manganese | 7439-96-5 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.00153 | 0.00200 | 0.0678 | |
| Mercury | 7439-97-6 | mg/L | 9/27/2015 1200h | 9/28/2015 833h | E245.1 | 0.00000892 | 0.000150 | < 0.000150 | U |
| Molybdenum | 7439-98-7 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.000206 | 0.00200 | 0.00159 | J |
| Nickel | 7440-02-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.000754 | 0.00200 | 0.00187 | J |
| Potassium | 7440-09-7 | mg/L | 9/28/2015 1926h | 9/29/2015 1155h | E200.7 | 0.247 | 1.00 | 3.21 | |
| Selenium | 7782-49-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.0000634 | 0.00200 | 0.000583 | J |
| Silver | 7440-22-4 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.0000244 | 0.00200 | 0.0000294 | J |
| Sodium | 7440-23-5 | mg/L | 9/28/2015 1926h | 9/29/2015 1133h | E200.7 | 0.330 | 10.0 | 40.1 | |
| Thallium | 7440-28-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.0000242 | 0.00200 | 0.0000364 | J |
| Vanadium | 7440-62-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.000438 | 0.00440 | 0.00515 | B |
| Zinc | 7440-66-6 | mg/L | 9/28/2015 1927h | 10/6/2015 2106h | E200.8 | 0.00476 | 0.00500 | 0.0105 | |

¹ - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

B - This analyte was also detected in the method blank below the PQL.

J - Estimated value between the MDL and the reporting limit (PQL).

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Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-003
Client Sample ID: GK03-SW-03
Collection Date: 9/22/2015 1730h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

TOTAL METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-------|-----------------|-----------------|-------------|------------|-----------------|-------------------|------|
| Aluminum | 7429-90-5 | mg/L | 9/28/2015 1926h | 9/29/2015 1202h | E200.7 | 0.0237 | 0.100 | 1.30 | |
| Antimony | 7440-36-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.0000366 | 0.00200 | 0.000577 | J |
| Arsenic | 7440-38-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.0000920 | 0.00200 | 0.00173 | J |
| Barium | 7440-39-3 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.000538 | 0.00200 | 0.105 | B |
| Beryllium | 7440-41-7 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.0000288 | 0.00200 | 0.000130 | J |
| Cadmium | 7440-43-9 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.000193 | 0.000500 | < 0.000500 | U |
| Calcium | 7440-70-2 | mg/L | 9/28/2015 1926h | 9/29/2015 1144h | E200.7 | 0.401 | 10.0 | 70.1 | |
| Chromium | 7440-47-3 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.00154 | 0.00200 | < 0.00200 | U |
| Cobalt | 7440-48-4 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.0000434 | 0.00400 | 0.000725 | J |
| Copper | 7440-50-8 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.000692 | 0.00200 | 0.00291 | |
| Iron | 7439-89-6 | mg/L | 9/28/2015 1926h | 9/29/2015 1202h | E200.7 | 0.0767 | 0.100 | 1.29 | |
| Lead | 7439-92-1 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.000264 | 0.00200 | 0.00177 | J |
| Magnesium | 7439-95-4 | mg/L | 9/28/2015 1926h | 9/29/2015 1202h | E200.7 | 0.0294 | 1.00 | 17.5 | |
| Manganese | 7439-96-5 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.00153 | 0.00200 | 0.0622 | |
| Mercury | 7439-97-6 | mg/L | 9/27/2015 1200h | 9/28/2015 835h | E245.1 | 0.00000892 | 0.000150 | < 0.000150 | U |
| Molybdenum | 7439-98-7 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.000206 | 0.00200 | 0.00191 | J |
| Nickel | 7440-02-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.000754 | 0.00200 | 0.00164 | J |
| Potassium | 7440-09-7 | mg/L | 9/28/2015 1926h | 9/29/2015 1202h | E200.7 | 0.247 | 1.00 | 3.15 | |
| Selenium | 7782-49-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.0000634 | 0.00200 | 0.000655 | J |
| Silver | 7440-22-4 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.0000244 | 0.00200 | 0.0000768 | J |
| Sodium | 7440-23-5 | mg/L | 9/28/2015 1926h | 9/29/2015 1202h | E200.7 | 0.0330 | 1.00 | 40.3 | |
| Thallium | 7440-28-0 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.0000242 | 0.00200 | 0.0000868 | J |
| Vanadium | 7440-62-2 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.000438 | 0.00440 | 0.00422 | JB |
| Zinc | 7440-66-6 | mg/L | 9/28/2015 1927h | 10/6/2015 2122h | E200.8 | 0.00476 | 0.00500 | 0.00932 | |

B - This analyte was also detected in the method blank below the PQL.

J - Estimated value between the MDL and the reporting limit (PQL).

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-004
Client Sample ID: GK01-SO-01
Collection Date: 9/22/2015 956h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

TOTAL METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-----------|------------------|------------------|-------------|---------|-----------------|-------------------|----------------|
| Aluminum | 7429-90-5 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1008h | SW6010C | 20.0 | 116 | 6,350 | B ² |
| Antimony | 7440-36-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.338 | 3.71 | < 3.71 | U |
| Arsenic | 7440-38-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.0752 | 2.32 | 2.26 | J |
| Barium | 7440-39-3 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 2.51 | 4.18 | 411 | ² |
| Beryllium | 7440-41-7 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.00552 | 1.86 | 0.272 | J |
| Cadmium | 7440-43-9 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.0156 | 0.789 | 0.112 | J |
| Calcium | 7440-70-2 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1635h | SW6010C | 27.7 | 1,170 | 8,150 | B ² |
| Chromium | 7440-47-3 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 2.26 | 9.29 | 5.61 | J |
| Cobalt | 7440-48-4 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.141 | 1.25 | 2.15 | |
| Copper | 7440-50-8 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 1.43 | 14.4 | 3.11 | J |
| Iron | 7439-89-6 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1008h | SW6010C | 13.2 | 58.0 | 5,900 | B ² |
| Lead | 7439-92-1 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 2.78 | 6.04 | 4.30 | J |
| Magnesium | 7439-95-4 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1101h | SW6010C | 12.2 | 116 | 1,970 | B |
| Manganese | 7439-96-5 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.622 | 3.71 | 169 | ² |
| Mercury | 7439-97-6 | mg/kg-dry | 9/30/2015 1955h | 10/1/2015 856h | SW7471B | 0.00142 | 0.0422 | 0.00190 | JB |
| Molybdenum | 7439-98-7 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.331 | 18.6 | < 18.6 | U |
| Nickel | 7440-02-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 2.03 | 18.6 | 3.44 | J |
| Potassium | 7440-09-7 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1635h | SW6010C | 237 | 1,170 | 1,300 | |
| Selenium | 7782-49-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.506 | 7.89 | < 7.89 | U |
| Silver | 7440-22-4 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.0208 | 1.39 | < 1.39 | U |
| Sodium | 7440-23-5 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1736h | SW6010C | 9.00 | 117 | 193 | B |
| Thallium | 7440-28-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.00469 | 3.71 | 0.0741 | J |
| Vanadium | 7440-62-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 0.478 | 9.29 | 14.6 | |
| Zinc | 7440-66-6 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1133h | SW6020A | 4.69 | 46.4 | 18.4 | J |

² - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

B - This analyte was also detected in the method blank below the PQL.

J - Estimated value between the MDL and the reporting limit (PQL).

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-005
Client Sample ID: GK02-SO-02
Collection Date: 9/22/2015 1359h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

TOTAL METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-----------|------------------|------------------|-------------|---------|-----------------|-------------------|------|
| Aluminum | 7429-90-5 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1109h | SW6010C | 2.05 | 11.9 | 4,250 | B |
| Antimony | 7440-36-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.346 | 3.81 | < 3.81 | U |
| Arsenic | 7440-38-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.0771 | 2.38 | 2.49 | |
| Barium | 7440-39-3 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1240h | SW6020A | 25.7 | 42.8 | 518 | |
| Beryllium | 7440-41-7 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.00566 | 1.90 | 0.226 | J |
| Cadmium | 7440-43-9 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.0160 | 0.809 | 0.0796 | J |
| Calcium | 7440-70-2 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1646h | SW6010C | 30.5 | 1,290 | 4,610 | B |
| Chromium | 7440-47-3 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 2.31 | 9.51 | 2.32 | J |
| Cobalt | 7440-48-4 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.145 | 1.28 | 2.18 | |
| Copper | 7440-50-8 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 1.46 | 14.7 | 2.53 | J |
| Iron | 7439-89-6 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1109h | SW6010C | 1.36 | 5.95 | 7,750 | B |
| Lead | 7439-92-1 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 2.85 | 6.18 | 4.24 | J |
| Magnesium | 7439-95-4 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1109h | SW6010C | 12.5 | 119 | 1,980 | B |
| Manganese | 7439-96-5 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.637 | 3.81 | 198 | |
| Mercury | 7439-97-6 | mg/kg-dry | 9/30/2015 1955h | 10/1/2015 901h | SW7471B | 0.00145 | 0.0430 | 0.00301 | JB |
| Molybdenum | 7439-98-7 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.339 | 19.0 | < 19.0 | U |
| Nickel | 7440-02-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 2.08 | 19.0 | 2.15 | J |
| Potassium | 7440-09-7 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1743h | SW6010C | 26.1 | 129 | 535 | |
| Selenium | 7782-49-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.518 | 8.09 | < 8.09 | U |
| Silver | 7440-22-4 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.0213 | 1.43 | < 1.43 | U |
| Sodium | 7440-23-5 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1743h | SW6010C | 9.93 | 129 | 126 | JB |
| Thallium | 7440-28-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.00480 | 3.81 | 0.0636 | J |
| Vanadium | 7440-62-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 0.490 | 9.51 | 7.43 | J |
| Zinc | 7440-66-6 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1151h | SW6020A | 4.80 | 47.6 | 20.6 | J |

B - This analyte was also detected in the method blank below the PQL.

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3440 South 700 West
Salt Lake City, UT 84119

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e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Jim Harris
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-006
Client Sample ID: GK03-SO-03
Collection Date: 9/22/2015 1755h
Received Date: 9/25/2015 1400h

Analytical Results

TOTAL METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-----------|------------------|------------------|-------------|---------|-----------------|-------------------|------|
| Aluminum | 7429-90-5 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1030h | SW6010C | 20.2 | 118 | 10,400 | B |
| Antimony | 7440-36-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.342 | 3.77 | < 3.77 | U |
| Arsenic | 7440-38-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.0763 | 2.35 | 3.04 | |
| Barium | 7440-39-3 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 2.55 | 4.24 | 161 | |
| Beryllium | 7440-41-7 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.00560 | 1.88 | 0.437 | J |
| Cadmium | 7440-43-9 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.0159 | 0.800 | 0.173 | J |
| Calcium | 7440-70-2 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1649h | SW6010C | 27.1 | 1,140 | 20,300 | B |
| Chromium | 7440-47-3 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 2.29 | 9.41 | 8.65 | J |
| Cobalt | 7440-48-4 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.143 | 1.27 | 3.26 | |
| Copper | 7440-50-8 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 1.44 | 14.6 | 5.34 | J |
| Iron | 7439-89-6 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1030h | SW6010C | 13.4 | 58.8 | 8,070 | B |
| Lead | 7439-92-1 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 2.82 | 6.12 | 7.09 | |
| Magnesium | 7439-95-4 | mg/kg-dry | 10/2/2015 1636h | 10/8/2015 1112h | SW6010C | 12.4 | 118 | 2,820 | B |
| Manganese | 7439-96-5 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.631 | 3.77 | 223 | |
| Mercury | 7439-97-6 | mg/kg-dry | 9/30/2015 1955h | 10/1/2015 906h | SW7471B | 0.00145 | 0.0429 | 0.00600 | JB |
| Molybdenum | 7439-98-7 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.335 | 18.8 | 0.355 | J |
| Nickel | 7440-02-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 2.06 | 18.8 | 5.07 | J |
| Potassium | 7440-09-7 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1649h | SW6010C | 232 | 1,140 | 5,080 | |
| Selenium | 7782-49-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.513 | 8.00 | < 8.00 | U |
| Silver | 7440-22-4 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.0211 | 1.41 | 0.0286 | J |
| Sodium | 7440-23-5 | mg/kg-dry | 10/13/2015 1500h | 10/13/2015 1745h | SW6010C | 8.82 | 114 | 517 | B |
| Thallium | 7440-28-0 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.00475 | 3.77 | 0.126 | J |
| Vanadium | 7440-62-2 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 0.485 | 9.41 | 19.7 | |
| Zinc | 7440-66-6 | mg/kg-dry | 10/2/2015 1636h | 10/5/2015 1155h | SW6020A | 4.75 | 47.1 | 25.6 | J |

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Salt Lake City, UT 84119

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-001
Client Sample ID: GK01-SW-01
Collection Date: 9/22/2015 956h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

DISSOLVED METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-------|-----------------|-----------------|-------------|------------|-----------------|-------------------|------|
| Aluminum | 7429-90-5 | mg/L | 9/28/2015 1711h | 9/29/2015 1051h | E200.7 | 0.0237 | 0.100 | < 0.100 | U |
| Antimony | 7440-36-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.0000366 | 0.00200 | 0.000354 | JB |
| Arsenic | 7440-38-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.0000920 | 0.00200 | 0.00139 | JB |
| Barium | 7440-39-3 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.000538 | 0.00200 | 0.0901 | |
| Beryllium | 7440-41-7 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.0000288 | 0.00200 | < 0.00200 | U |
| Cadmium | 7440-43-9 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.000193 | 0.000500 | < 0.000500 | U |
| Calcium | 7440-70-2 | mg/L | 9/28/2015 1711h | 9/29/2015 1029h | E200.7 | 0.401 | 10.0 | 74.2 | |
| Chromium | 7440-47-3 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.00154 | 0.00200 | < 0.00200 | U |
| Cobalt | 7440-48-4 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.0000434 | 0.00400 | 0.0000835 | J |
| Copper | 7440-50-8 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.000692 | 0.00200 | 0.00208 | |
| Iron | 7439-89-6 | mg/L | 9/28/2015 1711h | 9/29/2015 1051h | E200.7 | 0.0767 | 0.100 | < 0.100 | U |
| Lead | 7439-92-1 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.000264 | 0.00200 | 0.000455 | J |
| Magnesium | 7439-95-4 | mg/L | 9/28/2015 1711h | 9/29/2015 1051h | E200.7 | 0.0294 | 1.00 | 18.3 | |
| Manganese | 7439-96-5 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.00153 | 0.00200 | < 0.00200 | U |
| Mercury | 7439-97-6 | mg/L | 10/2/2015 1630h | 10/6/2015 1252h | E245.1 | 0.00000892 | 0.000150 | < 0.000150 | U |
| Molybdenum | 7439-98-7 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.000206 | 0.00200 | 0.00179 | J |
| Nickel | 7440-02-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.000754 | 0.00200 | < 0.00200 | U |
| Potassium | 7440-09-7 | mg/L | 9/28/2015 1711h | 9/29/2015 1051h | E200.7 | 0.247 | 1.00 | 3.11 | |
| Selenium | 7782-49-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.0000634 | 0.00200 | 0.000699 | J |
| Silver | 7440-22-4 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.0000244 | 0.00200 | 0.0000270 | JB |
| Sodium | 7440-23-5 | mg/L | 9/28/2015 1711h | 9/29/2015 1029h | E200.7 | 0.330 | 10.0 | 43.4 | |
| Thallium | 7440-28-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.0000242 | 0.00200 | < 0.00200 | U |
| Vanadium | 7440-62-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.000438 | 0.00440 | 0.00331 | JB |
| Zinc | 7440-66-6 | mg/L | 9/28/2015 1714h | 10/7/2015 1535h | E200.8 | 0.00476 | 0.00500 | < 0.00500 | U |

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3440 South 700 West

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-002
Client Sample ID: GK02-SW-02
Collection Date: 9/22/2015 1355h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

DISSOLVED METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-------|-----------------|-----------------|-------------|------------|-----------------|-------------------|------|
| Aluminum | 7429-90-5 | mg/L | 9/28/2015 1711h | 9/29/2015 1058h | E200.7 | 0.0237 | 0.100 | < 0.100 | U |
| Antimony | 7440-36-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.0000366 | 0.00200 | 0.000580 | JB |
| Arsenic | 7440-38-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.0000920 | 0.00200 | 0.00139 | JB |
| Barium | 7440-39-3 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.000538 | 0.00200 | 0.0778 | |
| Beryllium | 7440-41-7 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.0000288 | 0.00200 | < 0.00200 | U |
| Cadmium | 7440-43-9 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.000193 | 0.000500 | < 0.000500 | U |
| Calcium | 7440-70-2 | mg/L | 9/28/2015 1711h | 9/29/2015 1040h | E200.7 | 0.401 | 10.0 | 66.4 | |
| Chromium | 7440-47-3 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.00154 | 0.00200 | < 0.00200 | U |
| Cobalt | 7440-48-4 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.0000434 | 0.00400 | 0.0000978 | J |
| Copper | 7440-50-8 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.000692 | 0.00200 | 0.00367 | |
| Iron | 7439-89-6 | mg/L | 9/28/2015 1711h | 9/29/2015 1058h | E200.7 | 0.0767 | 0.100 | < 0.100 | U |
| Lead | 7439-92-1 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.000264 | 0.00200 | 0.000300 | J |
| Magnesium | 7439-95-4 | mg/L | 9/28/2015 1711h | 9/29/2015 1058h | E200.7 | 0.0294 | 1.00 | 16.4 | |
| Manganese | 7439-96-5 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.00153 | 0.00200 | 0.00170 | J |
| Mercury | 7439-97-6 | mg/L | 10/2/2015 1630h | 10/6/2015 1257h | E245.1 | 0.00000892 | 0.000150 | < 0.000150 | U |
| Molybdenum | 7439-98-7 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.000206 | 0.00200 | 0.00182 | J |
| Nickel | 7440-02-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.000754 | 0.00200 | 0.00122 | J |
| Potassium | 7440-09-7 | mg/L | 9/28/2015 1711h | 9/29/2015 1058h | E200.7 | 0.247 | 1.00 | 2.81 | |
| Selenium | 7782-49-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.0000634 | 0.00200 | 0.000604 | J |
| Silver | 7440-22-4 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.0000244 | 0.00200 | 0.0000692 | JB |
| Sodium | 7440-23-5 | mg/L | 9/28/2015 1711h | 9/29/2015 1058h | E200.7 | 0.0330 | 1.00 | 39.0 | |
| Thallium | 7440-28-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.0000242 | 0.00200 | 0.0000396 | J |
| Vanadium | 7440-62-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.000438 | 0.00440 | 0.00293 | JB |
| Zinc | 7440-66-6 | mg/L | 9/28/2015 1714h | 10/7/2015 1550h | E200.8 | 0.00476 | 0.00500 | < 0.00500 | U |

B - This analyte was also detected in the method blank below the PQL.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Gold King Mine Spill / 01255.1.016.03
Lab Sample ID: 1509529-003
Client Sample ID: GK03-SW-03
Collection Date: 9/22/2015 1730h
Received Date: 9/25/2015 1400h

Contact: Jim Harris

Analytical Results

DISSOLVED METALS

| Compound | CAS | Units | Date Prepared | Date Analyzed | Method Used | MDL | Reporting Limit | Analytical Result | Qual |
|------------|-----------|-------|-----------------|-----------------|-------------|------------|-----------------|-------------------|------|
| Aluminum | 7429-90-5 | mg/L | 9/28/2015 1711h | 9/29/2015 1100h | E200.7 | 0.0237 | 0.100 | < 0.100 | U |
| Antimony | 7440-36-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.0000366 | 0.00200 | 0.000265 | JB |
| Arsenic | 7440-38-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.0000920 | 0.00200 | 0.00130 | JB |
| Barium | 7440-39-3 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.000538 | 0.00200 | 0.0750 | |
| Beryllium | 7440-41-7 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.0000288 | 0.00200 | < 0.00200 | U |
| Cadmium | 7440-43-9 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.000193 | 0.000500 | < 0.000500 | U |
| Calcium | 7440-70-2 | mg/L | 9/28/2015 1711h | 9/29/2015 1049h | E200.7 | 0.401 | 10.0 | 70.3 | |
| Chromium | 7440-47-3 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.00154 | 0.00200 | < 0.00200 | U |
| Cobalt | 7440-48-4 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.0000434 | 0.00400 | 0.000103 | J |
| Copper | 7440-50-8 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.000692 | 0.00200 | 0.00328 | |
| Iron | 7439-89-6 | mg/L | 9/28/2015 1711h | 9/29/2015 1100h | E200.7 | 0.0767 | 0.100 | < 0.100 | U |
| Lead | 7439-92-1 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.000264 | 0.00200 | < 0.00200 | U |
| Magnesium | 7439-95-4 | mg/L | 9/28/2015 1711h | 9/29/2015 1100h | E200.7 | 0.0294 | 1.00 | 17.4 | |
| Manganese | 7439-96-5 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.00153 | 0.00200 | 0.00173 | J |
| Mercury | 7439-97-6 | mg/L | 10/2/2015 1630h | 10/6/2015 1259h | E245.1 | 0.00000892 | 0.000150 | < 0.000150 | U |
| Molybdenum | 7439-98-7 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.000206 | 0.00200 | 0.00175 | J |
| Nickel | 7440-02-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.000754 | 0.00200 | 0.00142 | J |
| Potassium | 7440-09-7 | mg/L | 9/28/2015 1711h | 9/29/2015 1100h | E200.7 | 0.247 | 1.00 | 2.92 | |
| Selenium | 7782-49-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.0000634 | 0.00200 | 0.000574 | J |
| Silver | 7440-22-4 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.0000244 | 0.00200 | < 0.00200 | UB |
| Sodium | 7440-23-5 | mg/L | 9/28/2015 1711h | 9/29/2015 1100h | E200.7 | 0.0330 | 1.00 | 41.4 | |
| Thallium | 7440-28-0 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.0000242 | 0.00200 | < 0.00200 | U |
| Vanadium | 7440-62-2 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.000438 | 0.00440 | 0.00283 | JB |
| Zinc | 7440-66-6 | mg/L | 9/28/2015 1714h | 10/7/2015 1606h | E200.8 | 0.00476 | 0.00500 | 0.00588 | |

B - This analyte was also detected in the method blank below the PQL.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: LCS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------|--------|------------------|--------|-----------|-----------------|---------------|-------------------|------|----------|--------------|-------|-----------|------|
| Lab Sample ID: LCS-39357 | | | | | | | | | | | | | |
| Date Analyzed: | | 09/29/2015 1027h | | | | | | | | | | | |
| Test Code: | | 200.7-DIS | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1711h | | | | | | | | | | | |
| Aluminum | 1.03 | mg/L | E200.7 | 0.0237 | 0.100 | 1.000 | 0 | 103 | 85 - 115 | | | | |
| Calcium | 10.1 | mg/L | E200.7 | 0.0401 | 1.00 | 10.00 | 0 | 101 | 85 - 115 | | | | |
| Iron | 1.03 | mg/L | E200.7 | 0.0767 | 0.100 | 1.000 | 0 | 103 | 85 - 115 | | | | |
| Magnesium | 10.2 | mg/L | E200.7 | 0.0294 | 1.00 | 10.00 | 0 | 102 | 85 - 115 | | | | |
| Potassium | 10.4 | mg/L | E200.7 | 0.247 | 1.00 | 10.00 | 0 | 104 | 85 - 115 | | | | |
| Sodium | 10.5 | mg/L | E200.7 | 0.0330 | 1.00 | 10.00 | 0 | 105 | 85 - 115 | | | | |
| Lab Sample ID: LCS-39360 | | | | | | | | | | | | | |
| Date Analyzed: | | 09/29/2015 1128h | | | | | | | | | | | |
| Test Code: | | 200.7-W | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1926h | | | | | | | | | | | |
| Aluminum | 1.04 | mg/L | E200.7 | 0.0237 | 0.100 | 1.000 | 0 | 104 | 85 - 115 | | | | |
| Calcium | 10.2 | mg/L | E200.7 | 0.0401 | 1.00 | 10.00 | 0 | 102 | 85 - 115 | | | | |
| Iron | 1.03 | mg/L | E200.7 | 0.0767 | 0.100 | 1.000 | 0 | 103 | 85 - 115 | | | | |
| Magnesium | 10.3 | mg/L | E200.7 | 0.0294 | 1.00 | 10.00 | 0 | 103 | 85 - 115 | | | | |
| Potassium | 10.4 | mg/L | E200.7 | 0.247 | 1.00 | 10.00 | 0 | 104 | 85 - 115 | | | | |
| Sodium | 10.7 | mg/L | E200.7 | 0.0330 | 1.00 | 10.00 | 0 | 107 | 85 - 115 | | | | |
| Lab Sample ID: LCS-39358 | | | | | | | | | | | | | |
| Date Analyzed: | | 10/07/2015 1525h | | | | | | | | | | | |
| Test Code: | | 200.8-DIS | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1714h | | | | | | | | | | | |
| Antimony | 0.184 | mg/L | E200.8 | 0.0000366 | 0.00200 | 0.2000 | 0 | 92.1 | 85 - 115 | | | | |
| Arsenic | 0.199 | mg/L | E200.8 | 0.0000920 | 0.00200 | 0.2000 | 0 | 99.3 | 85 - 115 | | | | |
| Barium | 0.196 | mg/L | E200.8 | 0.000538 | 0.00200 | 0.2000 | 0 | 97.8 | 85 - 115 | | | | |
| Beryllium | 0.204 | mg/L | E200.8 | 0.0000288 | 0.00200 | 0.2000 | 0 | 102 | 85 - 115 | | | | |
| Cadmium | 0.193 | mg/L | E200.8 | 0.000193 | 0.000500 | 0.2000 | 0 | 96.6 | 85 - 115 | | | | |
| Chromium | 0.201 | mg/L | E200.8 | 0.00154 | 0.00200 | 0.2000 | 0 | 100 | 85 - 115 | | | | |
| Cobalt | 0.197 | mg/L | E200.8 | 0.0000434 | 0.00400 | 0.2000 | 0 | 98.4 | 85 - 115 | | | | |
| Copper | 0.197 | mg/L | E200.8 | 0.000692 | 0.00200 | 0.2000 | 0 | 98.7 | 85 - 115 | | | | |
| Lead | 0.195 | mg/L | E200.8 | 0.000264 | 0.00200 | 0.2000 | 0 | 97.5 | 85 - 115 | | | | |
| Manganese | 0.200 | mg/L | E200.8 | 0.00153 | 0.00200 | 0.2000 | 0 | 99.9 | 85 - 115 | | | | |
| Molybdenum | 0.198 | mg/L | E200.8 | 0.000206 | 0.00200 | 0.2000 | 0 | 98.9 | 85 - 115 | | | | |



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: LCS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------|--------|----------------|------------------|-----------|-----------------|---------------|-------------------|------|----------|--------------|-------|-----------|------|
| Lab Sample ID: LCS-39358 | | Date Analyzed: | 10/07/2015 1525h | | | | | | | | | | |
| Test Code: 200.8-DIS | | Date Prepared: | 09/28/2015 1714h | | | | | | | | | | |
| Nickel | 0.197 | mg/L | E200.8 | 0.000754 | 0.00200 | 0.2000 | 0 | 98.6 | 85 - 115 | | | | |
| Selenium | 0.193 | mg/L | E200.8 | 0.0000634 | 0.00200 | 0.2000 | 0 | 96.4 | 85 - 115 | | | | |
| Silver | 0.186 | mg/L | E200.8 | 0.0000244 | 0.00200 | 0.2000 | 0 | 93.2 | 85 - 115 | | | | |
| Thallium | 0.192 | mg/L | E200.8 | 0.0000242 | 0.00200 | 0.2000 | 0 | 95.9 | 85 - 115 | | | | |
| Vanadium | 0.203 | mg/L | E200.8 | 0.000438 | 0.00440 | 0.2000 | 0 | 102 | 85 - 115 | | | | |
| Zinc | 0.973 | mg/L | E200.8 | 0.00476 | 0.00500 | 1.000 | 0 | 97.3 | 85 - 115 | | | | |
| Lab Sample ID: LCS-39361 | | Date Analyzed: | 10/06/2015 2100h | | | | | | | | | | |
| Test Code: 200.8-W | | Date Prepared: | 09/28/2015 1927h | | | | | | | | | | |
| Antimony | 0.185 | mg/L | E200.8 | 0.0000366 | 0.00200 | 0.2000 | 0 | 92.7 | 85 - 115 | | | | |
| Arsenic | 0.208 | mg/L | E200.8 | 0.0000920 | 0.00200 | 0.2000 | 0 | 104 | 85 - 115 | | | | |
| Barium | 0.203 | mg/L | E200.8 | 0.000538 | 0.00200 | 0.2000 | 0 | 102 | 85 - 115 | | | | |
| Beryllium | 0.203 | mg/L | E200.8 | 0.0000288 | 0.00200 | 0.2000 | 0 | 102 | 85 - 115 | | | | |
| Cadmium | 0.200 | mg/L | E200.8 | 0.000193 | 0.000500 | 0.2000 | 0 | 99.9 | 85 - 115 | | | | |
| Chromium | 0.202 | mg/L | E200.8 | 0.00154 | 0.00200 | 0.2000 | 0 | 101 | 85 - 115 | | | | |
| Cobalt | 0.198 | mg/L | E200.8 | 0.0000434 | 0.00400 | 0.2000 | 0 | 99.1 | 85 - 115 | | | | |
| Copper | 0.200 | mg/L | E200.8 | 0.000692 | 0.00200 | 0.2000 | 0 | 100 | 85 - 115 | | | | |
| Lead | 0.196 | mg/L | E200.8 | 0.000264 | 0.00200 | 0.2000 | 0 | 98.2 | 85 - 115 | | | | |
| Manganese | 0.201 | mg/L | E200.8 | 0.00153 | 0.00200 | 0.2000 | 0 | 100 | 85 - 115 | | | | |
| Molybdenum | 0.204 | mg/L | E200.8 | 0.000206 | 0.00200 | 0.2000 | 0 | 102 | 85 - 115 | | | | |
| Nickel | 0.197 | mg/L | E200.8 | 0.000754 | 0.00200 | 0.2000 | 0 | 98.7 | 85 - 115 | | | | |
| Selenium | 0.201 | mg/L | E200.8 | 0.0000634 | 0.00200 | 0.2000 | 0 | 100 | 85 - 115 | | | | |
| Silver | 0.198 | mg/L | E200.8 | 0.0000244 | 0.00200 | 0.2000 | 0 | 98.9 | 85 - 115 | | | | |
| Thallium | 0.196 | mg/L | E200.8 | 0.0000242 | 0.00200 | 0.2000 | 0 | 97.8 | 85 - 115 | | | | |
| Vanadium | 0.203 | mg/L | E200.8 | 0.000438 | 0.00440 | 0.2000 | 0 | 102 | 85 - 115 | | | | |
| Zinc | 1.01 | mg/L | E200.8 | 0.00476 | 0.00500 | 1.000 | 0 | 101 | 85 - 115 | | | | |



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Jim Harris

Lab Set ID: 1509529

Dept: ME

Project: Gold King Mine Spill / 01255.1.016.03

QC Type: LCS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------|--------|------------------|---------|---------|-----------------|---------------|-------------------|------|----------|--------------|-------|-----------|------|
| Lab Sample ID: LCS-39484 | | | | | | | | | | | | | |
| Date Analyzed: | | 10/08/2015 958h | | | | | | | | | | | |
| Test Code: | | 6010C-S | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1636h | | | | | | | | | | | |
| Aluminum | 96.7 | mg/kg | SW6010C | 1.72 | 10.0 | 100.0 | 0 | 96.7 | 80 - 120 | | | | |
| Iron | 93.0 | mg/kg | SW6010C | 1.14 | 5.00 | 100.0 | 0 | 93.0 | 80 - 120 | | | | |
| Magnesium | 967 | mg/kg | SW6010C | 10.5 | 100 | 1,000 | 0 | 96.7 | 80 - 120 | | | | |
| Lab Sample ID: LCS-39677 | | | | | | | | | | | | | |
| Date Analyzed: | | 10/13/2015 1633h | | | | | | | | | | | |
| Test Code: | | 6010C-S | | | | | | | | | | | |
| Date Prepared: | | 10/13/2015 1500h | | | | | | | | | | | |
| Calcium | 961 | mg/kg | SW6010C | 2.37 | 100 | 1,000 | 0 | 96.1 | 80 - 120 | | | | |
| Potassium | 1,050 | mg/kg | SW6010C | 20.3 | 100 | 1,000 | 0 | 105 | 80 - 120 | | | | |
| Sodium | 1,060 | mg/kg | SW6010C | 7.71 | 100 | 1,000 | 0 | 106 | 80 - 120 | | | | |
| Lab Sample ID: LCS-39484 | | | | | | | | | | | | | |
| Date Analyzed: | | 10/05/2015 1027h | | | | | | | | | | | |
| Test Code: | | 6020-S | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1636h | | | | | | | | | | | |
| Antimony | 19.5 | mg/kg | SW6020A | 0.291 | 3.20 | 20.00 | 0 | 97.3 | 85 - 115 | | | | |
| Arsenic | 19.9 | mg/kg | SW6020A | 0.0648 | 2.00 | 20.00 | 0 | 99.3 | 85 - 115 | | | | |
| Barium | 19.2 | mg/kg | SW6020A | 2.16 | 3.60 | 20.00 | 0 | 95.8 | 85 - 115 | | | | |
| Beryllium | 20.2 | mg/kg | SW6020A | 0.00476 | 1.60 | 20.00 | 0 | 101 | 85 - 115 | | | | |
| Cadmium | 19.2 | mg/kg | SW6020A | 0.0135 | 0.680 | 20.00 | 0 | 96.2 | 85 - 115 | | | | |
| Chromium | 19.6 | mg/kg | SW6020A | 1.94 | 8.00 | 20.00 | 0 | 98.0 | 85 - 115 | | | | |
| Cobalt | 19.2 | mg/kg | SW6020A | 0.122 | 1.08 | 20.00 | 0 | 96.2 | 85 - 115 | | | | |
| Copper | 19.5 | mg/kg | SW6020A | 1.23 | 12.4 | 20.00 | 0 | 97.6 | 85 - 115 | | | | |
| Lead | 19.3 | mg/kg | SW6020A | 2.40 | 5.20 | 20.00 | 0 | 96.7 | 85 - 115 | | | | |
| Manganese | 19.8 | mg/kg | SW6020A | 0.536 | 3.20 | 20.00 | 0 | 99.1 | 85 - 115 | | | | |
| Molybdenum | 19.4 | mg/kg | SW6020A | 0.285 | 16.0 | 20.00 | 0 | 97.2 | 85 - 115 | | | | |
| Nickel | 19.4 | mg/kg | SW6020A | 1.75 | 16.0 | 20.00 | 0 | 97.1 | 85 - 115 | | | | |
| Selenium | 18.9 | mg/kg | SW6020A | 0.436 | 6.80 | 20.00 | 0 | 94.7 | 85 - 115 | | | | |
| Silver | 18.8 | mg/kg | SW6020A | 0.0179 | 1.20 | 20.00 | 0 | 94.0 | 85 - 115 | | | | |
| Thallium | 19.3 | mg/kg | SW6020A | 0.00404 | 3.20 | 20.00 | 0 | 96.4 | 85 - 115 | | | | |
| Vanadium | 19.7 | mg/kg | SW6020A | 0.412 | 8.00 | 20.00 | 0 | 98.7 | 85 - 115 | | | | |
| Zinc | 97.3 | mg/kg | SW6020A | 4.04 | 40.0 | 100.0 | 0 | 97.3 | 85 - 115 | | | | |



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1509529

Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris

Dept: ME

QC Type: LCS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------|----------------|------------|---------|------------|-----------------|---------------|-------------------|------|----------|--------------|-------|-----------|------|
| Lab Sample ID: LCS-39340 | Date Analyzed: | 09/28/2015 | 821h | | | | | | | | | | |
| Test Code: HG-DW-245.1 | Date Prepared: | 09/27/2015 | 1200h | | | | | | | | | | |
| Mercury | 0.00332 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 99.6 | 85 - 115 | | | | |
| Lab Sample ID: LCS-39491 | Date Analyzed: | 10/06/2015 | 1246h | | | | | | | | | | |
| Test Code: HG-DW-DIS-245.1 | Date Prepared: | 10/02/2015 | 1630h | | | | | | | | | | |
| Mercury | 0.00347 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 104 | 85 - 115 | | | | |
| Lab Sample ID: LCS-39424 | Date Analyzed: | 10/01/2015 | 818h | | | | | | | | | | |
| Test Code: HG-S-7471B | Date Prepared: | 09/30/2015 | 1955h | | | | | | | | | | |
| Mercury | 0.426 | mg/kg | SW7471B | 0.00135 | 0.0400 | 0.4000 | 0 | 106 | 80 - 120 | | | | |



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Jim Harris

Lab Set ID: 1509529

Dept: ME

Project: Gold King Mine Spill / 01255.1.016.03

QC Type: MBLK

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------|------------|------------------|--------|------------|-----------------|---------------|-------------------|------|--------|--------------|-------|-----------|------|
| Lab Sample ID: MB-39357 | | | | | | | | | | | | | |
| Date Analyzed: | | 09/29/2015 1024h | | | | | | | | | | | |
| Test Code: | | 200.7-DIS | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1711h | | | | | | | | | | | |
| Aluminum | < 0.100 | mg/L | E200.7 | 0.0237 | 0.100 | | | | | | | | U |
| Calcium | < 1.00 | mg/L | E200.7 | 0.0401 | 1.00 | | | | | | | | U |
| Iron | < 0.100 | mg/L | E200.7 | 0.0767 | 0.100 | | | | | | | | U |
| Magnesium | < 1.00 | mg/L | E200.7 | 0.0294 | 1.00 | | | | | | | | U |
| Potassium | < 1.00 | mg/L | E200.7 | 0.247 | 1.00 | | | | | | | | U |
| Sodium | < 1.00 | mg/L | E200.7 | 0.0330 | 1.00 | | | | | | | | U |
| Lab Sample ID: MB-39360 | | | | | | | | | | | | | |
| Date Analyzed: | | 09/29/2015 1126h | | | | | | | | | | | |
| Test Code: | | 200.7-W | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1926h | | | | | | | | | | | |
| Aluminum | < 0.100 | mg/L | E200.7 | 0.0237 | 0.100 | | | | | | | | U |
| Calcium | < 1.00 | mg/L | E200.7 | 0.0401 | 1.00 | | | | | | | | U |
| Iron | < 0.100 | mg/L | E200.7 | 0.0767 | 0.100 | | | | | | | | U |
| Magnesium | < 1.00 | mg/L | E200.7 | 0.0294 | 1.00 | | | | | | | | U |
| Potassium | < 1.00 | mg/L | E200.7 | 0.247 | 1.00 | | | | | | | | U |
| Sodium | < 1.00 | mg/L | E200.7 | 0.0330 | 1.00 | | | | | | | | U |
| Lab Sample ID: MB-39358 | | | | | | | | | | | | | |
| Date Analyzed: | | 10/07/2015 1522h | | | | | | | | | | | |
| Test Code: | | 200.8-DIS | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1714h | | | | | | | | | | | |
| Manganese | < 0.000500 | mg/L | E200.8 | 0.000382 | 0.000500 | | | | | | | | U |
| Selenium | < 0.000500 | mg/L | E200.8 | 0.0000158 | 0.000500 | | | | | | | | U |
| Thallium | < 0.000500 | mg/L | E200.8 | 0.00000605 | 0.000500 | | | | | | | | U |
| Lab Sample ID: MB-39358 | | | | | | | | | | | | | |
| Date Analyzed: | | 10/07/2015 1603h | | | | | | | | | | | |
| Test Code: | | 200.8-DIS | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1714h | | | | | | | | | | | |
| Antimony | 0.000152 | mg/L | E200.8 | 0.0000366 | 0.00200 | | | | | | | | JB |
| Arsenic | 0.000101 | mg/L | E200.8 | 0.0000920 | 0.00200 | | | | | | | | JB |
| Barium | < 0.00200 | mg/L | E200.8 | 0.000538 | 0.00200 | | | | | | | | U |
| Beryllium | < 0.00200 | mg/L | E200.8 | 0.0000288 | 0.00200 | | | | | | | | U |
| Cadmium | < 0.000500 | mg/L | E200.8 | 0.000193 | 0.000500 | | | | | | | | U |



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Jim Harris

Lab Set ID: 1509529

Dept: ME

Project: Gold King Mine Spill / 01255.1.016.03

QC Type: MBLK

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------|----------------|----------------|------------|-----------|-----------------|---------------|-------------------|------|--------|--------------|-------|-----------|------|
| Lab Sample ID: MB-39358 | Date Analyzed: | 10/07/2015 | 1603h | | | | | | | | | | |
| Test Code: | 200.8-DIS | Date Prepared: | 09/28/2015 | 1714h | | | | | | | | | |
| Chromium | < 0.00200 | mg/L | E200.8 | 0.00154 | 0.00200 | | | | | | | | U |
| Cobalt | < 0.00400 | mg/L | E200.8 | 0.0000434 | 0.00400 | | | | | | | | U |
| Copper | < 0.00200 | mg/L | E200.8 | 0.000692 | 0.00200 | | | | | | | | U |
| Lead | < 0.00200 | mg/L | E200.8 | 0.000264 | 0.00200 | | | | | | | | U |
| Molybdenum | < 0.00200 | mg/L | E200.8 | 0.000206 | 0.00200 | | | | | | | | U |
| Nickel | < 0.00200 | mg/L | E200.8 | 0.000754 | 0.00200 | | | | | | | | U |
| Silver | 0.0000263 | mg/L | E200.8 | 0.0000244 | 0.00200 | | | | | | | | JB |
| Vanadium | 0.00107 | mg/L | E200.8 | 0.000438 | 0.00440 | | | | | | | | JB |
| Zinc | < 0.00500 | mg/L | E200.8 | 0.00476 | 0.00500 | | | | | | | | U |
| Lab Sample ID: MB-39361 | Date Analyzed: | 10/06/2015 | 2056h | | | | | | | | | | |
| Test Code: | 200.8-W | Date Prepared: | 09/28/2015 | 1927h | | | | | | | | | |
| Antimony | < 0.00200 | mg/L | E200.8 | 0.0000366 | 0.00200 | | | | | | | | U |
| Arsenic | < 0.00200 | mg/L | E200.8 | 0.0000920 | 0.00200 | | | | | | | | U |
| Barium | 0.000714 | mg/L | E200.8 | 0.000538 | 0.00200 | | | | | | | | JB |
| Beryllium | < 0.00200 | mg/L | E200.8 | 0.0000288 | 0.00200 | | | | | | | | U |
| Cadmium | < 0.000500 | mg/L | E200.8 | 0.000193 | 0.000500 | | | | | | | | U |
| Chromium | < 0.00200 | mg/L | E200.8 | 0.00154 | 0.00200 | | | | | | | | U |
| Cobalt | < 0.00400 | mg/L | E200.8 | 0.0000434 | 0.00400 | | | | | | | | U |
| Copper | < 0.00200 | mg/L | E200.8 | 0.000692 | 0.00200 | | | | | | | | U |
| Lead | < 0.00200 | mg/L | E200.8 | 0.000264 | 0.00200 | | | | | | | | U |
| Manganese | < 0.00200 | mg/L | E200.8 | 0.00153 | 0.00200 | | | | | | | | U |
| Molybdenum | < 0.00200 | mg/L | E200.8 | 0.000206 | 0.00200 | | | | | | | | U |
| Nickel | < 0.00200 | mg/L | E200.8 | 0.000754 | 0.00200 | | | | | | | | U |
| Selenium | < 0.00200 | mg/L | E200.8 | 0.0000634 | 0.00200 | | | | | | | | U |
| Silver | < 0.00200 | mg/L | E200.8 | 0.0000244 | 0.00200 | | | | | | | | U |
| Thallium | < 0.00200 | mg/L | E200.8 | 0.0000242 | 0.00200 | | | | | | | | U |
| Vanadium | 0.000667 | mg/L | E200.8 | 0.000438 | 0.00440 | | | | | | | | JB |
| Zinc | < 0.00500 | mg/L | E200.8 | 0.00476 | 0.00500 | | | | | | | | U |



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Jim Harris

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Dept: ME

Project: Gold King Mine Spill / 01255.1.016.03

QC Type: MBLK

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------|----------------|----------------|------------|---------|-----------------|---------------|-------------------|------|--------|--------------|-------|-----------|------|
| Lab Sample ID: MB-39484 | Date Analyzed: | 10/08/2015 | 956h | | | | | | | | | | |
| Test Code: | 6010C-S | Date Prepared: | 10/02/2015 | 1636h | | | | | | | | | |
| Aluminum | 4.95 | mg/kg | SW6010C | 1.72 | 10.0 | | | | | | | | JB |
| Iron | 2.05 | mg/kg | SW6010C | 1.14 | 5.00 | | | | | | | | JB |
| Magnesium | 25.9 | mg/kg | SW6010C | 10.5 | 100 | | | | | | | | JB |
| Lab Sample ID: MB-39677 | Date Analyzed: | 10/13/2015 | 1631h | | | | | | | | | | |
| Test Code: | 6010C-S | Date Prepared: | 10/13/2015 | 1500h | | | | | | | | | |
| Calcium | 7.02 | mg/kg | SW6010C | 2.37 | 100 | | | | | | | | JB |
| Potassium | < 100 | mg/kg | SW6010C | 20.3 | 100 | | | | | | | | U |
| Sodium | 8.26 | mg/kg | SW6010C | 7.71 | 100 | | | | | | | | JB |
| Lab Sample ID: MB-39484 | Date Analyzed: | 10/05/2015 | 1023h | | | | | | | | | | |
| Test Code: | 6020-S | Date Prepared: | 10/02/2015 | 1636h | | | | | | | | | |
| Antimony | < 3.20 | mg/kg | SW6020A | 0.291 | 3.20 | | | | | | | | U |
| Arsenic | < 2.00 | mg/kg | SW6020A | 0.0648 | 2.00 | | | | | | | | U |
| Barium | < 3.60 | mg/kg | SW6020A | 2.16 | 3.60 | | | | | | | | U |
| Beryllium | < 1.60 | mg/kg | SW6020A | 0.00476 | 1.60 | | | | | | | | U |
| Cadmium | < 0.680 | mg/kg | SW6020A | 0.0135 | 0.680 | | | | | | | | U |
| Chromium | < 8.00 | mg/kg | SW6020A | 1.94 | 8.00 | | | | | | | | U |
| Cobalt | < 1.08 | mg/kg | SW6020A | 0.122 | 1.08 | | | | | | | | U |
| Copper | < 12.4 | mg/kg | SW6020A | 1.23 | 12.4 | | | | | | | | U |
| Lead | < 5.20 | mg/kg | SW6020A | 2.40 | 5.20 | | | | | | | | U |
| Manganese | < 3.20 | mg/kg | SW6020A | 0.536 | 3.20 | | | | | | | | U |
| Molybdenum | < 16.0 | mg/kg | SW6020A | 0.285 | 16.0 | | | | | | | | U |
| Nickel | < 16.0 | mg/kg | SW6020A | 1.75 | 16.0 | | | | | | | | U |
| Selenium | < 6.80 | mg/kg | SW6020A | 0.436 | 6.80 | | | | | | | | U |
| Silver | < 1.20 | mg/kg | SW6020A | 0.0179 | 1.20 | | | | | | | | U |
| Thallium | < 3.20 | mg/kg | SW6020A | 0.00404 | 3.20 | | | | | | | | U |
| Vanadium | < 8.00 | mg/kg | SW6020A | 0.412 | 8.00 | | | | | | | | U |
| Zinc | < 40.0 | mg/kg | SW6020A | 4.04 | 40.0 | | | | | | | | U |



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1509529

Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris

Dept: ME

QC Type: MBLK

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------|-----------------|----------------|------------|------------|-----------------|---------------|-------------------|------|--------|--------------|-------|-----------|------|
| Lab Sample ID: MB-39340 | Date Analyzed: | 09/28/2015 | 820h | | | | | | | | | | |
| Test Code: | HG-DW-245.1 | Date Prepared: | 09/27/2015 | 1200h | | | | | | | | | |
| Mercury | < 0.000150 | mg/L | E245.1 | 0.00000892 | 0.000150 | | | | | | | | U |
| Lab Sample ID: MB-39491 | Date Analyzed: | 10/06/2015 | 1245h | | | | | | | | | | |
| Test Code: | HG-DW-DIS-245.1 | Date Prepared: | 10/02/2015 | 1630h | | | | | | | | | |
| Mercury | < 0.000150 | mg/L | E245.1 | 0.00000892 | 0.000150 | | | | | | | | U |
| Lab Sample ID: MB-39424 | Date Analyzed: | 10/01/2015 | 816h | | | | | | | | | | |
| Test Code: | HG-S-7471B | Date Prepared: | 09/30/2015 | 1955h | | | | | | | | | |
| Mercury | 0.00160 | mg/kg | SW7471B | 0.00135 | 0.0400 | | | | | | | | JB |

B - This analyte was also detected in the method blank below the PQL.

J - Estimated value between the MDL and the reporting limit (PQL).

U - This flag indicates the compound was analyzed for but not detected above the MDL.



3440 South 700 West
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Jose Rocha
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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Jim Harris

Lab Set ID: 1509529

Dept: ME

Project: Gold King Mine Spill / 01255.1.016.03

QC Type: MS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------------|------------------|-------|--------|-----------|-----------------|---------------|-------------------|------|----------|--------------|-------|-----------|------|
| Lab Sample ID: 1509529-001BMS | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1036h | | | | | | | | | | | | |
| Test Code: | 200.7-DIS | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1711h | | | | | | | | | | | | |
| Calcium | 83.1 | mg/L | E200.7 | 0.401 | 10.0 | 10.00 | 74.2 | 89.4 | 70 - 130 | | | | |
| Sodium | 53.9 | mg/L | E200.7 | 0.330 | 10.0 | 10.00 | 43.4 | 105 | 70 - 130 | | | | |
| Lab Sample ID: 1509529-001BMS | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1054h | | | | | | | | | | | | |
| Test Code: | 200.7-DIS | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1711h | | | | | | | | | | | | |
| Aluminum | 1.07 | mg/L | E200.7 | 0.0237 | 0.100 | 1.000 | 0 | 107 | 70 - 130 | | | | |
| Iron | 1.03 | mg/L | E200.7 | 0.0767 | 0.100 | 1.000 | 0 | 103 | 70 - 130 | | | | |
| Magnesium | 28.5 | mg/L | E200.7 | 0.0294 | 1.00 | 10.00 | 18.3 | 102 | 70 - 130 | | | | |
| Potassium | 13.5 | mg/L | E200.7 | 0.247 | 1.00 | 10.00 | 3.11 | 104 | 70 - 130 | | | | |
| Lab Sample ID: 1509529-002AMS | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1139h | | | | | | | | | | | | |
| Test Code: | 200.7-W | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1926h | | | | | | | | | | | | |
| Calcium | 82.4 | mg/L | E200.7 | 0.401 | 10.0 | 10.00 | 71.2 | 112 | 70 - 130 | | | | |
| Sodium | 50.2 | mg/L | E200.7 | 0.330 | 10.0 | 10.00 | 40.1 | 101 | 70 - 130 | | | | |
| Lab Sample ID: 1509529-002AMS | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1158h | | | | | | | | | | | | |
| Test Code: | 200.7-W | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1926h | | | | | | | | | | | | |
| Aluminum | 4.21 | mg/L | E200.7 | 0.0237 | 0.100 | 1.000 | 1.72 | 249 | 70 - 130 | | | | 1 |
| Iron | 3.11 | mg/L | E200.7 | 0.0767 | 0.100 | 1.000 | 1.68 | 143 | 70 - 130 | | | | 1 |
| Magnesium | 28.5 | mg/L | E200.7 | 0.0294 | 1.00 | 10.00 | 17.2 | 113 | 70 - 130 | | | | |
| Potassium | 13.7 | mg/L | E200.7 | 0.247 | 1.00 | 10.00 | 3.21 | 105 | 70 - 130 | | | | |
| Lab Sample ID: 1509529-001BMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/07/2015 1544h | | | | | | | | | | | | |
| Test Code: | 200.8-DIS | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1714h | | | | | | | | | | | | |
| Antimony | 0.187 | mg/L | E200.8 | 0.0000366 | 0.00200 | 0.2000 | 0.000354 | 93.4 | 75 - 125 | | | | |
| Arsenic | 0.200 | mg/L | E200.8 | 0.0000920 | 0.00200 | 0.2000 | 0.00139 | 99.3 | 75 - 125 | | | | |
| Barium | 0.278 | mg/L | E200.8 | 0.000538 | 0.00200 | 0.2000 | 0.0901 | 93.9 | 75 - 125 | | | | |
| Beryllium | 0.194 | mg/L | E200.8 | 0.0000288 | 0.00200 | 0.2000 | 0 | 97.2 | 75 - 125 | | | | |
| Cadmium | 0.189 | mg/L | E200.8 | 0.000193 | 0.000500 | 0.2000 | 0 | 94.7 | 75 - 125 | | | | |
| Chromium | 0.204 | mg/L | E200.8 | 0.00154 | 0.00200 | 0.2000 | 0 | 102 | 75 - 125 | | | | |



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Jim Harris

Lab Set ID: 1509529

Dept: ME

Project: Gold King Mine Spill / 01255.1.016.03

QC Type: MS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------------|--------|----------------|------------------|-----------|-----------------|---------------|-------------------|------|----------|--------------|-------|-----------|------|
| Lab Sample ID: 1509529-001BMS | | Date Analyzed: | 10/07/2015 1544h | | | | | | | | | | |
| Test Code: 200.8-DIS | | Date Prepared: | 09/28/2015 1714h | | | | | | | | | | |
| Cobalt | 0.199 | mg/L | E200.8 | 0.0000434 | 0.00400 | 0.2000 | 0.0000835 | 99.3 | 75 - 125 | | | | |
| Copper | 0.202 | mg/L | E200.8 | 0.000692 | 0.00200 | 0.2000 | 0.00208 | 100 | 75 - 125 | | | | |
| Lead | 0.194 | mg/L | E200.8 | 0.000264 | 0.00200 | 0.2000 | 0.000455 | 96.6 | 75 - 125 | | | | |
| Manganese | 0.201 | mg/L | E200.8 | 0.00153 | 0.00200 | 0.2000 | 0 | 100 | 75 - 125 | | | | |
| Molybdenum | 0.200 | mg/L | E200.8 | 0.000206 | 0.00200 | 0.2000 | 0.00179 | 99.3 | 75 - 125 | | | | |
| Nickel | 0.200 | mg/L | E200.8 | 0.000754 | 0.00200 | 0.2000 | 0 | 100 | 75 - 125 | | | | |
| Selenium | 0.190 | mg/L | E200.8 | 0.0000634 | 0.00200 | 0.2000 | 0.000699 | 94.5 | 75 - 125 | | | | |
| Silver | 0.185 | mg/L | E200.8 | 0.0000244 | 0.00200 | 0.2000 | 0.000027 | 92.5 | 75 - 125 | | | | |
| Thallium | 0.191 | mg/L | E200.8 | 0.0000242 | 0.00200 | 0.2000 | 0 | 95.3 | 75 - 125 | | | | |
| Vanadium | 0.210 | mg/L | E200.8 | 0.000438 | 0.00440 | 0.2000 | 0.00331 | 103 | 75 - 125 | | | | |
| Zinc | 0.999 | mg/L | E200.8 | 0.00476 | 0.00500 | 1.000 | 0 | 99.9 | 75 - 125 | | | | |
| Lab Sample ID: 1509529-002AMS | | Date Analyzed: | 10/06/2015 2115h | | | | | | | | | | |
| Test Code: 200.8-W | | Date Prepared: | 09/28/2015 1927h | | | | | | | | | | |
| Antimony | 0.176 | mg/L | E200.8 | 0.0000366 | 0.00200 | 0.2000 | 0.000612 | 87.7 | 75 - 125 | | | | |
| Arsenic | 0.212 | mg/L | E200.8 | 0.0000920 | 0.00200 | 0.2000 | 0.00178 | 105 | 75 - 125 | | | | |
| Barium | 0.314 | mg/L | E200.8 | 0.000538 | 0.00200 | 0.2000 | 0.114 | 99.8 | 75 - 125 | | | | |
| Beryllium | 0.199 | mg/L | E200.8 | 0.0000288 | 0.00200 | 0.2000 | 0.000151 | 99.5 | 75 - 125 | | | | |
| Cadmium | 0.198 | mg/L | E200.8 | 0.000193 | 0.000500 | 0.2000 | 0 | 99.1 | 75 - 125 | | | | |
| Chromium | 0.202 | mg/L | E200.8 | 0.00154 | 0.00200 | 0.2000 | 0 | 101 | 75 - 125 | | | | |
| Cobalt | 0.197 | mg/L | E200.8 | 0.0000434 | 0.00400 | 0.2000 | 0.000921 | 98.1 | 75 - 125 | | | | |
| Copper | 0.200 | mg/L | E200.8 | 0.000692 | 0.00200 | 0.2000 | 0.00332 | 98.4 | 75 - 125 | | | | |
| Lead | 0.196 | mg/L | E200.8 | 0.000264 | 0.00200 | 0.2000 | 0.00215 | 97.1 | 75 - 125 | | | | |
| Manganese | 0.268 | mg/L | E200.8 | 0.00153 | 0.00200 | 0.2000 | 0.0678 | 100 | 75 - 125 | | | | |
| Molybdenum | 0.204 | mg/L | E200.8 | 0.000206 | 0.00200 | 0.2000 | 0.00159 | 101 | 75 - 125 | | | | |
| Nickel | 0.198 | mg/L | E200.8 | 0.000754 | 0.00200 | 0.2000 | 0.00187 | 98.2 | 75 - 125 | | | | |
| Selenium | 0.201 | mg/L | E200.8 | 0.0000634 | 0.00200 | 0.2000 | 0.000583 | 100 | 75 - 125 | | | | |
| Silver | 0.177 | mg/L | E200.8 | 0.0000244 | 0.00200 | 0.2000 | 0.0000294 | 88.5 | 75 - 125 | | | | |
| Thallium | 0.192 | mg/L | E200.8 | 0.0000242 | 0.00200 | 0.2000 | 0.0000364 | 96.2 | 75 - 125 | | | | |



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: MS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------------|------------------|-----------|---------|----------|-----------------|---------------|-------------------|-------|----------|--------------|-------|-----------|------|
| Lab Sample ID: 1509529-002AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/06/2015 2115h | | | | | | | | | | | | |
| Test Code: | 200.8-W | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1927h | | | | | | | | | | | | |
| Vanadium | 0.209 | mg/L | E200.8 | 0.000438 | 0.00440 | 0.2000 | 0.00515 | 102 | 75 - 125 | | | | |
| Zinc | 1.02 | mg/L | E200.8 | 0.00476 | 0.00500 | 1.000 | 0.0105 | 101 | 75 - 125 | | | | |
| Lab Sample ID: 1509529-004AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/08/2015 1015h | | | | | | | | | | | | |
| Test Code: | 6010C-S | | | | | | | | | | | | |
| Date Prepared: | 10/02/2015 1636h | | | | | | | | | | | | |
| Aluminum | 6,700 | mg/kg-dry | SW6010C | 23.3 | 136 | 135.5 | 6350 | 261 | 75 - 125 | | | | 2 |
| Iron | 5,460 | mg/kg-dry | SW6010C | 15.4 | 67.8 | 135.5 | 5900 | -327 | 75 - 125 | | | | 2 |
| Lab Sample ID: 1509529-004AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/08/2015 1104h | | | | | | | | | | | | |
| Test Code: | 6010C-S | | | | | | | | | | | | |
| Date Prepared: | 10/02/2015 1636h | | | | | | | | | | | | |
| Magnesium | 3,130 | mg/kg-dry | SW6010C | 14.2 | 136 | 1,355 | 1970 | 85.9 | 75 - 125 | | | | |
| Lab Sample ID: 1509529-004AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/13/2015 1642h | | | | | | | | | | | | |
| Test Code: | 6010C-S | | | | | | | | | | | | |
| Date Prepared: | 10/13/2015 1500h | | | | | | | | | | | | |
| Calcium | 7,780 | mg/kg-dry | SW6010C | 29.8 | 1,260 | 1,256 | 8150 | -29.5 | 75 - 125 | | | | 2 |
| Potassium | 2,430 | mg/kg-dry | SW6010C | 255 | 1,260 | 1,256 | 1300 | 90.0 | 75 - 125 | | | | |
| Lab Sample ID: 1509529-004AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/13/2015 1738h | | | | | | | | | | | | |
| Test Code: | 6010C-S | | | | | | | | | | | | |
| Date Prepared: | 10/13/2015 1500h | | | | | | | | | | | | |
| Sodium | 1,400 | mg/kg-dry | SW6010C | 9.68 | 126 | 1,256 | 193 | 96.2 | 75 - 125 | | | | |
| Lab Sample ID: 1509529-004AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/05/2015 1145h | | | | | | | | | | | | |
| Test Code: | 6020-S | | | | | | | | | | | | |
| Date Prepared: | 10/02/2015 1636h | | | | | | | | | | | | |
| Antimony | 27.0 | mg/kg-dry | SW6020A | 0.394 | 4.34 | 27.10 | 0 | 99.7 | 75 - 125 | | | | |
| Arsenic | 29.7 | mg/kg-dry | SW6020A | 0.0878 | 2.71 | 27.10 | 2.26 | 101 | 75 - 125 | | | | |
| Barium | 280 | mg/kg-dry | SW6020A | 2.93 | 4.88 | 27.10 | 411 | -482 | 75 - 125 | | | | 2 |
| Beryllium | 27.6 | mg/kg-dry | SW6020A | 0.00645 | 2.17 | 27.10 | 0.272 | 101 | 75 - 125 | | | | |
| Cadmium | 26.8 | mg/kg-dry | SW6020A | 0.0183 | 0.921 | 27.10 | 0.112 | 98.6 | 75 - 125 | | | | |
| Chromium | 32.1 | mg/kg-dry | SW6020A | 2.63 | 10.8 | 27.10 | 5.61 | 97.9 | 75 - 125 | | | | |
| Cobalt | 28.0 | mg/kg-dry | SW6020A | 0.165 | 1.46 | 27.10 | 2.15 | 95.3 | 75 - 125 | | | | |



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: MS

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|--------------------------------------|------------------|-----------|---------|------------|-----------------|---------------|-------------------|------|----------|--------------|-------|-----------|------|
| Lab Sample ID: 1509529-004AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/05/2015 1145h | | | | | | | | | | | | |
| Test Code: | 6020-S | | | | | | | | | | | | |
| Date Prepared: | 10/02/2015 1636h | | | | | | | | | | | | |
| Copper | 29.1 | mg/kg-dry | SW6020A | 1.66 | 16.8 | 27.10 | 3.11 | 95.8 | 75 - 125 | | | | |
| Lead | 30.9 | mg/kg-dry | SW6020A | 3.25 | 7.05 | 27.10 | 4.3 | 98.1 | 75 - 125 | | | | |
| Manganese | 201 | mg/kg-dry | SW6020A | 0.726 | 4.34 | 27.10 | 169 | 118 | 75 - 125 | | | | |
| Molybdenum | 27.3 | mg/kg-dry | SW6020A | 0.386 | 21.7 | 27.10 | 0 | 101 | 75 - 125 | | | | |
| Nickel | 29.5 | mg/kg-dry | SW6020A | 2.37 | 21.7 | 27.10 | 3.44 | 96.1 | 75 - 125 | | | | |
| Selenium | 26.3 | mg/kg-dry | SW6020A | 0.591 | 9.21 | 27.10 | 0 | 97.0 | 75 - 125 | | | | |
| Silver | 26.2 | mg/kg-dry | SW6020A | 0.0243 | 1.63 | 27.10 | 0 | 96.6 | 75 - 125 | | | | |
| Thallium | 26.7 | mg/kg-dry | SW6020A | 0.00547 | 4.34 | 27.10 | 0.0741 | 98.1 | 75 - 125 | | | | |
| Vanadium | 40.4 | mg/kg-dry | SW6020A | 0.558 | 10.8 | 27.10 | 14.6 | 95.5 | 75 - 125 | | | | |
| Zinc | 147 | mg/kg-dry | SW6020A | 5.47 | 54.2 | 135.5 | 18.4 | 94.9 | 75 - 125 | | | | |
| Lab Sample ID: 1509529-001AMS | | | | | | | | | | | | | |
| Date Analyzed: | 09/28/2015 829h | | | | | | | | | | | | |
| Test Code: | HG-DW-245.1 | | | | | | | | | | | | |
| Date Prepared: | 09/27/2015 1200h | | | | | | | | | | | | |
| Mercury | 0.00344 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 103 | 80 - 120 | | | | |
| Lab Sample ID: 1509529-001BMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/06/2015 1253h | | | | | | | | | | | | |
| Test Code: | HG-DW-DIS-245.1 | | | | | | | | | | | | |
| Date Prepared: | 10/02/2015 1630h | | | | | | | | | | | | |
| Mercury | 0.00343 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 103 | 85 - 115 | | | | |
| Lab Sample ID: 1509548-001BMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/06/2015 1306h | | | | | | | | | | | | |
| Test Code: | HG-DW-DIS-245.1 | | | | | | | | | | | | |
| Date Prepared: | 10/02/2015 1630h | | | | | | | | | | | | |
| Mercury | 0.00346 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 104 | 85 - 115 | | | | |
| Lab Sample ID: 1509529-004AMS | | | | | | | | | | | | | |
| Date Analyzed: | 10/01/2015 858h | | | | | | | | | | | | |
| Test Code: | HG-S-7471B | | | | | | | | | | | | |
| Date Prepared: | 09/30/2015 1955h | | | | | | | | | | | | |
| Mercury | 0.520 | mg/kg-dry | SW7471B | 0.00158 | 0.0469 | 0.4686 | 0.0019 | 111 | 80 - 120 | | | | |

¹ - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

² - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: MSD

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------------|------------------|-------|--------|-----------|-----------------|---------------|-------------------|------|----------|--------------|--------|-----------|------|
| Lab Sample ID: 1509529-001BMSD | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1038h | | | | | | | | | | | | |
| Test Code: | 200.7-DIS | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1711h | | | | | | | | | | | | |
| Calcium | 82.1 | mg/L | E200.7 | 0.401 | 10.0 | 10.00 | 74.2 | 79.4 | 70 - 130 | 83.1 | 1.21 | 20 | |
| Sodium | 52.8 | mg/L | E200.7 | 0.330 | 10.0 | 10.00 | 43.4 | 94.2 | 70 - 130 | 53.9 | 1.96 | 20 | |
| Lab Sample ID: 1509529-001BMSD | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1056h | | | | | | | | | | | | |
| Test Code: | 200.7-DIS | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1711h | | | | | | | | | | | | |
| Aluminum | 1.03 | mg/L | E200.7 | 0.0237 | 0.100 | 1.000 | 0 | 103 | 70 - 130 | 1.07 | 3.55 | 20 | |
| Iron | 0.987 | mg/L | E200.7 | 0.0767 | 0.100 | 1.000 | 0 | 98.7 | 70 - 130 | 1.03 | 3.77 | 20 | |
| Magnesium | 27.3 | mg/L | E200.7 | 0.0294 | 1.00 | 10.00 | 18.3 | 89.9 | 70 - 130 | 28.5 | 4.49 | 20 | |
| Potassium | 13.1 | mg/L | E200.7 | 0.247 | 1.00 | 10.00 | 3.11 | 99.7 | 70 - 130 | 13.5 | 3.36 | 20 | |
| Lab Sample ID: 1509529-002AMSD | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1142h | | | | | | | | | | | | |
| Test Code: | 200.7-W | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1926h | | | | | | | | | | | | |
| Calcium | 84.0 | mg/L | E200.7 | 0.401 | 10.0 | 10.00 | 71.2 | 128 | 70 - 130 | 82.4 | 1.92 | 20 | |
| Sodium | 51.7 | mg/L | E200.7 | 0.330 | 10.0 | 10.00 | 40.1 | 116 | 70 - 130 | 50.2 | 2.94 | 20 | |
| Lab Sample ID: 1509529-002AMSD | | | | | | | | | | | | | |
| Date Analyzed: | 09/29/2015 1200h | | | | | | | | | | | | |
| Test Code: | 200.7-W | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1926h | | | | | | | | | | | | |
| Aluminum | 4.15 | mg/L | E200.7 | 0.0237 | 0.100 | 1.000 | 1.72 | 243 | 70 - 130 | 4.21 | 1.44 | 20 | 1 |
| Iron | 3.05 | mg/L | E200.7 | 0.0767 | 0.100 | 1.000 | 1.68 | 137 | 70 - 130 | 3.11 | 1.95 | 20 | 1 |
| Magnesium | 28.0 | mg/L | E200.7 | 0.0294 | 1.00 | 10.00 | 17.2 | 108 | 70 - 130 | 28.5 | 1.77 | 20 | |
| Potassium | 13.7 | mg/L | E200.7 | 0.247 | 1.00 | 10.00 | 3.21 | 105 | 70 - 130 | 13.7 | 0 | 20 | |
| Lab Sample ID: 1509529-001BMSD | | | | | | | | | | | | | |
| Date Analyzed: | 10/07/2015 1547h | | | | | | | | | | | | |
| Test Code: | 200.8-DIS | | | | | | | | | | | | |
| Date Prepared: | 09/28/2015 1714h | | | | | | | | | | | | |
| Antimony | 0.187 | mg/L | E200.8 | 0.0000366 | 0.00200 | 0.2000 | 0.000354 | 93.2 | 75 - 125 | 0.187 | 0.250 | 20 | |
| Arsenic | 0.200 | mg/L | E200.8 | 0.0000920 | 0.00200 | 0.2000 | 0.00139 | 99.3 | 75 - 125 | 0.2 | 0.0816 | 20 | |
| Barium | 0.276 | mg/L | E200.8 | 0.000538 | 0.00200 | 0.2000 | 0.0901 | 92.9 | 75 - 125 | 0.278 | 0.711 | 20 | |
| Beryllium | 0.193 | mg/L | E200.8 | 0.0000288 | 0.00200 | 0.2000 | 0 | 96.6 | 75 - 125 | 0.194 | 0.570 | 20 | |
| Cadmium | 0.189 | mg/L | E200.8 | 0.000193 | 0.000500 | 0.2000 | 0 | 94.6 | 75 - 125 | 0.189 | 0.0870 | 20 | |
| Chromium | 0.205 | mg/L | E200.8 | 0.00154 | 0.00200 | 0.2000 | 0 | 102 | 75 - 125 | 0.204 | 0.256 | 20 | |



3440 South 700 West
Salt Lake City, UT 84119

Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: MSD

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------------|--------|----------------|------------------|-----------|-----------------|---------------|-------------------|------|----------|--------------|--------|-----------|------|
| Lab Sample ID: 1509529-001BMSD | | Date Analyzed: | 10/07/2015 1547h | | | | | | | | | | |
| Test Code: 200.8-DIS | | Date Prepared: | 09/28/2015 1714h | | | | | | | | | | |
| Cobalt | 0.199 | mg/L | E200.8 | 0.0000434 | 0.00400 | 0.2000 | 0.0000835 | 99.5 | 75 - 125 | 0.199 | 0.211 | 20 | |
| Copper | 0.202 | mg/L | E200.8 | 0.000692 | 0.00200 | 0.2000 | 0.00208 | 99.8 | 75 - 125 | 0.202 | 0.251 | 20 | |
| Lead | 0.191 | mg/L | E200.8 | 0.000264 | 0.00200 | 0.2000 | 0.000455 | 95.5 | 75 - 125 | 0.194 | 1.14 | 20 | |
| Manganese | 0.202 | mg/L | E200.8 | 0.00153 | 0.00200 | 0.2000 | 0 | 101 | 75 - 125 | 0.201 | 0.579 | 20 | |
| Molybdenum | 0.200 | mg/L | E200.8 | 0.000206 | 0.00200 | 0.2000 | 0.00179 | 99.0 | 75 - 125 | 0.2 | 0.315 | 20 | |
| Nickel | 0.198 | mg/L | E200.8 | 0.000754 | 0.00200 | 0.2000 | 0 | 99.0 | 75 - 125 | 0.2 | 1.04 | 20 | |
| Selenium | 0.190 | mg/L | E200.8 | 0.0000634 | 0.00200 | 0.2000 | 0.000699 | 94.6 | 75 - 125 | 0.19 | 0.0639 | 20 | |
| Silver | 0.188 | mg/L | E200.8 | 0.0000244 | 0.00200 | 0.2000 | 0.000027 | 93.8 | 75 - 125 | 0.185 | 1.40 | 20 | |
| Thallium | 0.190 | mg/L | E200.8 | 0.0000242 | 0.00200 | 0.2000 | 0 | 94.9 | 75 - 125 | 0.191 | 0.415 | 20 | |
| Vanadium | 0.209 | mg/L | E200.8 | 0.000438 | 0.00440 | 0.2000 | 0.00331 | 103 | 75 - 125 | 0.21 | 0.587 | 20 | |
| Zinc | 0.996 | mg/L | E200.8 | 0.00476 | 0.00500 | 1.000 | 0 | 99.6 | 75 - 125 | 0.999 | 0.294 | 20 | |
| Lab Sample ID: 1509529-002AMSD | | Date Analyzed: | 10/06/2015 2118h | | | | | | | | | | |
| Test Code: 200.8-W | | Date Prepared: | 09/28/2015 1927h | | | | | | | | | | |
| Antimony | 0.181 | mg/L | E200.8 | 0.0000366 | 0.00200 | 0.2000 | 0.000612 | 90.1 | 75 - 125 | 0.176 | 2.62 | 20 | |
| Arsenic | 0.211 | mg/L | E200.8 | 0.0000920 | 0.00200 | 0.2000 | 0.00178 | 105 | 75 - 125 | 0.212 | 0.457 | 20 | |
| Barium | 0.322 | mg/L | E200.8 | 0.000538 | 0.00200 | 0.2000 | 0.114 | 104 | 75 - 125 | 0.314 | 2.60 | 20 | |
| Beryllium | 0.203 | mg/L | E200.8 | 0.0000288 | 0.00200 | 0.2000 | 0.000151 | 101 | 75 - 125 | 0.199 | 1.89 | 20 | |
| Cadmium | 0.202 | mg/L | E200.8 | 0.000193 | 0.000500 | 0.2000 | 0 | 101 | 75 - 125 | 0.198 | 1.68 | 20 | |
| Chromium | 0.204 | mg/L | E200.8 | 0.00154 | 0.00200 | 0.2000 | 0 | 102 | 75 - 125 | 0.202 | 1.00 | 20 | |
| Cobalt | 0.199 | mg/L | E200.8 | 0.0000434 | 0.00400 | 0.2000 | 0.000921 | 98.8 | 75 - 125 | 0.197 | 0.715 | 20 | |
| Copper | 0.203 | mg/L | E200.8 | 0.000692 | 0.00200 | 0.2000 | 0.00332 | 99.8 | 75 - 125 | 0.2 | 1.40 | 20 | |
| Lead | 0.200 | mg/L | E200.8 | 0.000264 | 0.00200 | 0.2000 | 0.00215 | 99.2 | 75 - 125 | 0.196 | 2.11 | 20 | |
| Manganese | 0.270 | mg/L | E200.8 | 0.00153 | 0.00200 | 0.2000 | 0.0678 | 101 | 75 - 125 | 0.268 | 0.538 | 20 | |
| Molybdenum | 0.208 | mg/L | E200.8 | 0.000206 | 0.00200 | 0.2000 | 0.00159 | 103 | 75 - 125 | 0.204 | 2.02 | 20 | |
| Nickel | 0.199 | mg/L | E200.8 | 0.000754 | 0.00200 | 0.2000 | 0.00187 | 98.8 | 75 - 125 | 0.198 | 0.555 | 20 | |
| Selenium | 0.200 | mg/L | E200.8 | 0.0000634 | 0.00200 | 0.2000 | 0.000583 | 99.8 | 75 - 125 | 0.201 | 0.495 | 20 | |
| Silver | 0.185 | mg/L | E200.8 | 0.0000244 | 0.00200 | 0.2000 | 0.0000294 | 92.3 | 75 - 125 | 0.177 | 4.28 | 20 | |
| Thallium | 0.197 | mg/L | E200.8 | 0.0000242 | 0.00200 | 0.2000 | 0.0000364 | 98.4 | 75 - 125 | 0.192 | 2.22 | 20 | |



3440 South 700 West
Salt Lake City, UT 84119

Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: MSD

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------------|--------|------------------|---------|----------|-----------------|---------------|-------------------|-------|----------|--------------|-------|-----------|------|
| Lab Sample ID: 1509529-002AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/06/2015 2118h | | | | | | | | | | | |
| Test Code: | | 200.8-W | | | | | | | | | | | |
| Date Prepared: | | 09/28/2015 1927h | | | | | | | | | | | |
| Vanadium | 0.210 | mg/L | E200.8 | 0.000438 | 0.00440 | 0.2000 | 0.00515 | 102 | 75 - 125 | 0.209 | 0.397 | 20 | |
| Zinc | 1.02 | mg/L | E200.8 | 0.00476 | 0.00500 | 1.000 | 0.0105 | 101 | 75 - 125 | 1.02 | 0.591 | 20 | |
| Lab Sample ID: 1509529-004AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/08/2015 1025h | | | | | | | | | | | |
| Test Code: | | 6010C-S | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1636h | | | | | | | | | | | |
| Aluminum | 6,620 | mg/kg-dry | SW6010C | 22.9 | 133 | 133.1 | 6350 | 206 | 75 - 125 | 6700 | 1.20 | 20 | 2 |
| Iron | 5,990 | mg/kg-dry | SW6010C | 15.2 | 66.5 | 133.1 | 5900 | 67.1 | 75 - 125 | 5460 | 9.29 | 20 | 2 |
| Lab Sample ID: 1509529-004AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/08/2015 1106h | | | | | | | | | | | |
| Test Code: | | 6010C-S | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1636h | | | | | | | | | | | |
| Magnesium | 3,150 | mg/kg-dry | SW6010C | 14.0 | 133 | 1,331 | 1970 | 88.7 | 75 - 125 | 3130 | 0.537 | 20 | |
| Lab Sample ID: 1509529-004AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/13/2015 1644h | | | | | | | | | | | |
| Test Code: | | 6010C-S | | | | | | | | | | | |
| Date Prepared: | | 10/13/2015 1500h | | | | | | | | | | | |
| Calcium | 7,270 | mg/kg-dry | SW6010C | 29.7 | 1,250 | 1,253 | 8150 | -70.0 | 75 - 125 | 7780 | 6.73 | 20 | 2 |
| Potassium | 2,460 | mg/kg-dry | SW6010C | 254 | 1,250 | 1,253 | 1300 | 92.1 | 75 - 125 | 2430 | 0.998 | 20 | |
| Lab Sample ID: 1509529-004AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/13/2015 1740h | | | | | | | | | | | |
| Test Code: | | 6010C-S | | | | | | | | | | | |
| Date Prepared: | | 10/13/2015 1500h | | | | | | | | | | | |
| Sodium | 1,460 | mg/kg-dry | SW6010C | 9.66 | 125 | 1,253 | 193 | 101 | 75 - 125 | 1400 | 4.36 | 20 | |
| Lab Sample ID: 1509529-004AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/05/2015 1148h | | | | | | | | | | | |
| Test Code: | | 6020-S | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1636h | | | | | | | | | | | |
| Antimony | 26.2 | mg/kg-dry | SW6020A | 0.387 | 4.26 | 26.62 | 0 | 98.3 | 75 - 125 | 27 | 3.29 | 20 | |
| Arsenic | 28.6 | mg/kg-dry | SW6020A | 0.0862 | 2.66 | 26.62 | 2.26 | 99.1 | 75 - 125 | 29.7 | 3.73 | 20 | |
| Barium | 155 | mg/kg-dry | SW6020A | 2.88 | 4.79 | 26.62 | 411 | -959 | 75 - 125 | 280 | 57.2 | 20 | 2 |
| Beryllium | 26.7 | mg/kg-dry | SW6020A | 0.00633 | 2.13 | 26.62 | 0.272 | 99.2 | 75 - 125 | 27.6 | 3.42 | 20 | |
| Cadmium | 26.0 | mg/kg-dry | SW6020A | 0.0179 | 0.905 | 26.62 | 0.112 | 97.1 | 75 - 125 | 26.8 | 3.26 | 20 | |
| Chromium | 30.7 | mg/kg-dry | SW6020A | 2.59 | 10.6 | 26.62 | 5.61 | 94.3 | 75 - 125 | 32.1 | 4.54 | 20 | |
| Cobalt | 27.6 | mg/kg-dry | SW6020A | 0.162 | 1.44 | 26.62 | 2.15 | 95.7 | 75 - 125 | 28 | 1.35 | 20 | |



3440 South 700 West
Salt Lake City, UT 84119

Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1509529
Project: Gold King Mine Spill / 01255.1.016.03

Contact: Jim Harris
Dept: ME
QC Type: MSD

| Analyte | Result | Units | Method | MDL | Reporting Limit | Amount Spiked | Spike Ref. Amount | %REC | Limits | RPD Ref. Amt | % RPD | RPD Limit | Qual |
|---------------------------------------|---------|------------------|---------|------------|-----------------|---------------|-------------------|------|----------|--------------|--------|-----------|------|
| Lab Sample ID: 1509529-004AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/05/2015 1148h | | | | | | | | | | | |
| Test Code: | | 6020-S | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1636h | | | | | | | | | | | |
| Copper | 28.7 | mg/kg-dry | SW6020A | 1.63 | 16.5 | 26.62 | 3.11 | 96.1 | 75 - 125 | 29.1 | 1.25 | 20 | |
| Lead | 30.9 | mg/kg-dry | SW6020A | 3.19 | 6.92 | 26.62 | 4.3 | 100 | 75 - 125 | 30.9 | 0.0654 | 20 | |
| Manganese | 218 | mg/kg-dry | SW6020A | 0.713 | 4.26 | 26.62 | 169 | 185 | 75 - 125 | 201 | 8.22 | 20 | 2 |
| Molybdenum | 26.6 | mg/kg-dry | SW6020A | 0.379 | 21.3 | 26.62 | 0 | 99.8 | 75 - 125 | 27.3 | 2.70 | 20 | |
| Nickel | 28.5 | mg/kg-dry | SW6020A | 2.33 | 21.3 | 26.62 | 3.44 | 94.3 | 75 - 125 | 29.5 | 3.30 | 20 | |
| Selenium | 25.0 | mg/kg-dry | SW6020A | 0.580 | 9.05 | 26.62 | 0 | 93.9 | 75 - 125 | 26.3 | 5.01 | 20 | |
| Silver | 25.5 | mg/kg-dry | SW6020A | 0.0238 | 1.60 | 26.62 | 0 | 95.7 | 75 - 125 | 26.2 | 2.81 | 20 | |
| Thallium | 25.9 | mg/kg-dry | SW6020A | 0.00538 | 4.26 | 26.62 | 0.0741 | 97.1 | 75 - 125 | 26.7 | 2.83 | 20 | |
| Vanadium | 39.4 | mg/kg-dry | SW6020A | 0.548 | 10.6 | 26.62 | 14.6 | 93.3 | 75 - 125 | 40.4 | 2.62 | 20 | |
| Zinc | 151 | mg/kg-dry | SW6020A | 5.38 | 53.2 | 133.1 | 18.4 | 99.9 | 75 - 125 | 147 | 2.93 | 20 | |
| Lab Sample ID: 1509529-001AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 09/28/2015 831h | | | | | | | | | | | |
| Test Code: | | HG-DW-245.1 | | | | | | | | | | | |
| Date Prepared: | | 09/27/2015 1200h | | | | | | | | | | | |
| Mercury | 0.00340 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 102 | 80 - 120 | 0.00344 | 1.02 | 20 | |
| Lab Sample ID: 1509529-001BMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/06/2015 1255h | | | | | | | | | | | |
| Test Code: | | HG-DW-DIS-245.1 | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1630h | | | | | | | | | | | |
| Mercury | 0.00350 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 105 | 85 - 115 | 0.00343 | 2.02 | 20 | |
| Lab Sample ID: 1509548-001BMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/06/2015 1308h | | | | | | | | | | | |
| Test Code: | | HG-DW-DIS-245.1 | | | | | | | | | | | |
| Date Prepared: | | 10/02/2015 1630h | | | | | | | | | | | |
| Mercury | 0.00340 | mg/L | E245.1 | 0.00000892 | 0.000150 | 0.003330 | 0 | 102 | 85 - 115 | 0.00347 | 1.99 | 20 | |
| Lab Sample ID: 1509529-004AMSD | | | | | | | | | | | | | |
| Date Analyzed: | | 10/01/2015 900h | | | | | | | | | | | |
| Test Code: | | HG-S-7471B | | | | | | | | | | | |
| Date Prepared: | | 09/30/2015 1955h | | | | | | | | | | | |
| Mercury | 0.509 | mg/kg-dry | SW7471B | 0.00158 | 0.0469 | 0.4686 | 0.0019 | 108 | 80 - 120 | 0.52 | 2.19 | 20 | |

¹ - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

² - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

American West Analytical Laboratories

D

WORK ORDER Summary

Work Order: **1509529** Page 1 of 3

Client: Utah Division of Water Quality

Due Date: 10/9/2015

Client ID: UTD200

Contact: Jim Harris

Project: Gold King Mine Spill / 01255.1.016.03

QC Level: II+ MDL

WO Type: Standard

Comments: Email to lenoras@utah.gov. / QC 2+ / email Techlaw Group and Utah DEQ Group.;

| Sample ID | Client Sample ID | Collected Date | Received Date | Test Code | Matrix | Sel Storage | | | |
|--------------|------------------|-----------------|-----------------|---|---------|---------------|---|--|--|
| 1509529-001A | GK01-SW-01 | 9/22/2015 0956h | 9/25/2015 1400h | 200.7-W | Aqueous | DF-Metals | 1 | | |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | | | |
| | | | | 200.7-W-PR | | DF-Metals | | | |
| | | | | 200.8-W | | DF-Metals | | | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | | | |
| | | | | 200.8-W-PR | | DF-Metals | | | |
| | | | | HG-DW-245.1 | | DF-Metals | | | |
| 1509529-001B | | | | HG-DW-PR | | DF-Metals | | | |
| | | | | 200.7-DIS | | DF-Dis Metals | | | |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | | | |
| | | | | 200.7-DIS-PR | | DF-Dis Metals | | | |
| | | | | 200.8-DIS | | DF-Dis Metals | | | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | | | |
| | | | | 200.8-DIS-PR | | DF-Dis Metals | | | |
| 1509529-002A | GK02-SW-02 | 9/22/2015 1355h | 9/25/2015 1400h | 200.7-W | Aqueous | DF-Metals | 1 | | |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | | | |
| | | | | 200.7-W-PR | | DF-Metals | | | |
| | | | | 200.8-W | | DF-Metals | | | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | | | |
| | | | | 200.8-W-PR | | DF-Metals | | | |
| | | | | HG-DW-245.1 | | DF-Metals | | | |
| 1509529-002B | | | | HG-DW-PR | | DF-Metals | | | |
| | | | | 200.7-DIS | | DF-Dis Metals | | | |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | | | |
| | | | | 200.7-DIS-PR | | DF-Dis Metals | | | |
| | | | | 200.8-DIS | | DF-Dis Metals | | | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | | | |
| | | | | | | | | | |

WORK ORDER Summary

Work Order: **1509529** Page 2 of 3

Client: Utah Division of Water Quality

Due Date: 10/9/2015

| Sample ID | Client Sample ID | Collected Date | Received Date | Test Code | Matrix | Sel | Storage |
|--------------|------------------|-----------------|-----------------|---|---------|---------------|-----------------|
| 1509529-002B | GK02-SW-02 | 9/22/2015 1355h | 9/25/2015 1400h | 200.8-DIS-PR | Aqueous | | DF-Dis Metals 1 |
| | | | | HG-DW-DIS-245.1 | | DF-Dis Metals | |
| | | | | HG-DW-DIS-PR | | DF-Dis Metals | |
| 1509529-003A | GK03-SW-03 | 9/22/2015 1730h | 9/25/2015 1400h | 200.7-W | Aqueous | | DF-Metals 1 |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | |
| | | | | 200.7-W-PR | | DF-Metals | |
| | | | | 200.8-W | | DF-Metals | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | |
| | | | | 200.8-W-PR | | DF-Metals | |
| | | | | HG-DW-245.1 | | DF-Metals | |
| 1509529-003B | | | | HG-DW-PR | | | DF-Metals |
| | | | | 200.7-DIS | | DF-Dis Metals | |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | |
| | | | | 200.7-DIS-PR | | DF-Dis Metals | |
| | | | | 200.8-DIS | | DF-Dis Metals | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | |
| | | | | 200.8-DIS-PR | | DF-Dis Metals | |
| 1509529-004A | GK01-SO-01 | 9/22/2015 0956h | 9/25/2015 1400h | 3051A-ICPMS-PR | Soil | | DF-Metals 1 |
| | | | | 6010C-S | | DF-Metals | |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | |
| | | | | 6020-S | | DF-Metals | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | |
| | | | | HG-S-7471B | | DF-Metals | |
| | | | | HG-S-PR-B | | DF-Metals | |
| PMOIST | DF-Metals | | | | | | |
| 1509529-005A | GK02-SO-02 | 9/22/2015 1359h | 9/25/2015 1400h | 3051A-ICPMS-PR | Soil | | DF-Metals 1 |
| | | | | 6010C-S | | DF-Metals | |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | |
| | | | | 6020-S | | DF-Metals | |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | |
| | | | | HG-S-7471B | | DF-Metals | |
| | | | | HG-S-PR-B | | DF-Metals | |
| PMOIST | DF-Metals | | | | | | |

WORK ORDER Summary

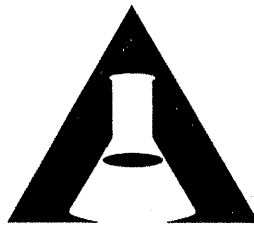
Work Order: **1509529**

Page 3 of 3

Client: Utah Division of Water Quality

Due Date: 10/9/2015

| Sample ID | Client Sample ID | Collected Date | Received Date | Test Code | Matrix | Sel | Storage |
|--------------|------------------|-----------------|-----------------|---|--------|-----|-------------|
| 1509529-006A | GK03-SO-03 | 9/22/2015 1755h | 9/25/2015 1400h | 3051A-ICPMS-PR | Soil | | DF-Metals 1 |
| | | | | 6010C-S | | | DF-Metals |
| | | | | <i>6 SEL Analytes: AL CA FE MG K NA</i> | | | |
| | | | | 6020-S | | | DF-Metals |
| | | | | <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i> | | | |
| | | | | HG-S-7471B | | | DF-Metals |
| | | | | HG-S-PR-B | | | DF-Metals |
| | | | | PMOIST | | | DF-Metals |



American West Analytical Laboratories

3440 S. 700 W. Salt Lake City, UT 84119
Phone # (801) 263-8686 Toll Free # (888) 263-8686
Fax # (801) 263-8687 Email awal@awal-labs.com

State of Utah
www.awal-labs.com

per Brad Martin

CHAIN OF CUSTODY

1509529

AWAL Lab Sample Set #
Page 1 of 2

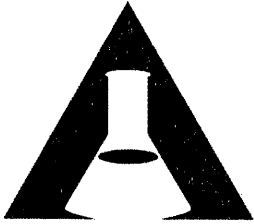
All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

| | | | | | | | |
|--|------------------------|---|------|--|---|---|---|
| QC Level: 1 2 <u>2+</u> 3 3+ <u>4</u> | | Turn Around Time: 1 2 3 4 5 <u>Std</u> | | Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due. | | Due Date: | |
| # of Containers Sample Matrix Total Metals (200.7/200.8) Dissolved (Field Filtered) | | | | <input checked="" type="checkbox"/> Report down to the MDL Include EDD: <input type="checkbox"/> Lab Filter for: | | Laboratory Use Only Samples Were: <u>FedEx</u> 1 Shipped or hand delivered 2 Ambient or Chilled 3 Temperature <u>43</u> °C 4 Received Broken/Leaking (Improperly Sealed) Y <input type="checkbox"/> N <input checked="" type="checkbox"/> 5 Properly Preserved Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Checked at bench 6 Received Within Holding Times Y <input type="checkbox"/> N <input checked="" type="checkbox"/> | |
| | | | | <input checked="" type="checkbox"/> Field Filtered For: <u>Pis Metals</u> | | For Compliance With: <input type="checkbox"/> NELAP <input type="checkbox"/> RCRA <input type="checkbox"/> CWA <input type="checkbox"/> SDWA <input type="checkbox"/> ELAP / A2LA <input type="checkbox"/> NLLAP <input type="checkbox"/> Non-Compliance <input type="checkbox"/> Other: | |
| Sample ID: | | Date Sampled: | | Time Sampled: | | # of Containers: | |
| 1 | G-K01-SW-01 | 9/22/15 | 0956 | 2 | W | X | X |
| 2 | G-K02-SW-02 | 9/22/15 | 1355 | 2 | W | X | X |
| 3 | G-K03-SW-03 | 9/22/15 | 1730 | 2 | W | X | X |
| 4 | G-K04-SW-04 | 9/23/15 | 1830 | 2 | W | X | X |
| 5 | G-K05-SW-05 | 9/23/15 | 1345 | 2 | W | X | X |
| 6 | G-K06-SW-06 | 9/23/15 | 1040 | 2 | W | X | X |
| 7 | G-K08-SW-08 | | | | | | |
| 8 | G-K01-SW-08 | 9/22/15 | 0956 | 2 | W | X | X |
| 9 | G-K01-SD-01 | 9/22/15 | 0956 | 1 | S | X | X |
| 10 | G-K02-SD-02 | 9/22/15 | 1359 | 1 | S | X | X |
| 11 | G-K03-SD-03 | 9/22/15 | 1755 | 1 | S | X | X |
| 12 | G-K04-SD-04 | 9/23/15 | 1835 | 1 | S | X | X |

Client: Tech Law, Inc - Brad Martin
 Address: 195 North 1950 West
Salt Lake City, Utah 84114
 Contact: Jim Anvitz (Utah) / Brad Martin (CA)
 Phone #: 801 536 4360 Cell #: 630 697 5407
 Email:
 Project Name: Gold King mine Spill
 Project #: 01255.1.016.03
 PO #:
 Sampler Name: Tech Law Inc

| | | | | |
|-------------------------------|-------|--|----------------------|--|
| Relinquished by: Signature | Date: | Received by: Signature <u>Elena Hajek</u> | Date: <u>9/25/15</u> | Special Instructions: <u>Total All Dissolved Metals include Hg and MO.</u> <u>In two Boxes</u> |
| Print Name: | Time: | Print Name: <u>Elena Hajek</u> | Time: <u>1400</u> | |
| Relinquished by: Signature | Date: | Received by: Signature | Date: | |
| Print Name: | Time: | Print Name: | Time: | |
| Relinquished by: Signature | Date: | Received by: Signature | Date: | |
| Print Name: | Time: | Print Name: | Time: | |
| Relinquished by: Signature | Date: | Received by: Signature | Date: | |
| Print Name: | Time: | Print Name: | Time: | |

only 1 cooler rec., 2nd cooler missing X - samples rec. 9/25/15 eh



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www.awal-labs.com

CHAIN OF CUSTODY

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

1509529
 AWAL Lab Sample Set #
 Page 2 of 2

Client: State of Utah / Tech Law Inc
 Address: 1950 North 1950 West, SLC Utah
 Contact: Jim Harris / Brad Martin 84119
 Phone #: 801 536 4360 Cell #: _____
 Email: _____
 Project Name: Gold King Mine Spill
 Project #: 01255.1.016.03
 PO #: _____
 Sampler Name: Tech Law Inc

| QC Level: | | | | | Turn Around Time: | | | | | Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due. | | | | | Due Date: | | |
|--|---|----|---|----|-------------------|---|---|---|---|---|--|--|--|--|--|--|--|
| 1 | 2 | 2+ | 3 | 3+ | 1 | 2 | 3 | 4 | 5 | Std | | | | | | | |
| # of Containers Sample Matrix <u>Total Metals</u> | | | | | | | | | | <input checked="" type="checkbox"/> Report down to the MDL <input checked="" type="checkbox"/> Include EDD: <input type="checkbox"/> Lab Filter for: <input checked="" type="checkbox"/> Field Filtered For: <u>D's Metals</u> For Compliance With: <input type="checkbox"/> NELAP <input type="checkbox"/> RCRA <input type="checkbox"/> CWA <input type="checkbox"/> SDWA <input type="checkbox"/> ELAP / A2LA <input type="checkbox"/> NLLAP <input type="checkbox"/> Non-Compliance <input type="checkbox"/> Other: Known Hazards & Sample Comments | | | | | Laboratory Use Only | | |
| | | | | | | | | | | | | | | | Samples Were: | | |
| | | | | | | | | | | | | | | | 1 Shipped or hand delivered | | |
| | | | | | | | | | | | | | | | 2 Ambient or Chilled | | |
| | | | | | | | | | | | | | | | 3 Temperature <u>4.3</u> °C | | |
| | | | | | | | | | | | | | | | 4 Received Broken/Leaking (Improperly Sealed) Y N | | |
| | | | | | | | | | | | | | | | 5 Properly Preserved Y N Checked at bench | | |
| | | | | | | | | | | | | | | | 6 Received Within Holding Times Y N | | |
| | | | | | | | | | | | | | | | COC Tape Was: | | |
| | | | | | | | | | | | | | | | 1 Present on Outer Package Y N NA | | |
| | | | | | | | | | | | | | | | 2 Unbroken on Outer Package Y N NA | | |
| | | | | | | | | | | | | | | | 3 Present on Sample Y N NA | | |
| 4 Unbroken on Sample Y N NA | | | | | | | | | | | | | | | | | |
| Discrepancies Between Sample Labels and COC Record? Y N | | | | | | | | | | | | | | | | | |

| | Sample ID: | Date Sampled | Time Sampled | # of Containers | Sample Matrix | 1 | 2 | 2+ | 3 | 3+ | 1 | 2 | 3 | 4 | 5 | Std |
|----|-------------|--------------|--------------|-----------------|---------------|---|---|----|---|----|---|---|---|---|---|-----|
| 1 | G-K05-SD-05 | 9/23/15 | 13:50 | 1 | S | X | | | | | | | | | | |
| 2 | G-K06-SD-06 | 9/23/15 | 10:52 | 1 | S | X | | | | | | | | | | |
| 3 | G-K01-SD-08 | 9/22/15 | 09:56 | 1 | S | X | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |

| | | | | |
|-------------------------------|-------|------------------------------------|----------------------|--|
| Relinquished by: Signature | Date: | Received by: Signature | Date: | Special Instructions: <u>See town Boxes</u> |
| Print Name: | Time: | Print Name: <u>Elma Hayward</u> | Time: <u>1400</u> | |
| Relinquished by: Signature | Date: | Received by: Signature | Date: | |
| Print Name: | Time: | Print Name: | Time: | |
| Relinquished by: Signature | Date: | Received by: Signature | Date: | |
| Print Name: | Time: | Print Name: | Time: | |
| Relinquished by: Signature | Date: | Received by: Signature | Date: | |
| Print Name: | Time: | Print Name: | Time: | |

- > Cadmium
- > Chromium
- > Cobalt
- > Copper
- > Lead
- > Manganese
- > Molybdenum
- > Nickel
- > Silver
- > Selenium
- > Thallium
- > Vandadium
- > Zinc

> We also ran Hardness as both Total and Dissolved. Did you need that done on these as well?

> Let us know.

> Thank you,
> -Rebekah Winkler
> Reporting Coordinator

> American West Analytical Laboratories
> 3440 S. 700 W.
> Salt Lake City, UT 84119
> Tel: (801) 263-8686
> Fax: (801) 263-8687
> email: rebekah@awal-labs.com

> -----Original Message-----

> From: Kyle Gross
> Sent: Friday, August 28, 2015 6:59 AM
> To: CustomerService
> Subject: FW: San Juan River Sample Delivery

> Attached are the COCs for the samples arriving today from Techlaw (Gold King Mine Spill).

> -----Original Message-----

> From: Rohrbaugh, Amanda [<mailto:ARohrbaugh@TechLawInc.com>]
> Sent: Friday, August 28, 2015 6:57 AM
> To: Kyle Gross
> Subject: RE: San Juan River Sample Delivery

> Hi Kyle,

> I've attached a copy of the COC forms (2 pages) for yesterday's sample shipment. Two coolers were sent under 1 FedEx airbill. The COC forms are in a ziplock bag taped into the inside of one of the cooler lids and the special instructions section indicates which samples are in each of the 2 coolers.

> As for the analysis not beginning until Monday, that seems fine to me. The important part is that we get the samples to you at the proper temperature so they can be refrigerated at the lab over the weekend and we won't have any temperature issues. Thanks!

> _____
> From: Rohrbaugh, Amanda
> Sent: Friday, August 28, 2015 5:41 AM

Elona Hayward

From: Rebekah Winkler
Sent: Monday, August 31, 2015 9:34 AM
To: Elona Hayward
Subject: FW: San Juan River Sample Delivery

-----Original Message-----

From: Martin, Bradley [<mailto:BMartin@TechLawInc.com>]
Sent: Friday, August 28, 2015 9:42 PM
To: Rohrbaugh, Amanda
Cc: Rebekah Winkler
Subject: Re: San Juan River Sample Delivery

Yes, whatever you've done for the samples collected by the State last during weeks prior would be appropriate.

Thanks, Brad

> On Aug 28, 2015, at 6:46 PM, Rohrbaugh, Amanda <ARohrbaugh@TechLawInc.com> wrote:

>

> Hi Rebekah,

> I think the metals list below looks good, but I've cc'd my supervisor on this e-mail so he can confirm. I think whatever you've done for the samples collected by the State last during weeks prior would be appropriate for these samples since we were tasked to take over monitoring for them. Brad can you confirm?

>

> Thanks!

>

> From: Rebekah Winkler [Rebekah@awal-labs.com]

> Sent: Friday, August 28, 2015 6:27 AM

> To: Rohrbaugh, Amanda

> Cc: Kyle Gross; Denise Bruun; Elona Hayward; Katie Merenda; Lynn Turner

> Subject: RE: San Juan River Sample Delivery

>

> Amanda,

>

> Can you confirm the metals list? We analyzed the project in the past for both Total and Dissolved:

> Aluminum

> Calcium

> Iron

> Potassium

> Magnesium

> Sodium

>

> Mercury

>

> Antimony

> Arsenic

> Barium

> Beryllium

> To: Kyle Gross
> Subject: RE: San Juan River Sample Delivery
>
> Great. I'll work out the time and let you know as soon as possible.

>

> From: Kyle Gross [kyle@awal-labs.com]
> Sent: Thursday, August 27, 2015 8:17 PM
> To: Rohrbaugh, Amanda
> Subject: RE: San Juan River Sample Delivery

> We can accept them as long as we have a delivery time.

> Kyle

> Sent from my Verizon Wireless 4G LTE smartphone

> ----- Original message -----

> From: "Rohrbaugh, Amanda" <ARohrbaugh@TechLawInc.com>
> Date: 08/27/2015 21:03 (GMT-07:00)
> To: Kyle Gross <kyle@awal-labs.com>
> Subject: San Juan River Sample Delivery

> Hi Kyle,

> We shipped samples from 8/24 through 8/26 this morning for standard overnight delivery, so hopefully they will arrive at the lab tomorrow. We will be returning to Salt Lake City this Saturday 8/29 with samples from 8/27 and 8/28. I was wondering if the lab will accept the delivery of the samples from us directly on Saturday or if we need to ship them via FedEx on Saturday for Monday delivery since the field team will be flying home Saturday night. Please let me know the lab's preferred method so we can make arrangements accordingly. Thanks!

> Amanda Rohrbaugh

Preservation Check Sheet

Sample Set Extension and pH

| Analysis | Preservative | 1 | 2 | 3 | | | | | | | | | | | | | | | |
|-----------------------------------|--------------------------------------|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Ammonia | pH <2 H ₂ SO ₄ | | | | | | | | | | | | | | | | | | |
| COD | pH <2 H ₂ SO ₄ | | | | | | | | | | | | | | | | | | |
| Cyanide | pH >12 NaOH | | | | | | | | | | | | | | | | | | |
| Metals | pH <2 HNO ₃ | yes | yes | yes | | | | | | | | | | | | | | | |
| NO ₂ & NO ₃ | pH <2 H ₂ SO ₄ | | | | | | | | | | | | | | | | | | |
| O & G | pH <2 HCL | | | | | | | | | | | | | | | | | | |
| Phenols | pH <2 H ₂ SO ₄ | | | | | | | | | | | | | | | | | | |
| Sulfide | pH > 9NaOH, Zn Acetate | | | | | | | | | | | | | | | | | | |
| TKN | pH <2 H ₂ SO ₄ | | | | | | | | | | | | | | | | | | |
| T PO ₄ | pH <2 H ₂ SO ₄ | | | | | | | | | | | | | | | | | | |
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- Procedure:
- 1) Pour a small amount of sample in the sample lid
 - 2) Pour sample from Lid gently over wide range pH paper
 - 3) **Do Not** dip the pH paper in the sample bottle or lid
 - 4) If sample is not preserved, properly list its extension and receiving pH in the appropriate column above
 - 5) Flag COC, notify client if requested
 - 6) Place client conversation on COC
 - 7) Samples may be adjusted

Frequency: All samples requiring preservation

- * The sample required additional preservative upon receipt.
- + The sample was received unpreserved.
- ▲ The sample was received unpreserved and therefore preserved upon receipt.
- # The sample pH was unadjustable to a pH < 2 due to the sample matrix.
- The sample pH was unadjustable to a pH > ____ due to the sample matrix interference.