



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

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

RE: Gold King Mine - San Juan River Sampling

Dear Lenora Sullivan:

Lab Set ID: 1508435

American West Analytical Laboratories received sample(s) on 8/21/2015 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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Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-001
Client Sample ID: San Juan R at Mexican Hat US163 Xing (4953000)
Collection Date: 8/18/2015 1155h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1230h	E200.7	0.0237	0.100	17.4	
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.0000366	0.00200	0.00119	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.0000920	0.00200	0.00537	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.000538	0.00200	0.281	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.0000288	0.00200	0.00119	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.000193	0.000500	0.000243	J
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1114h	E200.7	0.401	10.0	86.9	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.00154	0.00200	0.00997	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.0000434	0.00400	0.00633	
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.000692	0.00200	0.0163	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1230h	E200.7	0.0767	0.100	13.0	
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.000264	0.00200	0.0147	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1230h	E200.7	0.0294	1.00	18.0	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.00153	0.00200	0.373	
Mercury	7439-97-6	mg/L	8/25/2015 1700h	8/26/2015 901h	E245.1	0.00000892	0.000150	0.0000250	J
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.000206	0.00200	0.00142	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.000754	0.00200	0.0121	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1230h	E200.7	0.247	1.00	6.27	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.0000634	0.00200	0.000889	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.0000244	0.00200	0.000163	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1230h	E200.7	0.0330	1.00	32.8	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.0000242	0.00200	0.000181	J
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.000438	0.00440	0.0254	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/2/2015 1648h	E200.8	0.00476	0.00500	0.0554	

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

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INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-002
Client Sample ID: San Juan R at Sand Island (4953250)
Collection Date: 8/18/2015 1122h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1232h	E200.7	0.0237	0.100	7.32	¹
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.0000366	0.00200	0.000765	JB ¹
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.0000920	0.00200	0.00334	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.000538	0.00200	0.184	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.0000288	0.00200	0.000535	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1116h	E200.7	0.401	10.0	78.4	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.00154	0.00200	0.00417	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.0000434	0.00400	0.00319	J
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.000692	0.00200	0.0101	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1232h	E200.7	0.0767	0.100	6.24	¹
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.000264	0.00200	0.00824	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1232h	E200.7	0.0294	1.00	15.5	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.00153	0.00200	0.239	
Mercury	7439-97-6	mg/L	8/25/2015 1700h	8/26/2015 906h	E245.1	0.00000892	0.000150	0.0000133	J
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.000206	0.00200	0.00158	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.000754	0.00200	0.00522	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1232h	E200.7	0.247	1.00	4.23	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.0000634	0.00200	0.000721	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.0000244	0.00200	0.0000634	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1232h	E200.7	0.0330	1.00	32.4	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.0000242	0.00200	0.0000399	J
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.000438	0.00440	0.0131	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/2/2015 1652h	E200.8	0.00476	0.00500	0.0323	

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

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QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-003
Client Sample ID: San Juan River at Town of Montezuma (4953990)
Collection Date: 8/18/2015 841h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1239h	E200.7	0.0237	0.100	4.45	
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.0000366	0.00200	0.000783	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.0000920	0.00200	0.00273	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.000538	0.00200	0.131	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.0000288	0.00200	0.000387	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1133h	E200.7	0.401	10.0	71.3	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.00154	0.00200	0.00282	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.0000434	0.00400	0.00207	J
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.000692	0.00200	0.00713	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1239h	E200.7	0.0767	0.100	3.92	
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.000264	0.00200	0.00535	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1239h	E200.7	0.0294	1.00	14.4	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.00153	0.00200	0.162	
Mercury	7439-97-6	mg/L	8/25/2015 1700h	8/26/2015 908h	E245.1	0.00000892	0.000150	0.0000133	J
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.000206	0.00200	0.00173	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.000754	0.00200	0.00339	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1239h	E200.7	0.247	1.00	3.41	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.0000634	0.00200	0.000726	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.0000244	0.00200	0.000124	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1239h	E200.7	0.0330	1.00	32.2	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.0000242	0.00200	0.000109	J
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.000438	0.00440	0.00921	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/2/2015 1708h	E200.8	0.00476	0.00500	0.0205	

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 **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-004
Client Sample ID: San Juan R at US160 Xing in CO (4954000)
Collection Date: 8/18/2015 956h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1241h	E200.7	0.0237	0.100	3.64	
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.0000366	0.00200	0.000201	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.0000920	0.00200	0.00200	J
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.000538	0.00200	0.121	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.0000288	0.00200	0.000244	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1135h	E200.7	0.401	10.0	60.4	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.00154	0.00200	0.00209	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.0000434	0.00400	0.00159	J
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.000692	0.00200	0.00624	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1241h	E200.7	0.0767	0.100	3.30	
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.000264	0.00200	0.00430	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1241h	E200.7	0.0294	1.00	10.9	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.00153	0.00200	0.126	
Mercury	7439-97-6	mg/L	8/25/2015 1700h	8/26/2015 913h	E245.1	0.00000892	0.000150	0.0000100	J
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.000206	0.00200	0.00137	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.000754	0.00200	0.00263	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1241h	E200.7	0.247	1.00	3.06	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.0000634	0.00200	0.000638	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.0000244	0.00200	0.0000420	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1241h	E200.7	0.0330	1.00	29.8	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.000438	0.00440	0.00680	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/3/2015 851h	E200.8	0.00476	0.00500	0.0154	

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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Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-005
Client Sample ID: San Juan R at CH
Collection Date: 8/18/2015 1345h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1243h	E200.7	0.0237	0.100	29.3	
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.0000366	0.00200	0.000307	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.0000920	0.00200	0.00782	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.000538	0.00200	0.570	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.0000288	0.00200	0.00208	
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.000193	0.000500	0.000450	J
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1144h	E200.7	0.401	10.0	113	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.00154	0.00200	0.0153	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.0000434	0.00400	0.0126	
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.000692	0.00200	0.0310	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1243h	E200.7	0.0767	0.100	22.2	
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.000264	0.00200	0.0295	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1243h	E200.7	0.0294	1.00	21.9	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.00153	0.00200	0.749	
Mercury	7439-97-6	mg/L	8/25/2015 1700h	8/26/2015 915h	E245.1	0.00000892	0.000150	0.0000600	J
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.000206	0.00200	0.000684	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.000754	0.00200	0.0199	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1243h	E200.7	0.247	1.00	8.01	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.0000634	0.00200	0.000852	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.0000244	0.00200	0.000152	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1243h	E200.7	0.0330	1.00	36.4	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.0000242	0.00200	0.000295	J
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.000438	0.00440	0.0400	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/3/2015 854h	E200.8	0.00476	0.00500	0.0926	

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

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



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

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-001
Client Sample ID: San Juan R at Mexican Hat US163 Xing (4953000)
Collection Date: 8/18/2015 1155h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 950h	E200.7	0.0237	0.100	0.123	
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.0000366	0.00200	0.00159	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.0000920	0.00200	0.00142	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.000538	0.00200	0.258	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 905h	E200.7	0.401	10.0	65.3	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.0000434	0.00400	0.000137	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.000692	0.00200	0.00305	
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1034h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.000264	0.00200	0.000503	JB
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1034h	E200.7	0.0294	1.00	11.9	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.00153	0.00200	0.00396	
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 946h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.000206	0.00200	0.00209	
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1034h	E200.7	0.247	1.00	3.05	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/3/2015 947h	E200.8	0.0000634	0.00200	0.000603	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.0000244	0.00200	0.0000934	J
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1034h	E200.7	0.0330	1.00	35.8	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.0000242	0.00200	0.0000402	J
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.000438	0.00440	0.00297	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2217h	E200.8	0.00476	0.00500	0.0204	

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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

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:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-002
Client Sample ID: San Juan R at Sand Island (4953250)
Collection Date: 8/18/2015 1122h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 953h	E200.7	0.0237	0.100	< 0.100	U
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.0000366	0.00200	0.000583	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.0000920	0.00200	0.00146	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.000538	0.00200	0.138	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 908h	E200.7	0.401	10.0	66.4	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.0000434	0.00400	0.0000643	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.000692	0.00200	0.00225	
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1036h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.000264	0.00200	0.000382	JB
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1036h	E200.7	0.0294	1.00	12.8	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.00153	0.00200	0.00155	J
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 951h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.000206	0.00200	0.00194	J
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1036h	E200.7	0.247	1.00	2.92	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.0000634	0.00200	0.000570	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1036h	E200.7	0.0330	1.00	36.0	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.000438	0.00440	0.00238	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2220h	E200.8	0.00476	0.00500	0.0123	

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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

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:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-003
Client Sample ID: San Juan River at Town of Montezuma (4953990)
Collection Date: 8/18/2015 841h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 959h	E200.7	0.0237	0.100	0.0246	J
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.0000366	0.00200	0.00102	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.0000920	0.00200	0.00119	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.000538	0.00200	0.197	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.0000288	0.00200	0.0000327	J
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 919h	E200.7	0.401	10.0	62.7	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.0000434	0.00400	0.0000974	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.000692	0.00200	0.00344	
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1043h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.000264	0.00200	0.000316	JB
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1043h	E200.7	0.0294	1.00	12.7	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 953h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.000206	0.00200	0.00207	
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1043h	E200.7	0.247	1.00	2.64	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.0000634	0.00200	0.000629	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.0000244	0.00200	0.000136	J
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1043h	E200.7	0.0330	1.00	35.4	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.0000242	0.00200	0.0000785	J
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.000438	0.00440	0.00229	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2246h	E200.8	0.00476	0.00500	0.0148	

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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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:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-004
Client Sample ID: San Juan R at US160 Xing in CO (4954000)
Collection Date: 8/18/2015 956h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 1001h	E200.7	0.0237	0.100	0.0239	J
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.0000366	0.00200	0.000689	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.0000920	0.00200	0.00131	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.000538	0.00200	0.148	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 921h	E200.7	0.401	10.0	57.5	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.0000434	0.00400	0.0000869	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.000692	0.00200	0.00227	
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1045h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.000264	0.00200	0.000287	JB
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1045h	E200.7	0.0294	1.00	9.82	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 955h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.000206	0.00200	0.00174	J
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1045h	E200.7	0.247	1.00	2.50	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.0000634	0.00200	0.000585	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.0000244	0.00200	0.0000393	J
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1045h	E200.7	0.0330	1.00	33.4	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.000438	0.00440	0.00188	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2250h	E200.8	0.00476	0.00500	0.0123	

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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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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:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-005
Client Sample ID: San Juan R at CH
Collection Date: 8/18/2015 1345h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 1004h	E200.7	0.0237	0.100	0.0532	J
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.0000366	0.00200	0.000552	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.0000920	0.00200	0.00156	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.000538	0.00200	0.279	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 931h	E200.7	0.401	10.0	60.6	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.0000434	0.00400	0.0000792	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.000692	0.00200	0.00262	
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1047h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.000264	0.00200	0.000295	JB
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1047h	E200.7	0.0294	1.00	9.91	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 956h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.000206	0.00200	0.00217	
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1047h	E200.7	0.247	1.00	3.49	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.0000634	0.00200	0.000637	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.0000244	0.00200	0.0000427	J
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1047h	E200.7	0.0330	1.00	38.3	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.000438	0.00440	0.00361	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2253h	E200.8	0.00476	0.00500	0.0205	

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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
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

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-001
Client Sample ID: San Juan R at Mexican Hat US163 Xing (4953000)
Collection Date: 8/18/2015 1155h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	115	
Bicarbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	112	
Carbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	3.40	J
Chloride	16887-00-6	mg/L		8/25/2015 1638h	E300.0	0.0751	1.00	15.5	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	661	
Hardness (as CaCO ₃)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	291	
Hardness, Dissolved (as CaCO ₃)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	212	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/28/2015 1724h	E353.2	0.00833	0.0100	< 0.0100	U
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.30	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1036h	SM4500-P-F	0.0212	0.0500	0.380	B
Sulfate	14808-79-8	mg/L		8/25/2015 1638h	E300.0	0.211	7.50	143	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	320	@
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	35.4	37.5	685	

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

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

H - Sample was received outside of the holding time.

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
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 **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-002
Client Sample ID: San Juan R at Sand Island (4953250)
Collection Date: 8/18/2015 1122h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	120	
Bicarbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	113	
Carbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	6.80	J
Chloride	16887-00-6	mg/L		8/25/2015 1728h	E300.0	0.0751	1.00	14.7	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	658	
Hardness (as CaCO ₃)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	259	
Hardness, Dissolved (as CaCO ₃)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	218	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/28/2015 1750h	E353.2	0.00833	0.0100	0.0434	
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.33	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1037h	SM4500-P-F	0.0212	0.0500	0.214	B
Sulfate	14808-79-8	mg/L		8/25/2015 1728h	E300.0	0.211	7.50	138	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	260	
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	14.2	15.0	384	

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

H - Sample was received outside of the holding time.

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



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 **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-003
Client Sample ID: San Juan River at Town of Montezuma (4953990)
Collection Date: 8/18/2015 841h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	122	
Bicarbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	115	
Carbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	6.80	J
Chloride	16887-00-6	mg/L		8/25/2015 1745h	E300.0	0.0751	1.00	14.9	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	656	
Hardness (as CaCO ₃)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	237	
Hardness, Dissolved (as CaCO ₃)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	209	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/28/2015 1751h	E353.2	0.00833	0.0100	0.116	
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.38	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1038h	SM4500-P-F	0.0212	0.0500	0.132	B
Sulfate	14808-79-8	mg/L		8/25/2015 1745h	E300.0	0.211	7.50	134	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	280	
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	14.2	15.0	212	@

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

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

H - Sample was received outside of the holding time.

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



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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 **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-004
Client Sample ID: San Juan R at US160 Xing in CO (4954000)
Collection Date: 8/18/2015 956h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	117	
Bicarbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	113	
Carbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	3.40	J
Chloride	16887-00-6	mg/L		8/25/2015 1802h	E300.0	0.0751	1.00	13.4	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	592	
Hardness (as CaCO ₃)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	196	
Hardness, Dissolved (as CaCO ₃)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	184	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/28/2015 1818h	E353.2	0.0417	0.0500	1.90	
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.35	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1038h	SM4500-P-F	0.0212	0.0500	0.110	B
Sulfate	14808-79-8	mg/L		8/25/2015 1802h	E300.0	0.211	7.50	111	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	220	
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	7.08	7.50	195	

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

H - Sample was received outside of the holding time.

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



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

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508435-005
Client Sample ID: San Juan R at CH
Collection Date: 8/18/2015 1345h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	118	
Bicarbonate (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	118	
Carbonate (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/25/2015 1819h	E300.0	0.0751	1.00	14.1	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	658	
Hardness (as CaCO3)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	372	
Hardness, Dissolved (as CaCO3)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	192	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/28/2015 1754h	E353.2	0.00833	0.0100	< 0.0100	U
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.26	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1039h	SM4500-P-F	0.0212	0.0500	0.743	B
Sulfate	14808-79-8	mg/L		8/25/2015 1819h	E300.0	0.211	7.50	132	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	410	
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	35.4	37.5	1,750	

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

H - Sample was received outside of the holding time.

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



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

Contact: Lenora Sullivan

Lab Set ID: 1508435

Dept: ME

Project: Gold King Mine - San Juan River Sampling

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-38761													
Date Analyzed:		09/02/2015 903h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Aluminum	1.05	mg/L	E200.7	0.0237	0.100	1.000	0	105	85 - 115				
Calcium	10.2	mg/L	E200.7	0.0401	1.00	10.00	0	102	85 - 115				
Iron	0.969	mg/L	E200.7	0.0767	0.100	1.000	0	96.9	85 - 115				
Magnesium	10.6	mg/L	E200.7	0.0294	1.00	10.00	0	106	85 - 115				
Potassium	10.4	mg/L	E200.7	0.247	1.00	10.00	0	104	85 - 115				
Sodium	10.8	mg/L	E200.7	0.0330	1.00	10.00	0	108	85 - 115				
Lab Sample ID: LCS-38759													
Date Analyzed:		09/01/2015 1112h											
Test Code:		200.7-W											
Date Prepared:		08/21/2015 1311h											
Aluminum	1.01	mg/L	E200.7	0.0237	0.100	1.000	0	101	85 - 115				
Calcium	10.1	mg/L	E200.7	0.0401	1.00	10.00	0	101	85 - 115				
Iron	0.981	mg/L	E200.7	0.0767	0.100	1.000	0	98.1	85 - 115				
Magnesium	10.5	mg/L	E200.7	0.0294	1.00	10.00	0	105	85 - 115				
Potassium	9.91	mg/L	E200.7	0.247	1.00	10.00	0	99.1	85 - 115				
Sodium	10.2	mg/L	E200.7	0.0330	1.00	10.00	0	102	85 - 115				
Lab Sample ID: LCS-38762													
Date Analyzed:		09/02/2015 2214h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.184	mg/L	E200.8	0.0000366	0.00200	0.2000	0	92.0	85 - 115				
Arsenic	0.198	mg/L	E200.8	0.0000920	0.00200	0.2000	0	98.8	85 - 115				
Barium	0.190	mg/L	E200.8	0.000538	0.00200	0.2000	0	95.1	85 - 115				
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0	98.2	85 - 115				
Cadmium	0.189	mg/L	E200.8	0.000193	0.000500	0.2000	0	94.3	85 - 115				
Chromium	0.193	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.7	85 - 115				
Cobalt	0.193	mg/L	E200.8	0.0000434	0.00400	0.2000	0	96.6	85 - 115				
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0	97.8	85 - 115				
Lead	0.187	mg/L	E200.8	0.000264	0.00200	0.2000	0	93.6	85 - 115				
Manganese	0.194	mg/L	E200.8	0.00153	0.00200	0.2000	0	97.1	85 - 115				
Molybdenum	0.191	mg/L	E200.8	0.000206	0.00200	0.2000	0	95.7	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: Lenora Sullivan

Lab Set ID: 1508435

Dept: ME

Project: Gold King Mine - San Juan River Sampling

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-38762		Date Analyzed: 09/02/2015 2214h											
Test Code: 200.8-DIS		Date Prepared: 08/21/2015 1341h											
Nickel	0.192	mg/L	E200.8	0.000754	0.00200	0.2000	0	96.1	85 - 115				
Selenium	0.194	mg/L	E200.8	0.0000634	0.00200	0.2000	0	97.1	85 - 115				
Silver	0.174	mg/L	E200.8	0.0000244	0.00200	0.2000	0	87.0	85 - 115				
Thallium	0.181	mg/L	E200.8	0.0000242	0.00200	0.2000	0	90.5	85 - 115				
Vanadium	0.195	mg/L	E200.8	0.000438	0.00440	0.2000	0	97.5	85 - 115				
Zinc	0.972	mg/L	E200.8	0.00476	0.00500	1.000	0	97.2	85 - 115				
Lab Sample ID: LCS-38760		Date Analyzed: 09/02/2015 1645h											
Test Code: 200.8-W		Date Prepared: 08/21/2015 1311h											
Antimony	0.176	mg/L	E200.8	0.0000366	0.00200	0.2000	0	88.1	85 - 115				
Arsenic	0.195	mg/L	E200.8	0.0000920	0.00200	0.2000	0	97.5	85 - 115				
Barium	0.178	mg/L	E200.8	0.000538	0.00200	0.2000	0	88.9	85 - 115				
Beryllium	0.218	mg/L	E200.8	0.0000288	0.00200	0.2000	0	109	85 - 115				
Cadmium	0.179	mg/L	E200.8	0.000193	0.000500	0.2000	0	89.7	85 - 115				
Chromium	0.193	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.7	85 - 115				
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0	95.9	85 - 115				
Copper	0.192	mg/L	E200.8	0.000692	0.00200	0.2000	0	96.2	85 - 115				
Lead	0.177	mg/L	E200.8	0.000264	0.00200	0.2000	0	88.5	85 - 115				
Manganese	0.193	mg/L	E200.8	0.00153	0.00200	0.2000	0	96.6	85 - 115				
Molybdenum	0.181	mg/L	E200.8	0.000206	0.00200	0.2000	0	90.4	85 - 115				
Nickel	0.190	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.8	85 - 115				
Selenium	0.192	mg/L	E200.8	0.0000634	0.00200	0.2000	0	95.9	85 - 115				
Thallium	0.175	mg/L	E200.8	0.0000242	0.00200	0.2000	0	87.6	85 - 115				
Vanadium	0.196	mg/L	E200.8	0.000438	0.00440	0.2000	0	98.2	85 - 115				
Zinc	0.970	mg/L	E200.8	0.00476	0.00500	1.000	0	97.0	85 - 115				
Lab Sample ID: LCS-38760		Date Analyzed: 09/04/2015 900h											
Test Code: 200.8-W		Date Prepared: 08/21/2015 1311h											
Silver	0.197	mg/L	E200.8	0.0000244	0.00200	0.2000	0	98.5	85 - 115				



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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: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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-38825	Date Analyzed:	08/26/2015	855h										
Test Code: HG-DW-245.1	Date Prepared:	08/25/2015	1700h										
Mercury	0.00340	mg/L	E245.1	0.00000892	0.000150	0.003330	0	102	85 - 115				
Lab Sample ID: LCS-38852	Date Analyzed:	08/27/2015	937h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h										
Mercury	0.00344	mg/L	E245.1	0.00000892	0.000150	0.003330	0	103	85 - 115				



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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: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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-38761													
Date Analyzed:		09/02/2015 901h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
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	0.0399	mg/L	E200.7	0.0294	1.00								JB1
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-38759													
Date Analyzed:		09/01/2015 1109h											
Test Code:		200.7-W											
Date Prepared:		08/21/2015 1311h											
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-38762													
Date Analyzed:		09/02/2015 2210h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.000125	mg/L	E200.8	0.0000366	0.00200								JB
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
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
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	0.000409	mg/L	E200.8	0.000264	0.00200								JB
Manganese	< 0.00200	mg/L	E200.8	0.00153	0.00200								U
Molybdenum	< 0.00200	mg/L	E200.8	0.000206	0.00200								U



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

Contact: Lenora Sullivan

Lab Set ID: 1508435

Dept: ME

Project: Gold King Mine - San Juan River Sampling

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-38762	Date Analyzed:	09/02/2015	2210h										
Test Code:	200.8-DIS	Date Prepared:	08/21/2015	1341h									
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	< 0.00440	mg/L	E200.8	0.000438	0.00440								U
Zinc	< 0.00500	mg/L	E200.8	0.00476	0.00500								U
Lab Sample ID: MB-38760	Date Analyzed:	09/02/2015	1642h										
Test Code:	200.8-W	Date Prepared:	08/21/2015	1311h									
Antimony	0.000702	mg/L	E200.8	0.0000366	0.00200								JB
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
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
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	0.0000400	mg/L	E200.8	0.0000244	0.00200								JB
Thallium	< 0.00200	mg/L	E200.8	0.0000242	0.00200								U
Vanadium	< 0.00440	mg/L	E200.8	0.000438	0.00440								U
Zinc	< 0.00500	mg/L	E200.8	0.00476	0.00500								U



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Kyle F. Gross
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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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-38825	Date Analyzed:	08/26/2015	854h										
Test Code: HG-DW-245.1	Date Prepared:	08/25/2015	1700h										
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U
Lab Sample ID: MB-38852	Date Analyzed:	08/27/2015	935h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h										
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508437-003CMS													
Date Analyzed:		09/02/2015 1002h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Calcium	72.9	mg/L	E200.7	0.401	10.0	10.00	62.7	102	70 - 130				
Lab Sample ID: 1508435-002CMS													
Date Analyzed:		09/02/2015 1039h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Iron	0.898	mg/L	E200.7	0.0767	0.100	1.000	0	89.8	70 - 130				
Magnesium	24.1	mg/L	E200.7	0.0294	1.00	10.00	12.8	113	70 - 130				
Potassium	13.8	mg/L	E200.7	0.247	1.00	10.00	2.92	109	70 - 130				
Sodium	47.1	mg/L	E200.7	0.0330	1.00	10.00	36	111	70 - 130				
Lab Sample ID: 1508436-002CMS													
Date Analyzed:		09/02/2015 1054h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Iron	0.894	mg/L	E200.7	0.0767	0.100	1.000	0	89.4	70 - 130				
Magnesium	23.5	mg/L	E200.7	0.0294	1.00	10.00	12.9	105	70 - 130				
Potassium	13.2	mg/L	E200.7	0.247	1.00	10.00	2.75	105	70 - 130				
Sodium	46.8	mg/L	E200.7	0.0330	1.00	10.00	36.1	107	70 - 130				
Lab Sample ID: 1508437-003CMS													
Date Analyzed:		09/02/2015 1119h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Iron	0.876	mg/L	E200.7	0.0767	0.100	1.000	0	87.6	70 - 130				
Magnesium	24.1	mg/L	E200.7	0.0294	1.00	10.00	13.4	108	70 - 130				
Potassium	13.0	mg/L	E200.7	0.247	1.00	10.00	2.62	104	70 - 130				
Sodium	49.0	mg/L	E200.7	0.0330	1.00	10.00	37.5	116	70 - 130				
Lab Sample ID: 1508435-002CMS													
Date Analyzed:		09/02/2015 914h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Calcium	78.4	mg/L	E200.7	0.401	10.0	10.00	66.4	120	70 - 130				
Lab Sample ID: 1508436-002CMS													
Date Analyzed:		09/02/2015 938h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Calcium	74.4	mg/L	E200.7	0.401	10.0	10.00	64.5	99.4	70 - 130				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508435

Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan

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: 1508436-002CMS	Date Analyzed:	09/03/2015	1010h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.10	mg/L	E200.7	0.0237	0.100	1.000	0.0329	106	70 - 130				
Lab Sample ID: 1508437-003CMS	Date Analyzed:	09/03/2015	1035h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.06	mg/L	E200.7	0.0237	0.100	1.000	0	106	70 - 130				
Lab Sample ID: 1508435-002CMS	Date Analyzed:	09/03/2015	955h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.07	mg/L	E200.7	0.0237	0.100	1.000	0	107	70 - 130				
Lab Sample ID: 1508435-002BMS	Date Analyzed:	09/01/2015	1128h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	87.3	mg/L	E200.7	0.401	10.0	10.00	78.4	89.0	70 - 130				
Lab Sample ID: 1508436-001BMS	Date Analyzed:	09/01/2015	1148h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	86.8	mg/L	E200.7	0.401	10.0	10.00	74.5	122	70 - 130				
Lab Sample ID: 1508437-001BMS	Date Analyzed:	09/01/2015	1204h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	77.1	mg/L	E200.7	0.401	10.0	10.00	73.2	38.8	70 - 130				2
Lab Sample ID: 1508435-002BMS	Date Analyzed:	09/01/2015	1234h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Aluminum	13.2	mg/L	E200.7	0.0237	0.100	1.000	7.32	584	70 - 130				1
Iron	8.59	mg/L	E200.7	0.0767	0.100	1.000	6.24	235	70 - 130				1
Magnesium	24.8	mg/L	E200.7	0.0294	1.00	10.00	15.5	93.6	70 - 130				
Potassium	14.2	mg/L	E200.7	0.247	1.00	10.00	4.23	100	70 - 130				
Sodium	40.5	mg/L	E200.7	0.0330	1.00	10.00	32.4	80.8	70 - 130				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508435

Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan

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: 1508436-001BMS													
Date Analyzed:	09/01/2015 1248h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	13.9	mg/L	E200.7	0.0237	0.100	1.000	7.11	679	70 - 130				2
Iron	7.81	mg/L	E200.7	0.0767	0.100	1.000	5.21	261	70 - 130				2
Magnesium	25.2	mg/L	E200.7	0.0294	1.00	10.00	15.2	100	70 - 130				
Potassium	14.5	mg/L	E200.7	0.247	1.00	10.00	4.09	104	70 - 130				
Sodium	43.9	mg/L	E200.7	0.0330	1.00	10.00	33.5	103	70 - 130				
Lab Sample ID: 1508437-001BMS													
Date Analyzed:	09/01/2015 1311h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	10.2	mg/L	E200.7	0.0237	0.100	1.000	5.79	443	70 - 130				1
Iron	6.11	mg/L	E200.7	0.0767	0.100	1.000	4.33	179	70 - 130				1
Magnesium	23.9	mg/L	E200.7	0.0294	1.00	10.00	14.6	93.1	70 - 130				
Potassium	13.7	mg/L	E200.7	0.247	1.00	10.00	3.78	99.4	70 - 130				
Sodium	42.9	mg/L	E200.7	0.0330	1.00	10.00	34.8	80.5	70 - 130				
Lab Sample ID: 1508435-002CMS													
Date Analyzed:	09/02/2015 2240h												
Test Code:	200.8-DIS												
Date Prepared:	08/21/2015 1341h												
Antimony	0.190	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000583	94.7	75 - 125				
Arsenic	0.203	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00146	101	75 - 125				
Barium	0.329	mg/L	E200.8	0.000538	0.00200	0.2000	0.138	95.6	75 - 125				
Beryllium	0.199	mg/L	E200.8	0.0000288	0.00200	0.2000	0	99.7	75 - 125				
Cadmium	0.190	mg/L	E200.8	0.000193	0.000500	0.2000	0	94.9	75 - 125				
Chromium	0.194	mg/L	E200.8	0.00154	0.00200	0.2000	0	97.0	75 - 125				
Cobalt	0.193	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000643	96.7	75 - 125				
Copper	0.199	mg/L	E200.8	0.000692	0.00200	0.2000	0.00225	98.2	75 - 125				
Lead	0.189	mg/L	E200.8	0.000264	0.00200	0.2000	0.000382	94.4	75 - 125				
Manganese	0.195	mg/L	E200.8	0.00153	0.00200	0.2000	0.00155	96.7	75 - 125				
Molybdenum	0.198	mg/L	E200.8	0.000206	0.00200	0.2000	0.00194	98.0	75 - 125				
Nickel	0.193	mg/L	E200.8	0.000754	0.00200	0.2000	0	96.4	75 - 125				
Selenium	0.192	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00057	95.8	75 - 125				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508435

Dept: ME

Project: Gold King Mine - San Juan River Sampling

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: 1508435-002CMS													
Date Analyzed:	09/02/2015 2240h												
Test Code:	200.8-DIS												
Date Prepared:	08/21/2015 1341h												
Silver	0.183	mg/L	E200.8	0.0000244	0.00200	0.2000	0	91.5	75 - 125				
Thallium	0.184	mg/L	E200.8	0.0000242	0.00200	0.2000	0	91.8	75 - 125				
Vanadium	0.200	mg/L	E200.8	0.000438	0.00440	0.2000	0.00238	98.7	75 - 125				
Zinc	0.974	mg/L	E200.8	0.00476	0.00500	1.000	0.0123	96.2	75 - 125				
Lab Sample ID: 1508436-002CMS													
Date Analyzed:	09/02/2015 2303h												
Test Code:	200.8-DIS												
Date Prepared:	08/21/2015 1341h												
Antimony	0.187	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000513	93.4	75 - 125				
Arsenic	0.198	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00132	98.5	75 - 125				
Barium	0.307	mg/L	E200.8	0.000538	0.00200	0.2000	0.122	92.4	75 - 125				
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0	98.2	75 - 125				
Cadmium	0.187	mg/L	E200.8	0.000193	0.000500	0.2000	0	93.6	75 - 125				
Chromium	0.193	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.3	75 - 125				
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000747	96.0	75 - 125				
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0.00191	97.2	75 - 125				
Lead	0.187	mg/L	E200.8	0.000264	0.00200	0.2000	0	93.3	75 - 125				
Manganese	0.193	mg/L	E200.8	0.00153	0.00200	0.2000	0.00179	95.6	75 - 125				
Molybdenum	0.195	mg/L	E200.8	0.000206	0.00200	0.2000	0.00196	96.4	75 - 125				
Nickel	0.191	mg/L	E200.8	0.000754	0.00200	0.2000	0	95.4	75 - 125				
Selenium	0.191	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000564	95.2	75 - 125				
Silver	0.181	mg/L	E200.8	0.0000244	0.00200	0.2000	0	90.3	75 - 125				
Thallium	0.180	mg/L	E200.8	0.0000242	0.00200	0.2000	0	90.2	75 - 125				
Vanadium	0.197	mg/L	E200.8	0.000438	0.00440	0.2000	0.00246	97.5	75 - 125				
Zinc	0.970	mg/L	E200.8	0.00476	0.00500	1.000	0.00868	96.2	75 - 125				
Lab Sample ID: 1508437-003CMS													
Date Analyzed:	09/02/2015 2339h												
Test Code:	200.8-DIS												
Date Prepared:	08/21/2015 1341h												
Antimony	0.183	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000994	91.0	75 - 125				
Arsenic	0.199	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0014	98.8	75 - 125				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508437-003CMS		Date Analyzed:	09/02/2015 2339h										
Test Code: 200.8-DIS		Date Prepared:	08/21/2015 1341h										
Barium	0.311	mg/L	E200.8	0.000538	0.00200	0.2000	0.128	91.6	75 - 125				
Beryllium	0.190	mg/L	E200.8	0.0000288	0.00200	0.2000	0	95.2	75 - 125				
Cadmium	0.183	mg/L	E200.8	0.000193	0.000500	0.2000	0	91.5	75 - 125				
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.4	75 - 125				
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000071	95.1	75 - 125				
Copper	0.195	mg/L	E200.8	0.000692	0.00200	0.2000	0.00193	96.8	75 - 125				
Lead	0.181	mg/L	E200.8	0.000264	0.00200	0.2000	0	90.5	75 - 125				
Manganese	0.190	mg/L	E200.8	0.00153	0.00200	0.2000	0	94.9	75 - 125				
Molybdenum	0.191	mg/L	E200.8	0.000206	0.00200	0.2000	0.0018	94.7	75 - 125				
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.6	75 - 125				
Selenium	0.190	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00066	94.5	75 - 125				
Silver	0.176	mg/L	E200.8	0.0000244	0.00200	0.2000	0	87.9	75 - 125				
Thallium	0.176	mg/L	E200.8	0.0000242	0.00200	0.2000	0	88.1	75 - 125				
Vanadium	0.196	mg/L	E200.8	0.000438	0.00440	0.2000	0.00214	96.9	75 - 125				
Zinc	0.962	mg/L	E200.8	0.00476	0.00500	1.000	0.00664	95.5	75 - 125				
Lab Sample ID: 1508435-002BMS		Date Analyzed:	09/02/2015 1702h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Antimony	0.141	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000765	70.1	75 - 125				1
Arsenic	0.196	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00334	96.3	75 - 125				
Barium	0.369	mg/L	E200.8	0.000538	0.00200	0.2000	0.184	92.6	75 - 125				
Beryllium	0.213	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000535	106	75 - 125				
Cadmium	0.178	mg/L	E200.8	0.000193	0.000500	0.2000	0	89.2	75 - 125				
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0.00417	97.2	75 - 125				
Cobalt	0.195	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00319	96.1	75 - 125				
Copper	0.201	mg/L	E200.8	0.000692	0.00200	0.2000	0.0101	95.3	75 - 125				
Lead	0.184	mg/L	E200.8	0.000264	0.00200	0.2000	0.00824	88.1	75 - 125				
Manganese	0.432	mg/L	E200.8	0.00153	0.00200	0.2000	0.239	96.7	75 - 125				
Molybdenum	0.192	mg/L	E200.8	0.000206	0.00200	0.2000	0.00158	95.3	75 - 125				



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

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508435

Dept: ME

Project: Gold King Mine - San Juan River Sampling

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: 1508435-002BMS		Date Analyzed:	09/02/2015 1702h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Nickel	0.196	mg/L	E200.8	0.000754	0.00200	0.2000	0.00522	95.3	75 - 125				
Selenium	0.183	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000721	91.2	75 - 125				
Silver	0.162	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000634	81.0	75 - 125				
Thallium	0.174	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000399	86.9	75 - 125				
Vanadium	0.213	mg/L	E200.8	0.000438	0.00440	0.2000	0.0131	100	75 - 125				
Zinc	0.994	mg/L	E200.8	0.00476	0.00500	1.000	0.0323	96.1	75 - 125				
Lab Sample ID: 1508436-001BMS		Date Analyzed:	09/03/2015 900h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Antimony	0.153	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000209	76.4	75 - 125				
Arsenic	0.195	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00313	96.1	75 - 125				
Barium	0.377	mg/L	E200.8	0.000538	0.00200	0.2000	0.187	94.7	75 - 125				
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000457	97.9	75 - 125				
Cadmium	0.192	mg/L	E200.8	0.000193	0.000500	0.2000	0	96.1	75 - 125				
Chromium	0.194	mg/L	E200.8	0.00154	0.00200	0.2000	0.00383	95.2	75 - 125				
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00266	94.5	75 - 125				
Copper	0.197	mg/L	E200.8	0.000692	0.00200	0.2000	0.00851	94.4	75 - 125				
Lead	0.197	mg/L	E200.8	0.000264	0.00200	0.2000	0.00715	95.0	75 - 125				
Manganese	0.374	mg/L	E200.8	0.00153	0.00200	0.2000	0.182	95.8	75 - 125				
Molybdenum	0.189	mg/L	E200.8	0.000206	0.00200	0.2000	0.00149	93.9	75 - 125				
Nickel	0.193	mg/L	E200.8	0.000754	0.00200	0.2000	0.00481	94.2	75 - 125				
Selenium	0.187	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000694	93.2	75 - 125				
Silver	0.168	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000541	84.0	75 - 125				
Thallium	0.185	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000502	92.3	75 - 125				
Vanadium	0.206	mg/L	E200.8	0.000438	0.00440	0.2000	0.012	97.1	75 - 125				
Zinc	0.985	mg/L	E200.8	0.00476	0.00500	1.000	0.023	96.2	75 - 125				



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

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508437-001BMS	Date Analyzed:	09/03/2015	932h										
Test Code:	200.8-W	Date Prepared:	08/21/2015	1311h									
Antimony	0.172	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000198	85.8	75 - 125				
Arsenic	0.193	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00292	95.0	75 - 125				
Barium	0.344	mg/L	E200.8	0.000538	0.00200	0.2000	0.161	91.4	75 - 125				
Beryllium	0.194	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000342	96.8	75 - 125				
Cadmium	0.189	mg/L	E200.8	0.000193	0.000500	0.2000	0	94.4	75 - 125				
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0.00309	94.0	75 - 125				
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00199	93.9	75 - 125				
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0.00684	94.4	75 - 125				
Lead	0.192	mg/L	E200.8	0.000264	0.00200	0.2000	0.00517	93.6	75 - 125				
Manganese	0.323	mg/L	E200.8	0.00153	0.00200	0.2000	0.136	93.3	75 - 125				
Molybdenum	0.191	mg/L	E200.8	0.000206	0.00200	0.2000	0.00163	94.6	75 - 125				
Nickel	0.190	mg/L	E200.8	0.000754	0.00200	0.2000	0.00324	93.6	75 - 125				
Selenium	0.186	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000631	92.5	75 - 125				
Silver	0.174	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000482	87.0	75 - 125				
Thallium	0.182	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000372	91.0	75 - 125				
Vanadium	0.200	mg/L	E200.8	0.000438	0.00440	0.2000	0.0104	94.8	75 - 125				
Zinc	0.959	mg/L	E200.8	0.00476	0.00500	1.000	0.0187	94.0	75 - 125				
Lab Sample ID: 1508435-001BMS	Date Analyzed:	08/26/2015	902h										
Test Code:	HG-DW-245.1	Date Prepared:	08/25/2015	1700h									
Mercury	0.00385	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000025	115	80 - 120				
Lab Sample ID: 1508436-001CMS	Date Analyzed:	08/27/2015	1000h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h									
Mercury	0.00355	mg/L	E245.1	0.00000892	0.000150	0.003330	0	107	85 - 115				
Lab Sample ID: 1508437-001CMS	Date Analyzed:	08/27/2015	1016h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h									
Mercury	0.00350	mg/L	E245.1	0.00000892	0.000150	0.003330	0	105	85 - 115				



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Salt Lake City, UT 84119

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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508435

Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan

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: 1508435-001CMS	Date Analyzed:	08/27/2015	947h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h										
Mercury	0.00320	mg/L	E245.1	0.00000892	0.000150	0.003330	0	95.9	85 - 115				

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

1508435-002BMS: Internal standard areas were outside of the QC limits. Reanalysis and/or MS and/or MSD samples yielded similar results indicating matrix interference.

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: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508437-003CMSD													
Date Analyzed:	09/02/2015 1004h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Calcium	72.0	mg/L	E200.7	0.401	10.0	10.00	62.7	93.1	70 - 130	72.9	1.23	20	
Lab Sample ID: 1508435-002CMSD													
Date Analyzed:	09/02/2015 1041h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Iron	0.899	mg/L	E200.7	0.0767	0.100	1.000	0	89.9	70 - 130	0.898	0.103	20	
Magnesium	23.1	mg/L	E200.7	0.0294	1.00	10.00	12.8	103	70 - 130	24.1	4.31	20	
Potassium	13.4	mg/L	E200.7	0.247	1.00	10.00	2.92	105	70 - 130	13.8	3.21	20	
Sodium	45.5	mg/L	E200.7	0.0330	1.00	10.00	36	95.2	70 - 130	47.1	3.39	20	
Lab Sample ID: 1508436-002CMSD													
Date Analyzed:	09/02/2015 1104h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Iron	0.906	mg/L	E200.7	0.0767	0.100	1.000	0	90.6	70 - 130	0.894	1.30	20	
Magnesium	23.7	mg/L	E200.7	0.0294	1.00	10.00	12.9	108	70 - 130	23.5	0.931	20	
Potassium	13.3	mg/L	E200.7	0.247	1.00	10.00	2.75	105	70 - 130	13.2	0.288	20	
Sodium	47.1	mg/L	E200.7	0.0330	1.00	10.00	36.1	111	70 - 130	46.8	0.718	20	
Lab Sample ID: 1508437-003CMSD													
Date Analyzed:	09/02/2015 1121h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Iron	0.866	mg/L	E200.7	0.0767	0.100	1.000	0	86.6	70 - 130	0.876	1.09	20	
Magnesium	23.6	mg/L	E200.7	0.0294	1.00	10.00	13.4	102	70 - 130	24.1	2.20	20	
Potassium	13.0	mg/L	E200.7	0.247	1.00	10.00	2.62	104	70 - 130	13	0.377	20	
Sodium	47.6	mg/L	E200.7	0.0330	1.00	10.00	37.5	102	70 - 130	49	2.83	20	
Lab Sample ID: 1508435-002CMSD													
Date Analyzed:	09/02/2015 917h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Calcium	75.9	mg/L	E200.7	0.401	10.0	10.00	66.4	95.0	70 - 130	78.4	3.22	20	
Lab Sample ID: 1508436-002CMSD													
Date Analyzed:	09/02/2015 940h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Calcium	72.1	mg/L	E200.7	0.401	10.0	10.00	64.5	75.7	70 - 130	74.4	3.24	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508436-002CMSD	Date Analyzed:	09/03/2015	1020h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.10	mg/L	E200.7	0.0237	0.100	1.000	0.0329	106	70 - 130	1.1	0.0436	20	
Lab Sample ID: 1508437-003CMSD	Date Analyzed:	09/03/2015	1037h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.06	mg/L	E200.7	0.0237	0.100	1.000	0	106	70 - 130	1.06	0.837	20	
Lab Sample ID: 1508435-002CMSD	Date Analyzed:	09/03/2015	957h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.04	mg/L	E200.7	0.0237	0.100	1.000	0	104	70 - 130	1.07	3.49	20	
Lab Sample ID: 1508435-002BMSD	Date Analyzed:	09/01/2015	1130h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	89.1	mg/L	E200.7	0.401	10.0	10.00	78.4	107	70 - 130	87.3	2.05	20	
Lab Sample ID: 1508436-001BMSD	Date Analyzed:	09/01/2015	1151h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	84.4	mg/L	E200.7	0.401	10.0	10.00	74.5	98.8	70 - 130	86.8	2.76	20	
Lab Sample ID: 1508437-001BMSD	Date Analyzed:	09/01/2015	1213h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	81.6	mg/L	E200.7	0.401	10.0	10.00	73.2	83.7	70 - 130	77.1	5.65	20	
Lab Sample ID: 1508435-002BMSD	Date Analyzed:	09/01/2015	1236h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Aluminum	12.9	mg/L	E200.7	0.0237	0.100	1.000	7.32	560	70 - 130	13.2	1.82	20	1
Iron	8.40	mg/L	E200.7	0.0767	0.100	1.000	6.24	216	70 - 130	8.59	2.20	20	1
Magnesium	25.0	mg/L	E200.7	0.0294	1.00	10.00	15.5	95.1	70 - 130	24.8	0.601	20	
Potassium	14.3	mg/L	E200.7	0.247	1.00	10.00	4.23	101	70 - 130	14.2	0.460	20	
Sodium	41.3	mg/L	E200.7	0.0330	1.00	10.00	32.4	89.4	70 - 130	40.5	2.12	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508436-001BMSD													
Date Analyzed:	09/01/2015 1250h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	13.4	mg/L	E200.7	0.0237	0.100	1.000	7.11	631	70 - 130	13.9	3.53	20	2
Iron	7.54	mg/L	E200.7	0.0767	0.100	1.000	5.21	234	70 - 130	7.81	3.53	20	2
Magnesium	24.6	mg/L	E200.7	0.0294	1.00	10.00	15.2	94.7	70 - 130	25.2	2.27	20	
Potassium	14.3	mg/L	E200.7	0.247	1.00	10.00	4.09	102	70 - 130	14.5	1.53	20	
Sodium	42.9	mg/L	E200.7	0.0330	1.00	10.00	33.5	93.1	70 - 130	43.9	2.33	20	
Lab Sample ID: 1508437-001BMSD													
Date Analyzed:	09/01/2015 1313h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	10.1	mg/L	E200.7	0.0237	0.100	1.000	5.79	430	70 - 130	10.2	1.31	20	1
Iron	6.00	mg/L	E200.7	0.0767	0.100	1.000	4.33	167	70 - 130	6.11	1.88	20	1
Magnesium	23.7	mg/L	E200.7	0.0294	1.00	10.00	14.6	91.2	70 - 130	23.9	0.806	20	
Potassium	13.7	mg/L	E200.7	0.247	1.00	10.00	3.78	99.2	70 - 130	13.7	0.139	20	
Sodium	42.5	mg/L	E200.7	0.0330	1.00	10.00	34.8	77.3	70 - 130	42.9	0.758	20	
Lab Sample ID: 1508435-002CMSD													
Date Analyzed:	09/02/2015 2243h												
Test Code:	200.8-DIS												
Date Prepared:	08/21/2015 1341h												
Antimony	0.186	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000583	92.6	75 - 125	0.19	2.23	20	
Arsenic	0.199	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00146	98.7	75 - 125	0.203	1.95	20	
Barium	0.320	mg/L	E200.8	0.000538	0.00200	0.2000	0.138	90.8	75 - 125	0.329	2.94	20	
Beryllium	0.191	mg/L	E200.8	0.0000288	0.00200	0.2000	0	95.6	75 - 125	0.199	4.22	20	
Cadmium	0.185	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.6	75 - 125	0.19	2.45	20	
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.7	75 - 125	0.194	1.28	20	
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000643	95.0	75 - 125	0.193	1.72	20	
Copper	0.195	mg/L	E200.8	0.000692	0.00200	0.2000	0.00225	96.2	75 - 125	0.199	1.96	20	
Lead	0.183	mg/L	E200.8	0.000264	0.00200	0.2000	0.000382	91.6	75 - 125	0.189	3.06	20	
Manganese	0.193	mg/L	E200.8	0.00153	0.00200	0.2000	0.00155	95.9	75 - 125	0.195	0.755	20	
Molybdenum	0.192	mg/L	E200.8	0.000206	0.00200	0.2000	0.00194	95.1	75 - 125	0.198	3.03	20	
Nickel	0.188	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.2	75 - 125	0.193	2.35	20	
Selenium	0.189	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00057	94.4	75 - 125	0.192	1.55	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: 1508435

Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan

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: 1508435-002CMSD													
Date Analyzed:		09/02/2015 2243h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Silver	0.176	mg/L	E200.8	0.0000244	0.00200	0.2000	0	88.1	75 - 125	0.183	3.81	20	
Thallium	0.179	mg/L	E200.8	0.0000242	0.00200	0.2000	0	89.3	75 - 125	0.184	2.80	20	
Vanadium	0.196	mg/L	E200.8	0.000438	0.00440	0.2000	0.00238	97.1	75 - 125	0.2	1.65	20	
Zinc	0.967	mg/L	E200.8	0.00476	0.00500	1.000	0.0123	95.5	75 - 125	0.974	0.710	20	
Lab Sample ID: 1508436-002CMSD													
Date Analyzed:		09/02/2015 2316h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.187	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000513	93.2	75 - 125	0.187	0.249	20	
Arsenic	0.200	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00132	99.2	75 - 125	0.198	0.701	20	
Barium	0.304	mg/L	E200.8	0.000538	0.00200	0.2000	0.122	91.0	75 - 125	0.307	0.913	20	
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0	97.8	75 - 125	0.196	0.399	20	
Cadmium	0.185	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.5	75 - 125	0.187	1.21	20	
Chromium	0.190	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.1	75 - 125	0.193	1.18	20	
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000747	95.1	75 - 125	0.192	0.974	20	
Copper	0.194	mg/L	E200.8	0.000692	0.00200	0.2000	0.00191	96.3	75 - 125	0.196	0.906	20	
Lead	0.184	mg/L	E200.8	0.000264	0.00200	0.2000	0	91.9	75 - 125	0.187	1.50	20	
Manganese	0.190	mg/L	E200.8	0.00153	0.00200	0.2000	0.00179	94.3	75 - 125	0.193	1.40	20	
Molybdenum	0.193	mg/L	E200.8	0.000206	0.00200	0.2000	0.00196	95.5	75 - 125	0.195	0.995	20	
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.7	75 - 125	0.191	0.817	20	
Selenium	0.190	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000564	94.9	75 - 125	0.191	0.269	20	
Silver	0.179	mg/L	E200.8	0.0000244	0.00200	0.2000	0	89.7	75 - 125	0.181	0.640	20	
Thallium	0.178	mg/L	E200.8	0.0000242	0.00200	0.2000	0	89.0	75 - 125	0.18	1.38	20	
Vanadium	0.195	mg/L	E200.8	0.000438	0.00440	0.2000	0.00246	96.4	75 - 125	0.197	1.12	20	
Zinc	0.961	mg/L	E200.8	0.00476	0.00500	1.000	0.00868	95.3	75 - 125	0.97	0.928	20	
Lab Sample ID: 1508437-003CMSD													
Date Analyzed:		09/02/2015 2342h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.186	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000994	92.3	75 - 125	0.183	1.43	20	
Arsenic	0.197	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0014	97.8	75 - 125	0.199	0.972	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508437-003CMSD	Date Analyzed:	09/02/2015 2342h											
Test Code:	200.8-DIS	Date Prepared:	08/21/2015 1341h										
Barium	0.314	mg/L	E200.8	0.000538	0.00200	0.2000	0.128	92.9	75 - 125	0.311	0.799	20	
Beryllium	0.193	mg/L	E200.8	0.0000288	0.00200	0.2000	0	96.3	75 - 125	0.19	1.10	20	
Cadmium	0.185	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.6	75 - 125	0.183	1.13	20	
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.4	75 - 125	0.191	0.00603	20	
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000071	94.9	75 - 125	0.19	0.223	20	
Copper	0.194	mg/L	E200.8	0.000692	0.00200	0.2000	0.00193	96.2	75 - 125	0.195	0.574	20	
Lead	0.183	mg/L	E200.8	0.000264	0.00200	0.2000	0	91.7	75 - 125	0.181	1.32	20	
Manganese	0.191	mg/L	E200.8	0.00153	0.00200	0.2000	0	95.7	75 - 125	0.19	0.928	20	
Molybdenum	0.192	mg/L	E200.8	0.000206	0.00200	0.2000	0.0018	95.3	75 - 125	0.191	0.655	20	
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.3	75 - 125	0.189	0.384	20	
Selenium	0.189	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00066	94.1	75 - 125	0.19	0.424	20	
Silver	0.176	mg/L	E200.8	0.0000244	0.00200	0.2000	0	88.0	75 - 125	0.176	0.139	20	
Thallium	0.178	mg/L	E200.8	0.0000242	0.00200	0.2000	0	89.0	75 - 125	0.176	0.929	20	
Vanadium	0.194	mg/L	E200.8	0.000438	0.00440	0.2000	0.00214	95.8	75 - 125	0.196	1.12	20	
Zinc	0.967	mg/L	E200.8	0.00476	0.00500	1.000	0.00664	96.1	75 - 125	0.962	0.555	20	
Lab Sample ID: 1508435-002BMSD	Date Analyzed:	09/02/2015 1705h											
Test Code:	200.8-W	Date Prepared:	08/21/2015 1311h										
Antimony	0.146	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000765	72.6	75 - 125	0.141	3.41	20	1
Arsenic	0.197	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00334	96.7	75 - 125	0.196	0.426	20	
Barium	0.364	mg/L	E200.8	0.000538	0.00200	0.2000	0.184	90.0	75 - 125	0.369	1.42	20	
Beryllium	0.217	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000535	108	75 - 125	0.213	1.60	20	
Cadmium	0.182	mg/L	E200.8	0.000193	0.000500	0.2000	0	91.2	75 - 125	0.178	2.27	20	
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0.00417	97.3	75 - 125	0.199	0.119	20	
Cobalt	0.195	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00319	96.0	75 - 125	0.195	0.0536	20	
Copper	0.201	mg/L	E200.8	0.000692	0.00200	0.2000	0.0101	95.4	75 - 125	0.201	0.141	20	
Lead	0.188	mg/L	E200.8	0.000264	0.00200	0.2000	0.00824	89.7	75 - 125	0.184	1.70	20	
Manganese	0.428	mg/L	E200.8	0.00153	0.00200	0.2000	0.239	94.7	75 - 125	0.432	0.905	20	
Molybdenum	0.196	mg/L	E200.8	0.000206	0.00200	0.2000	0.00158	97.2	75 - 125	0.192	1.95	20	



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Salt Lake City, UT 84119

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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508435-002BMSD													
Date Analyzed:	09/02/2015 1705h												
Test Code:	200.8-W												
Date Prepared:	08/21/2015 1311h												
Nickel	0.196	mg/L	E200.8	0.000754	0.00200	0.2000	0.00522	95.5	75 - 125	0.196	0.192	20	
Selenium	0.186	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000721	92.6	75 - 125	0.183	1.51	20	
Silver	0.165	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000634	82.7	75 - 125	0.162	2.11	20	
Thallium	0.176	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000399	88.1	75 - 125	0.174	1.41	20	
Vanadium	0.212	mg/L	E200.8	0.000438	0.00440	0.2000	0.0131	99.6	75 - 125	0.213	0.340	20	
Zinc	1.00	mg/L	E200.8	0.00476	0.00500	1.000	0.0323	97.1	75 - 125	0.994	0.955	20	
Lab Sample ID: 1508436-001BMSD													
Date Analyzed:	09/03/2015 903h												
Test Code:	200.8-W												
Date Prepared:	08/21/2015 1311h												
Antimony	0.154	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000209	77.1	75 - 125	0.153	0.924	20	
Arsenic	0.196	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00313	96.4	75 - 125	0.195	0.263	20	
Barium	0.374	mg/L	E200.8	0.000538	0.00200	0.2000	0.187	93.2	75 - 125	0.377	0.799	20	
Beryllium	0.194	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000457	96.9	75 - 125	0.196	1.01	20	
Cadmium	0.190	mg/L	E200.8	0.000193	0.000500	0.2000	0	95.2	75 - 125	0.192	1.01	20	
Chromium	0.195	mg/L	E200.8	0.00154	0.00200	0.2000	0.00383	95.6	75 - 125	0.194	0.395	20	
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00266	94.8	75 - 125	0.192	0.333	20	
Copper	0.198	mg/L	E200.8	0.000692	0.00200	0.2000	0.00851	94.6	75 - 125	0.197	0.195	20	
Lead	0.196	mg/L	E200.8	0.000264	0.00200	0.2000	0.00715	94.7	75 - 125	0.197	0.365	20	
Manganese	0.377	mg/L	E200.8	0.00153	0.00200	0.2000	0.182	97.3	75 - 125	0.374	0.792	20	
Molybdenum	0.189	mg/L	E200.8	0.000206	0.00200	0.2000	0.00149	93.5	75 - 125	0.189	0.383	20	
Nickel	0.193	mg/L	E200.8	0.000754	0.00200	0.2000	0.00481	94.2	75 - 125	0.193	0.000713	20	
Selenium	0.189	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000694	94.1	75 - 125	0.187	0.962	20	
Silver	0.167	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000541	83.4	75 - 125	0.168	0.789	20	
Thallium	0.184	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000502	92.0	75 - 125	0.185	0.341	20	
Vanadium	0.207	mg/L	E200.8	0.000438	0.00440	0.2000	0.012	97.3	75 - 125	0.206	0.106	20	
Zinc	0.982	mg/L	E200.8	0.00476	0.00500	1.000	0.023	95.9	75 - 125	0.985	0.384	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508435

Dept: ME

Project: Gold King Mine - San Juan River Sampling

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: 1508437-001BMSD													
Date Analyzed:		09/03/2015 935h											
Test Code:		200.8-W											
Date Prepared:		08/21/2015 1311h											
Antimony	0.167	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000198	83.3	75 - 125	0.172	2.94	20	
Arsenic	0.191	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00292	93.9	75 - 125	0.193	1.19	20	
Barium	0.336	mg/L	E200.8	0.000538	0.00200	0.2000	0.161	87.5	75 - 125	0.344	2.28	20	
Beryllium	0.191	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000342	95.4	75 - 125	0.194	1.41	20	
Cadmium	0.184	mg/L	E200.8	0.000193	0.000500	0.2000	0	91.8	75 - 125	0.189	2.80	20	
Chromium	0.190	mg/L	E200.8	0.00154	0.00200	0.2000	0.00309	93.6	75 - 125	0.191	0.390	20	
Cobalt	0.189	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00199	93.3	75 - 125	0.19	0.599	20	
Copper	0.194	mg/L	E200.8	0.000692	0.00200	0.2000	0.00684	93.7	75 - 125	0.196	0.789	20	
Lead	0.190	mg/L	E200.8	0.000264	0.00200	0.2000	0.00517	92.5	75 - 125	0.192	1.10	20	
Manganese	0.319	mg/L	E200.8	0.00153	0.00200	0.2000	0.136	91.5	75 - 125	0.323	1.12	20	
Molybdenum	0.188	mg/L	E200.8	0.000206	0.00200	0.2000	0.00163	93.1	75 - 125	0.191	1.58	20	
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0.00324	92.7	75 - 125	0.19	0.971	20	
Selenium	0.184	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000631	91.5	75 - 125	0.186	1.16	20	
Silver	0.151	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000482	75.3	75 - 125	0.174	14.4	20	
Thallium	0.180	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000372	90.0	75 - 125	0.182	1.11	20	
Vanadium	0.201	mg/L	E200.8	0.000438	0.00440	0.2000	0.0104	95.1	75 - 125	0.2	0.294	20	
Zinc	0.966	mg/L	E200.8	0.00476	0.00500	1.000	0.0187	94.8	75 - 125	0.959	0.755	20	
Lab Sample ID: 1508435-001BMSD													
Date Analyzed:		08/26/2015 904h											
Test Code:		HG-DW-245.1											
Date Prepared:		08/25/2015 1700h											
Mercury	0.00339	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000025	101	80 - 120	0.00385	12.6	20	
Lab Sample ID: 1508436-001CMSD													
Date Analyzed:		08/27/2015 1002h											
Test Code:		HG-DW-DIS-245.1											
Date Prepared:		08/26/2015 1550h											
Mercury	0.00321	mg/L	E245.1	0.00000892	0.000150	0.003330	0	96.5	85 - 115	0.00355	9.96	20	
Lab Sample ID: 1508437-001CMSD													
Date Analyzed:		08/27/2015 1018h											
Test Code:		HG-DW-DIS-245.1											
Date Prepared:		08/26/2015 1550h											
Mercury	0.00317	mg/L	E245.1	0.00000892	0.000150	0.003330	0	95.2	85 - 115	0.0035	9.94	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
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: 1508435-001CMSD	Date Analyzed:	08/27/2015	949h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h										
Mercury	0.00329	mg/L	E245.1	0.00000892	0.000150	0.003330	0	98.9	85 - 115	0.0032	3.03	20	

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

1508435-002BMSD: Internal standard areas were outside of the QC limits. Reanalysis and/or MS and/or MSD samples yielded similar results indicating matrix interference.

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: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
Dept: WC
QC Type: DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1508435-001ADUP Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	660	µmhos/cm	SM2510B	0.436	2.00					661	0.151	5	
Lab Sample ID: 1508436-001ADUP Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	655	µmhos/cm	SM2510B	0.436	2.00					658	0.457	5	
Lab Sample ID: 1508437-001ADUP Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	697	µmhos/cm	SM2510B	0.436	2.00					699	0.287	5	
Lab Sample ID: 1508435-005ADUP Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.24	pH Units	SM4500-H+B	1.00	1.00					8.26	0.242	5	H
Lab Sample ID: 1508436-005ADUP Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.50	pH Units	SM4500-H+B	1.00	1.00					8.52	0.235	5	H
Lab Sample ID: 1508437-004ADUP Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.32	pH Units	SM4500-H+B	1.00	1.00					8.33	0.120	5	H
Lab Sample ID: 1508435-001ADUP Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	430	mg/L	SM2540C	30.6	50.0					320	29.3	5	@
Lab Sample ID: 1508436-001ADUP Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	340	mg/L	SM2540C	30.6	50.0					350	2.90	5	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
Dept: WC
QC Type: DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1508437-001ADUP Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	410	mg/L	SM2540C	30.6	50.0					320	24.7	5	@
Lab Sample ID: 1508435-003ADUP Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	196	mg/L	SM2540D	14.2	15.0					212	7.84	5	@
Lab Sample ID: 1508436-001ADUP Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	306	mg/L	SM2540D	14.2	15.0					290	5.37	5	@
Lab Sample ID: 1508437-002ADUP Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	288	mg/L	SM2540D	14.2	15.0					312	8.00	5	@

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

H - Sample was received outside of the holding time.



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: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
Dept: WC
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-R82125 Date Analyzed: 08/25/2015 1423h													
Test Code: 300.0-W													
Chloride	5.16	mg/L	E300.0	0.00751	0.100	5.000	0	103	90 - 110				
Sulfate	5.03	mg/L	E300.0	0.0211	0.750	5.000	0	101	90 - 110				
Lab Sample ID: LCS-R82043 Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	50,700	mg/L	SM2320B	1.86	10.0	50,000	0	101	90 - 110				
Lab Sample ID: LCS-R82041 Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	998	µmhos/cm	SM2510B	0.436	2.00	1,000	0	99.8	98 - 102				
Lab Sample ID: LCS Date Analyzed: 08/28/2015 1717h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.997	mg/L	E353.2	0.00833	0.0100	1.000	0	99.7	90 - 110				
Lab Sample ID: LCS-R82023 Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.90	pH Units	SM4500-H+B	1.00	1.00	9.000	0	98.9	98 - 102				
Lab Sample ID: LCS-38918 Date Analyzed: 09/01/2015 1036h													
Test Code: PO4-W-4500PF Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	0.932	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0	93.2	90 - 110				
Lab Sample ID: LCS-R82062 Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	198	mg/L	SM2540C	6.13	10.0	205.0	0	96.6	80 - 120				
Lab Sample ID: LCS-R82048 Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	92.0	mg/L	SM2540D	2.83	3.00	100.0	0	92.0	80 - 120				



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508435

Dept: WC

Project: Gold King Mine - San Juan River Sampling

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-R82125													
Date Analyzed: 08/25/2015 1406h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.00751	0.100								U
Sulfate	< 0.750	mg/L	E300.0	0.0211	0.750								U
Lab Sample ID: MB-R82043													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Bicarbonate (as CaCO ₃)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Carbonate (as CaCO ₃)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Lab Sample ID: MB-R82041													
Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	< 2.00	µmhos/cm	SM2510B	0.436	2.00								U
Lab Sample ID: MB													
Date Analyzed: 08/28/2015 1714h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00833	0.0100								U
Lab Sample ID: MB-38918													
Date Analyzed: 09/01/2015 1035h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	0.0230	mg/L	SM4500-P-F	0.0212	0.0500								JB
Lab Sample ID: MB-R82062													
Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	< 10.0	mg/L	SM2540C	6.13	10.0								U
Lab Sample ID: MB-R82048													
Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.83	3.00								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: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
Dept: WC
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
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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

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508435

Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan

Dept: WC

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: 1508435-001AMS													
Date Analyzed: 08/25/2015 1655h													
Test Code: 300.0-W													
Chloride	64.0	mg/L	E300.0	0.0751	1.00	50.00	15.5	97.1	90 - 110				
Sulfate	190	mg/L	E300.0	0.211	7.50	50.00	143	94.9	90 - 110				
Lab Sample ID: 1508436-001AMS													
Date Analyzed: 08/25/2015 1853h													
Test Code: 300.0-W													
Chloride	63.7	mg/L	E300.0	0.0751	1.00	50.00	15.6	96.2	90 - 110				
Sulfate	186	mg/L	E300.0	0.211	7.50	50.00	140	92.8	90 - 110				
Lab Sample ID: 1508437-001AMS													
Date Analyzed: 08/25/2015 2124h													
Test Code: 300.0-W													
Chloride	63.9	mg/L	E300.0	0.0751	1.00	50.00	15.7	96.4	90 - 110				
Sulfate	188	mg/L	E300.0	0.211	7.50	50.00	142	93.2	90 - 110				
Lab Sample ID: 1508435-001AMS													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	213	mg/L	SM2320B	1.86	10.0	100.0	115	98.0	80 - 120				
Lab Sample ID: 1508436-001AMS													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	226	mg/L	SM2320B	1.86	10.0	100.0	123	103	80 - 120				
Lab Sample ID: 1508437-001AMS													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	225	mg/L	SM2320B	1.86	10.0	100.0	122	103	80 - 120				
Lab Sample ID: 1508435-001DMS													
Date Analyzed: 08/28/2015 1736h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	4.53	mg/L	E353.2	0.0417	0.0500	5.000	0	90.6	90 - 110				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
Dept: WC
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: 1508436-001DMS													
Date Analyzed: 08/28/2015 1759h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	5.28	mg/L	E353.2	0.0417	0.0500	5.000	0.0762	104	90 - 110				
Lab Sample ID: 1508435-005DMS													
Date Analyzed: 09/01/2015 1040h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	1.64	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.743	90.2	90 - 110				
Lab Sample ID: 1508436-005DMS													
Date Analyzed: 09/01/2015 1048h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	1.51	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.613	89.9	90 - 110				§
Lab Sample ID: 1508437-004DMS													
Date Analyzed: 09/01/2015 1057h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	1.09	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.109	98.3	90 - 110				

§ - QC limits are set with an accuracy of two significant figures, therefore the recovery rounds to an acceptable value within the control limits.



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Kyle F. Gross
Laboratory Director

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QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
Dept: WC
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: 1508435-001AMSD													
Date Analyzed: 08/25/2015 1712h													
Test Code: 300.0-W													
Chloride	64.4	mg/L	E300.0	0.0751	1.00	50.00	15.5	97.8	90 - 110	64	0.540	20	
Sulfate	190	mg/L	E300.0	0.211	7.50	50.00	143	94.6	90 - 110	190	0.0751	20	
Lab Sample ID: 1508436-001AMSD													
Date Analyzed: 08/25/2015 1909h													
Test Code: 300.0-W													
Chloride	63.8	mg/L	E300.0	0.0751	1.00	50.00	15.6	96.4	90 - 110	63.7	0.134	20	
Sulfate	187	mg/L	E300.0	0.211	7.50	50.00	140	94.3	90 - 110	186	0.389	20	
Lab Sample ID: 1508437-001AMSD													
Date Analyzed: 08/25/2015 2141h													
Test Code: 300.0-W													
Chloride	63.8	mg/L	E300.0	0.0751	1.00	50.00	15.7	96.3	90 - 110	63.9	0.124	20	
Sulfate	189	mg/L	E300.0	0.211	7.50	50.00	142	95.7	90 - 110	188	0.666	20	
Lab Sample ID: 1508435-001AMSD													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	216	mg/L	SM2320B	1.86	10.0	100.0	115	101	80 - 120	213	1.58	10	
Lab Sample ID: 1508436-001AMSD													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	230	mg/L	SM2320B	1.86	10.0	100.0	123	106	80 - 120	227	1.45	10	
Lab Sample ID: 1508437-001AMSD													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	223	mg/L	SM2320B	1.86	10.0	100.0	122	101	80 - 120	225	0.759	10	
Lab Sample ID: 1508435-001DMSD													
Date Analyzed: 08/28/2015 1737h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	4.61	mg/L	E353.2	0.0417	0.0500	5.000	0	92.3	90 - 110	4.53	1.77	10	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508435
Project: Gold King Mine - San Juan River Sampling

Contact: Lenora Sullivan
Dept: WC
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: 1508436-001DMSD													
Date Analyzed: 08/28/2015 1801h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	5.37	mg/L	E353.2	0.0417	0.0500	5.000	0.0762	106	90 - 110	5.28	1.75	10	
Lab Sample ID: 1508435-005DMSD													
Date Analyzed: 09/01/2015 1041h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	1.65	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.743	90.8	90 - 110	1.65	0.364	10	
Lab Sample ID: 1508436-005DMSD													
Date Analyzed: 09/01/2015 1049h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	1.53	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.613	91.9	90 - 110	1.51	1.31	10	
Lab Sample ID: 1508437-004DMSD													
Date Analyzed: 09/01/2015 1057h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	1.07	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.109	96.2	90 - 110	1.09	1.94	10	

WORK ORDER Summary

Work Order: **1508435** Page 1 of 5

Client: Utah Division of Water Quality
Client ID: UTD200
Project: Gold King Mine - San Juan River Sampling
Comments: QC 2+. Flag any concentrations detected less than RL and at or greater than the MDL with a J flag. Include EDD. Samples for Dissolved Metals were field filtered. Cc: jamesharris@utah.gov and Trisha Johnson;

Contact: Lenora Sullivan

Due Date: 9/4/2015

QC Level: II+ MDL

WO Type: Standard

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508435-001A	San Juan R at Mexican Hat US163 Xing (4953000)	8/18/2015 1155h	8/21/2015 0926h	300.0-W	Aqueous		df - wc
				<i>2 SEL Analytes: CL SO4</i>			
				ALK-W-2320B			df - wc
				<i>3 SEL Analytes: ALK ALKB ALKC</i>			
				COND-W-2510B			df - wc
				PH-4500H+B			df - wc
				TDS-W-2540C			df - wc
				TSS-W-2540D			df - wc
1508435-001B				200.7-W			df - metals
				<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
				HARD-2340B			df - metals
				HG-DW-245.1			df - metals
				HG-DW-PR			df - metals
1508435-001C				200.7-DIS			df - dis met
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-DIS-PR			df - dis met
				200.8-DIS			df - dis met
				<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 met
				HARD-2340B			df - dis met
				<i>1 SEL Analytes: HARD</i>			
				HG-DW-DIS-245.1			df - dis met
				HG-DW-DIS-PR			df - dis met
1508435-001D				NO2/NO3-W-353.2			df - no2/no3
				PO4-W-4500PF			df - no2/no3

WORK ORDER Summary

Work Order: **1508435**

Page 2 of 5

Client: Utah Division of Water Quality

Due Date: 9/4/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508435-001D	San Juan R at Mexican Hat US163 Xing (4953000)	8/18/2015 1155h	8/21/2015 0926h	PO4-W-PR	Aqueous		df - no2/no3 1
1508435-002A	San Juan R at Sand Island (4953250)	8/18/2015 1122h	8/21/2015 0926h	300.0-W 2 SEL Analytes: CL SO4	Aqueous		df - wc 1
				ALK-W-2320B			df - wc
				3 SEL Analytes: ALK ALKB ALKC			
				COND-W-2510B			df - wc
				PH-4500H+B			df - wc
				TDS-W-2540C			df - wc
				TSS-W-2540D			df - wc
1508435-002B				200.7-W 6 SEL Analytes: AL CA FE MG K NA			df - metals
				200.7-W-PR			df - metals
				200.8-W 17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			df - metals
				200.8-W-PR			df - metals
				HARD-2340B			df - metals
				HG-DW-245.1			df - metals
				HG-DW-PR			df - metals
1508435-002C				200.7-DIS 6 SEL Analytes: AL CA FE MG K NA			df - dis met
				200.7-DIS-PR			df - dis met
				200.8-DIS 17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			df - dis met
				200.8-DIS-PR			df - dis met
				HARD-2340B 1 SEL Analytes: HARD			df - dis met
				HG-DW-DIS-245.1			df - dis met
				HG-DW-DIS-PR			df - dis met
1508435-002D				NO2/NO3-W-353.2			df - no2/no3
				PO4-W-4500PF			df - no2/no3
				PO4-W-PR			df - no2/no3
1508435-003A	San Juan River at Town of Montezuma (4953990)	8/18/2015 0841h	8/21/2015 0926h	300.0-W 2 SEL Analytes: CL SO4	Aqueous		df - wc 1
				ALK-W-2320B			df - wc
				3 SEL Analytes: ALK ALKB ALKC			

WORK ORDER Summary

Work Order: **1508435**

Page 3 of 5

Client: Utah Division of Water Quality

Due Date: 9/4/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage					
1508435-003A	San Juan River at Town of Montezuma (4953990)	8/18/2015 0841h	8/21/2015 0926h	COND-W-2510B	Aqueous		df - wc					
				PH-4500H+B		df - wc						
				TDS-W-2540C		df - wc						
				TSS-W-2540D		df - wc						
1508435-003B				200.7-W			df - metals					
				6 SEL Analytes: AL CA FE MG K NA								
				200.7-W-PR		df - metals						
				200.8-W		df - metals						
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN								
				200.8-W-PR		df - metals						
				HARD-2340B		df - metals						
				HG-DW-245.1		df - metals						
				HG-DW-PR		df - metals						
				1508435-003C					200.7-DIS			df - dis met
6 SEL Analytes: AL CA FE MG K NA												
200.7-DIS-PR	df - dis met											
200.8-DIS	df - dis met											
17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN												
200.8-DIS-PR	df - dis met											
HARD-2340B	df - dis met											
1 SEL Analytes: HARD												
1508435-003D				HG-DW-DIS-245.1			df - dis met					
				HG-DW-DIS-PR		df - dis met						
				NO2/NO3-W-353.2		df - no2/no3						
				PO4-W-4500PF		df - no2/no3						
1508435-004A	San Juan R at US160 Xing in CO (4954000)	8/18/2015 0956h	8/21/2015 0926h	300.0-W	Aqueous		df - wc					
				2 SEL Analytes: CL SO4								
				ALK-W-2320B		df - wc						
				3 SEL Analytes: ALK ALKB ALKC								
				COND-W-2510B		df - wc						
				PH-4500H+B		df - wc						
				TDS-W-2540C		df - wc						
				TSS-W-2540D		df - wc						
				1508435-004B					200.7-W			df - metals
									6 SEL Analytes: AL CA FE MG K NA			

WORK ORDER Summary

Work Order: **1508435**

Page 4 of 5

Client: Utah Division of Water Quality

Due Date: 9/4/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508435-004B	San Juan R at US160 Xing in CO (4954000)	8/18/2015 0956h	8/21/2015 0926h	200.7-W-PR	Aqueous		df - metals
				200.8-W		df - metals	
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			
				200.8-W-PR		df - metals	
				HARD-2340B		df - metals	
				HG-DW-245.1		df - metals	
				HG-DW-PR		df - metals	
1508435-004C				200.7-DIS			df - dis met
				6 SEL Analytes: AL CA FE MG K NA			
				200.7-DIS-PR	df - dis met		
				200.8-DIS	df - dis met		
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			
				200.8-DIS-PR	df - dis met		
				HARD-2340B	df - dis met		
1508435-004D				1 SEL Analytes: HARD			
				HG-DW-DIS-245.1	df - dis met		
				HG-DW-DIS-PR	df - dis met		
				NO2/NO3-W-353.2	df - no2/no3		
				PO4-W-4500PF	df - no2/no3		
				PO4-W-PR	df - no2/no3		
				1508435-005A	San Juan R at CH	8/18/2015 1345h	8/21/2015 0926h
2 SEL Analytes: CL SO4							
ALK-W-2320B	df - wc						
3 SEL Analytes: ALK ALKB ALKC							
COND-W-2510B	df - wc						
PH-4500H+B	df - wc						
TDS-W-2540C	df - wc						
TSS-W-2540D	df - wc						
1508435-005B				200.7-W			df - metals
				6 SEL Analytes: AL CA FE MG K NA			
				200.7-W-PR	df - metals		
				200.8-W	df - metals		
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			
				200.8-W-PR	df - metals		
				HARD-2340B	df - metals		
HG-DW-245.1	df - metals						

WORK ORDER Summary

Work Order: **1508435** Page 5 of 5

Client: Utah Division of Water Quality

Due Date: 9/4/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage			
1508435-005B	San Juan R at CH	8/18/2015 1345h	8/21/2015 0926h	HG-DW-PR	Aqueous	df - metals	1		
1508435-005C				200.7-DIS		df - dis met			
				<i>6 SEL Analytes: AL CA FE MG K NA</i>					
				200.7-DIS-PR		df - dis met			
				200.8-DIS		df - dis met			
				<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 met			
				HARD-2340B		df - dis met			
				<i>1 SEL Analytes: HARD</i>					
				HG-DW-DIS-245.1		df - dis met			
				HG-DW-DIS-PR		df - dis met			
1508435-005D						NO2/NO3-W-353.2		df - no2/no3	
						PO4-W-4500PF		df - no2/no3	
			PO4-W-PR		df - no2/no3				

American West Analytical Laboratories

Chain of Custody

Lab Sample Set #

1508435

Client: **Utah Division of Water Quality**
 Address: **PO Box 144870**
Salt Lake City, UT 84114-4870

Contact: **Lenora Sullivan**
 Phone: **801-536-4367**
 Fax: **801-536-4301**

Page 1 of 1

Project Name: **Gold King Mine - San Juan River Sampling**
 PO#:

Email: **lenoras@utah.gov**
jamesharris@utah.gov (please copy on results)

QC Level: 2+

TAT - ASAP
 STD

Sample ID:	Date Sampled	Time	# of Containers	Sample Matrix	Total Chemistry: pH, Alkalinity, Anions, TDS, TSS, Conductivity	Total TAL Metals + Mo + Hardness (200.7: Al, Ca, Fe, K, Mg, Na, 200.8: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Mo, N, Ag, Se, Ti, V, Zn, 245.1: Hg)	Dissolved TAL Metals + Mo + Hardness (200.7: Al, Ca, Fe, K, Mg, Na, 200.8: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Mo, N, Ag, Se, Ti, V, Zn, 245.1: Hg)	Total Nutrients: Phosphate, Nitrate&Nitrite	Comments	Laboratory Use Only
SAN JUAN R AT MEXICAN HAT US163 XING (4953000)	8/10/15	11:55	W						Dissolved Metals samples have been field filtered.	Samples Were: 1 Shipped or hand delivered <input checked="" type="checkbox"/> 2 Ambient or Chilled <input checked="" type="checkbox"/> 3 Temperature 7.6 4 Received Broken/Leaking (Improperly Sealed) <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> 5 Properly Preserved <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> 6 Received Within Holding Times <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/>
SAN JUAN R AT SAND ISLAND (4953250)	8/10/15	11:22	W						Samples collected from river monitoring following a mine waste dump release. Please flag any concentrations detected less than RL and at or greater than the MDL with a J qualifier. Please include EDD.	COC Tape Was: Present on Outer Package <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> 2 Unbroken on Outer Package <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> 3 Present on Sample <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/> 4 Unbroken on Sample <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
San Juan River at Town of Montezuma (4953990)	8/10/15	08:41	W							Discrepancies Between Sample Labels and COC Record? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
SAN JUAN R AT US160 XING IN CO (4954000)	8/10/15	09:56	W							
SJROCH	8/10/15	13:45	W							

Special Instructions:

Relinquished by: Signature <i>[Signature]</i>	Date: 8/20/15	Received by: Signature <i>[Signature]</i>	Date: 8/21/15
Print Name: Robert W Bird	Time: 17:30	Print Name: Elmer Hays	Time: 9:20
Relinquished by: Signature <i>[Signature]</i>	Date: 8/21	Received by: Signature <i>[Signature]</i>	Date: 8/21/15
Print Name: Ryan Thomas	Time: 9:20	Print Name: Elmer Hays	Time: 9:20

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	1	2	3	4	5													
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	yes	yes													
NO ₂ & NO ₃	pH <2 H ₂ SO ₄	yes	yes	yes	yes	yes													
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																		

- 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.