



3440 South 700 West
Salt Lake City, UT 84119

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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: 1508263

American West Analytical Laboratories received sample(s) on 8/13/2015 for the analyses presented in the following report.

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

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

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

Thank You,

Approved by: _____
Laboratory Director or designee



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Kyle F. Gross
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Jose Rocha
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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: 1508263-001
Client Sample ID: San Juan R @ Mexican Hat US163 Xing (4953000)
Collection Date: 8/12/2015 1750h
Received Date: 8/13/2015 1450h

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	8/13/2015 1632h	8/13/2015 2258h	E200.7	0.237	1.00	71.4	
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 2022h	E200.8	0.0000366	0.00200	0.000224	J
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.0000920	0.00200	0.0227	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2347h	E200.8	0.00269	0.0100	2.01	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.0000288	0.00200	0.00874	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.000193	0.000500	0.00155	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2258h	E200.7	0.401	10.0	282	
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.00154	0.00200	0.0285	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.0000434	0.00400	0.0401	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.000692	0.00200	0.0824	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2331h	E200.7	0.0767	0.100	38.6	
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.000264	0.00200	0.101	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2331h	E200.7	0.0294	1.00	47.9	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2347h	E200.8	0.00764	0.0100	3.07	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1012h	E245.1	0.00000892	0.000150	0.000180	
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.000206	0.00200	0.000234	J
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.000754	0.00200	0.0517	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2331h	E200.7	0.247	1.00	14.0	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.0000634	0.00200	0.00153	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.0000244	0.00200	0.000539	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2331h	E200.7	0.0330	1.00	55.6	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.0000242	0.00200	0.000632	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.000438	0.00440	0.0785	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2307h	E200.8	0.00476	0.00500	0.210	

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



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Kyle F. Gross
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: 1508263-002
Client Sample ID: San Juan R @ Sand Island (4953250)
Collection Date: 8/12/2015 1112h
Received Date: 8/13/2015 1450h

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	8/13/2015 1632h	8/13/2015 2333h	E200.7	0.0237	0.100	45.4	²
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 2025h	E200.8	0.0000366	0.00200	0.000202	J ¹
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.0000920	0.00200	0.0149	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.000538	0.00200	0.971	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.0000288	0.00200	0.00516	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.000193	0.000500	0.000940	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.7	0.401	10.0	109	²
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.00154	0.00200	0.0200	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.0000434	0.00400	0.0279	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.000692	0.00200	0.0767	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2333h	E200.7	0.0767	0.100	34.6	²
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.000264	0.00200	0.0674	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2333h	E200.7	0.0294	1.00	21.9	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.00153	0.00200	1.67	²
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1014h	E245.1	0.0000892	0.000150	0.000128	J
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.000206	0.00200	0.000344	J ¹
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.000754	0.00200	0.0303	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2333h	E200.7	0.247	1.00	8.43	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.0000634	0.00200	0.00110	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.0000244	0.00200	0.000383	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2333h	E200.7	0.0330	1.00	38.4	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.0000242	0.00200	0.000565	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.000438	0.00440	0.0514	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.8	0.00476	0.00500	0.176	

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

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

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



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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: 1508263-003
Client Sample ID: San Juan River @ Town of Montezuma (4953990)
Collection Date: 8/12/2015 1037h
Received Date: 8/13/2015 1450h

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	8/13/2015 1632h	8/13/2015 2339h	E200.7	0.0237	0.100	31.5	
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 2035h	E200.8	0.0000366	0.00200	0.000247	J
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.0000920	0.00200	0.0102	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.000538	0.00200	0.720	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.0000288	0.00200	0.00362	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.000193	0.000500	0.000855	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2306h	E200.7	0.401	10.0	108	
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.00154	0.00200	0.0147	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.0000434	0.00400	0.0195	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.000692	0.00200	0.0517	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2339h	E200.7	0.0767	0.100	24.4	
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.000264	0.00200	0.0491	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2339h	E200.7	0.0294	1.00	18.4	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.00153	0.00200	1.19	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1006h	E245.1	0.00000892	0.000150	0.0000783	J
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.000206	0.00200	0.000450	J
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.000754	0.00200	0.0227	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2339h	E200.7	0.247	1.00	7.04	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.0000634	0.00200	0.00106	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.0000244	0.00200	0.000481	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2339h	E200.7	0.0330	1.00	33.0	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.0000242	0.00200	0.000458	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.000438	0.00440	0.0386	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2320h	E200.8	0.00476	0.00500	0.131	

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: 1508263-004
Client Sample ID: San Juan R @ US160 Xing in CO (4954000)
Collection Date: 8/12/2015 950h
Received Date: 8/13/2015 1450h

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	8/13/2015 1632h	8/13/2015 2341h	E200.7	0.0237	0.100	31.1	
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 2038h	E200.8	0.0000366	0.00200	0.000230	J
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.0000920	0.00200	0.0111	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.000538	0.00200	0.766	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.0000288	0.00200	0.00316	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.000193	0.000500	0.000905	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2308h	E200.7	0.401	10.0	164	
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.00154	0.00200	0.0161	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.0000434	0.00400	0.0186	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.000692	0.00200	0.0437	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2341h	E200.7	0.0767	0.100	22.6	
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.000264	0.00200	0.0474	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2341h	E200.7	0.0294	1.00	24.7	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.00153	0.00200	1.25	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1015h	E245.1	0.00000892	0.000150	0.0000983	J
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.000206	0.00200	0.000771	J
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.000754	0.00200	0.0289	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2341h	E200.7	0.247	1.00	7.90	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.0000634	0.00200	0.00104	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.0000244	0.00200	0.000314	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2341h	E200.7	0.0330	1.00	32.7	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.0000242	0.00200	0.000464	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.000438	0.00440	0.0437	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2324h	E200.8	0.00476	0.00500	0.131	

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



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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: 1508263-001
Client Sample ID: San Juan R @ Mexican Hat US163 Xing (4953000)
Collection Date: 8/12/2015 1750h
Received Date: 8/13/2015 1450h

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	8/14/2015 830h	8/14/2015 1401h	E200.7	0.0237	0.100	0.105	
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.0000366	0.00200	0.00223	#B
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.0000920	0.00200	0.00179	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.000538	0.00200	0.185	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.0000288	0.00200	0.0000863	J
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1401h	E200.7	0.0401	1.00	48.9	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.0000434	0.00400	0.0000691	J
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.000692	0.00200	0.00319	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1401h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1401h	E200.7	0.0294	1.00	7.22	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1101h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.000206	0.00200	0.00264	
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1401h	E200.7	0.247	1.00	3.16	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.0000634	0.00200	0.00116	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.0000244	0.00200	0.000264	J
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1401h	E200.7	0.0330	1.00	48.7	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.000438	0.00440	0.00434	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1515h	E200.8	0.00476	0.00500	0.0161	

- Sb LCS recovery suggests analyte concentration may be biased low. Samples cannot be rerun due to insufficient sample volume.

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

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508263-002
Client Sample ID: San Juan R @ Sand Island (4953250)
Collection Date: 8/12/2015 1112h
Received Date: 8/13/2015 1450h

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	8/14/2015 830h	8/14/2015 1403h	E200.7	0.0237	0.100	0.623	
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.0000366	0.00200	0.00108	J#B
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.0000920	0.00200	0.00141	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.000538	0.00200	0.205	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.0000288	0.00200	0.0000499	J
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1403h	E200.7	0.0401	1.00	46.8	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.0000434	0.00400	0.000154	J
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.000692	0.00200	0.00344	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1403h	E200.7	0.0767	0.100	0.310	
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1403h	E200.7	0.0294	1.00	6.98	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.00153	0.00200	0.00447	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1103h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.000206	0.00200	0.00193	J
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1403h	E200.7	0.247	1.00	2.91	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.0000634	0.00200	0.000793	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.0000244	0.00200	0.0000594	J
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1403h	E200.7	0.0330	1.00	37.8	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.000438	0.00440	0.00261	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1519h	E200.8	0.00476	0.00500	0.0145	

- Sb LCS recovery suggests analyte concentration may be biased low. Samples cannot be rerun due to insufficient sample volume.

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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: 1508263-003
Client Sample ID: San Juan River @ Town of Montezuma (4953990)
Collection Date: 8/12/2015 1037h
Received Date: 8/13/2015 1450h

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	8/14/2015 830h	8/14/2015 1405h	E200.7	0.0237	0.100	0.0675	J
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.0000366	0.00200	0.000799	J#B
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.0000920	0.00200	0.00110	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.000538	0.00200	0.202	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.0000288	0.00200	0.0000304	J
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1405h	E200.7	0.0401	1.00	48.3	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.0000434	0.00400	< 0.00400	U
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.000692	0.00200	0.00249	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1405h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1405h	E200.7	0.0294	1.00	7.23	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1052h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.000206	0.00200	0.00166	J
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1405h	E200.7	0.247	1.00	2.67	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.0000634	0.00200	0.000798	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.0000244	0.00200	0.0000397	J
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1405h	E200.7	0.0330	1.00	31.9	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.000438	0.00440	0.00168	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1522h	E200.8	0.00476	0.00500	0.0135	

- Sb LCS recovery suggests analyte concentration may be biased low. Samples cannot be rerun due to insufficient sample volume.

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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: 1508263-004
Client Sample ID: San Juan R @ US160 Xing in CO (4954000)
Collection Date: 8/12/2015 950h
Received Date: 8/13/2015 1450h

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	8/14/2015 830h	8/14/2015 1407h	E200.7	0.0237	0.100	0.104	
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.0000366	0.00200	0.000586	J#B
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.0000920	0.00200	0.000879	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.000538	0.00200	0.178	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1427h	E200.7	0.201	5.00	52.1	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.0000434	0.00400	0.0000614	J
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.000692	0.00200	0.00239	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1407h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1407h	E200.7	0.0294	1.00	7.20	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1104h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.000206	0.00200	0.00147	J
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1407h	E200.7	0.247	1.00	2.79	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.0000634	0.00200	0.000782	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.0000244	0.00200	0.0000252	J
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1407h	E200.7	0.0330	1.00	30.3	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.000438	0.00440	0.00190	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1525h	E200.8	0.00476	0.00500	0.0148	

- Sb LCS recovery suggests analyte concentration may be biased low. Samples cannot be rerun due to insufficient sample volume.

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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INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508263-001
Client Sample ID: San Juan R @ Mexican Hat US163 Xing (4953000)
Collection Date: 8/12/2015 1750h
Received Date: 8/13/2015 1450h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	112	
Bicarbonate (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	112	
Carbonate (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 2315h	E300.0	0.0751	1.00	9.83	B
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	648	B
Hardness (as CaCO ₃)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	902	
Hardness, Dissolved (as CaCO ₃)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	152	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/14/2015 001h	E353.2	0.00833	0.0100	0.415	
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.29	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1301h	SM4500-P-F	0.0424	0.100	5.72	@ ¹ B
Sulfate	14808-79-8	mg/L		8/13/2015 2315h	E300.0	0.211	7.50	143	
Total Dissolved Solids		mg/L		8/13/2015 2100h	SM2540C	30.6	50.0	470	
Total Suspended Solids	TSS	mg/L		8/13/2015 1610h	SM2540D	142	150	8,760	

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

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.

H - Sample was received outside of the holding time.

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



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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: 1508263-002
Client Sample ID: San Juan R @ Sand Island (4953250)
Collection Date: 8/12/2015 1112h
Received Date: 8/13/2015 1450h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	105	
Bicarbonate (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	105	
Carbonate (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/14/2015 005h	E300.0	0.0751	1.00	8.35	B
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	560	B
Hardness (as CaCO ₃)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	363	
Hardness, Dissolved (as CaCO ₃)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	146	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/14/2015 003h	E353.2	0.00833	0.0100	0.353	
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.36	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1245h	SM4500-P-F	0.0212	0.0500	1.39	B
Sulfate	14808-79-8	mg/L		8/14/2015 005h	E300.0	0.211	7.50	112	
Total Dissolved Solids		mg/L		8/13/2015 2100h	SM2540C	30.6	50.0	450	@
Total Suspended Solids	TSS	mg/L		8/13/2015 1610h	SM2540D	142	150	4,640	@

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

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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: 1508263-003
Client Sample ID: San Juan River @ Town of Montezuma (4953990)
Collection Date: 8/12/2015 1037h
Received Date: 8/13/2015 1450h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	101	
Bicarbonate (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	101	
Carbonate (as CaCO ₃)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/14/2015 056h	E300.0	0.0751	1.00	8.39	B
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	557	B
Hardness (as CaCO ₃)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	346	
Hardness, Dissolved (as CaCO ₃)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	150	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/14/2015 012h	E353.2	0.00833	0.0100	0.337	
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.32	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1246h	SM4500-P-F	0.0212	0.0500	1.21	B
Sulfate	14808-79-8	mg/L		8/14/2015 056h	E300.0	0.211	7.50	114	
Total Dissolved Solids		mg/L		8/13/2015 2100h	SM2540C	30.6	50.0	560	
Total Suspended Solids	TSS	mg/L		8/13/2015 1610h	SM2540D	142	150	3,860	

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

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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: 1508263-004
Client Sample ID: San Juan R @ US160 Xing in CO (4954000)
Collection Date: 8/12/2015 950h
Received Date: 8/13/2015 1450h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	110	
Bicarbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	110	
Carbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/14/2015 113h	E300.0	0.0751	1.00	9.39	B
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	566	B
Hardness (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	511	
Hardness, Dissolved (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	160	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/14/2015 014h	E353.2	0.00833	0.0100	0.317	
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.20	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1247h	SM4500-P-F	0.0212	0.0500	1.67	B
Sulfate	14808-79-8	mg/L		8/14/2015 113h	E300.0	0.211	7.50	118	
Total Dissolved Solids		mg/L		8/13/2015 2100h	SM2540C	30.6	50.0	620	
Total Suspended Solids	TSS	mg/L		8/13/2015 1610h	SM2540D	142	150	3,120	

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.



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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: 1508263

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-38557													
Date Analyzed:		08/14/2015 1334h											
Test Code:		200.7-DIS											
Date Prepared:		08/14/2015 830h											
Aluminum	0.952	mg/L	E200.7	0.0237	0.100	1.000	0	95.2	85 - 115				
Calcium	9.41	mg/L	E200.7	0.0401	1.00	10.00	0	94.1	85 - 115				
Iron	0.935	mg/L	E200.7	0.0767	0.100	1.000	0	93.5	85 - 115				
Magnesium	9.79	mg/L	E200.7	0.0294	1.00	10.00	0	97.9	85 - 115				
Potassium	9.52	mg/L	E200.7	0.247	1.00	10.00	0	95.2	85 - 115				
Sodium	9.24	mg/L	E200.7	0.0330	1.00	10.00	0	92.4	85 - 115				
Lab Sample ID: LCS-38535													
Date Analyzed:		08/13/2015 2231h											
Test Code:		200.7-W											
Date Prepared:		08/13/2015 1632h											
Aluminum	0.956	mg/L	E200.7	0.0237	0.100	1.000	0	95.6	85 - 115				
Calcium	9.62	mg/L	E200.7	0.0401	1.00	10.00	0	96.2	85 - 115				
Iron	0.916	mg/L	E200.7	0.0767	0.100	1.000	0	91.6	85 - 115				
Magnesium	9.58	mg/L	E200.7	0.0294	1.00	10.00	0	95.8	85 - 115				
Potassium	9.57	mg/L	E200.7	0.247	1.00	10.00	0	95.7	85 - 115				
Sodium	9.31	mg/L	E200.7	0.0330	1.00	10.00	0	93.1	85 - 115				
Lab Sample ID: LCS-38558													
Date Analyzed:		08/14/2015 1423h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Antimony	0.153	mg/L	E200.8	0.0000366	0.00200	0.2000	0	76.3	85 - 115				#
Arsenic	0.204	mg/L	E200.8	0.0000920	0.00200	0.2000	0	102	85 - 115				
Barium	0.184	mg/L	E200.8	0.000538	0.00200	0.2000	0	91.9	85 - 115				
Beryllium	0.200	mg/L	E200.8	0.0000288	0.00200	0.2000	0	100	85 - 115				
Cadmium	0.188	mg/L	E200.8	0.000193	0.000500	0.2000	0	93.9	85 - 115				
Chromium	0.189	mg/L	E200.8	0.00154	0.00200	0.2000	0	94.3	85 - 115				
Cobalt	0.184	mg/L	E200.8	0.0000434	0.00400	0.2000	0	92.1	85 - 115				
Copper	0.188	mg/L	E200.8	0.000692	0.00200	0.2000	0	94.2	85 - 115				
Lead	0.185	mg/L	E200.8	0.000264	0.00200	0.2000	0	92.3	85 - 115				
Manganese	0.187	mg/L	E200.8	0.00153	0.00200	0.2000	0	93.6	85 - 115				
Molybdenum	0.184	mg/L	E200.8	0.000206	0.00200	0.2000	0	92.2	85 - 115				



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Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508263

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-38558													
Date Analyzed:		08/14/2015 1423h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Nickel	0.184	mg/L	E200.8	0.000754	0.00200	0.2000	0	92.1	85 - 115				
Selenium	0.202	mg/L	E200.8	0.0000634	0.00200	0.2000	0	101	85 - 115				
Silver	0.186	mg/L	E200.8	0.0000244	0.00200	0.2000	0	92.9	85 - 115				
Thallium	0.182	mg/L	E200.8	0.0000242	0.00200	0.2000	0	91.1	85 - 115				
Vanadium	0.187	mg/L	E200.8	0.000438	0.00440	0.2000	0	93.7	85 - 115				
Zinc	0.978	mg/L	E200.8	0.00476	0.00500	1.000	0	97.8	85 - 115				
Lab Sample ID: LCS-38536													
Date Analyzed:		08/13/2015 2214h											
Test Code:		200.8-W											
Date Prepared:		08/13/2015 1632h											
Arsenic	0.213	mg/L	E200.8	0.0000920	0.00200	0.2000	0	106	85 - 115				
Barium	0.196	mg/L	E200.8	0.000538	0.00200	0.2000	0	98.0	85 - 115				
Beryllium	0.213	mg/L	E200.8	0.0000288	0.00200	0.2000	0	106	85 - 115				
Cadmium	0.198	mg/L	E200.8	0.000193	0.000500	0.2000	0	99.1	85 - 115				
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0	99.5	85 - 115				
Cobalt	0.195	mg/L	E200.8	0.0000434	0.00400	0.2000	0	97.3	85 - 115				
Copper	0.197	mg/L	E200.8	0.000692	0.00200	0.2000	0	98.7	85 - 115				
Lead	0.196	mg/L	E200.8	0.000264	0.00200	0.2000	0	98.0	85 - 115				
Manganese	0.199	mg/L	E200.8	0.00153	0.00200	0.2000	0	99.3	85 - 115				
Molybdenum	0.199	mg/L	E200.8	0.000206	0.00200	0.2000	0	99.4	85 - 115				
Nickel	0.194	mg/L	E200.8	0.000754	0.00200	0.2000	0	97.2	85 - 115				
Selenium	0.214	mg/L	E200.8	0.0000634	0.00200	0.2000	0	107	85 - 115				
Silver	0.193	mg/L	E200.8	0.0000244	0.00200	0.2000	0	96.3	85 - 115				
Thallium	0.189	mg/L	E200.8	0.0000242	0.00200	0.2000	0	94.7	85 - 115				
Vanadium	0.199	mg/L	E200.8	0.000438	0.00440	0.2000	0	99.5	85 - 115				
Zinc	1.05	mg/L	E200.8	0.00476	0.00500	1.000	0	105	85 - 115				
Lab Sample ID: LCS-38575													
Date Analyzed:		08/14/2015 1942h											
Test Code:		200.8-W											
Date Prepared:		08/14/2015 1431h											
Antimony	0.175	mg/L	E200.8	0.0000366	0.00200	0.2000	0	87.4	85 - 115				



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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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-38547	Date Analyzed:	08/14/2015	945h										
Test Code: HG-DW-245.1	Date Prepared:	08/13/2015	1830h										
Mercury	0.00338	mg/L	E245.1	0.00000892	0.000150	0.003330	0	102	85 - 115				
Lab Sample ID: LCS-38546	Date Analyzed:	08/14/2015	1019h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/13/2015	1830h										
Mercury	0.00333	mg/L	E245.1	0.00000892	0.000150	0.003330	0	99.9	85 - 115				

- Sb LCS recovery suggests analyte concentration may be biased low. Samples cannot be rerun due to insufficient sample volume.



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508263

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-38557													
Date Analyzed:		08/14/2015 1332h											
Test Code:		200.7-DIS											
Date Prepared:		08/14/2015 830h											
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-38535													
Date Analyzed:		08/13/2015 2228h											
Test Code:		200.7-W											
Date Prepared:		08/13/2015 1632h											
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-38558													
Date Analyzed:		08/14/2015 1420h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Antimony	0.000253	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



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508263

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-38558	Date Analyzed:	08/14/2015	1420h										
Test Code:	200.8-DIS	Date Prepared:	08/14/2015	830h									
Nickel	< 0.00200	mg/L	E200.8	0.000754	0.00200								U
Selenium	0.0000681	mg/L	E200.8	0.0000634	0.00200								JB
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-38536	Date Analyzed:	08/13/2015	2211h										
Test Code:	200.8-W	Date Prepared:	08/13/2015	1632h									
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	< 0.00200	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-38575	Date Analyzed:	08/14/2015	1939h										
Test Code:	200.8-W	Date Prepared:	08/14/2015	1431h									
Antimony	< 0.00200	mg/L	E200.8	0.0000366	0.00200								U



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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-38547	Date Analyzed:	08/14/2015	943h										
Test Code:	HG-DW-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U
Lab Sample ID: MB-38546	Date Analyzed:	08/14/2015	1017h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/13/2015	1830h									
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.

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: 1508263
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: 1508262-004CMS													
Date Analyzed:	08/14/2015 1349h												
Test Code:	200.7-DIS												
Date Prepared:	08/14/2015 830h												
Aluminum	1.13	mg/L	E200.7	0.0237	0.100	1.000	0.155	97.0	70 - 130				
Calcium	58.1	mg/L	E200.7	0.0401	1.00	10.00	47.9	102	70 - 130				
Iron	1.00	mg/L	E200.7	0.0767	0.100	1.000	0	100	70 - 130				
Magnesium	17.0	mg/L	E200.7	0.0294	1.00	10.00	6.97	101	70 - 130				
Potassium	12.4	mg/L	E200.7	0.247	1.00	10.00	2.74	96.7	70 - 130				
Sodium	37.6	mg/L	E200.7	0.0330	1.00	10.00	27.3	103	70 - 130				
Lab Sample ID: 1508263-004CMS													
Date Analyzed:	08/14/2015 1409h												
Test Code:	200.7-DIS												
Date Prepared:	08/14/2015 830h												
Aluminum	1.07	mg/L	E200.7	0.0237	0.100	1.000	0.104	96.9	70 - 130				
Iron	0.980	mg/L	E200.7	0.0767	0.100	1.000	0	98.0	70 - 130				
Magnesium	17.2	mg/L	E200.7	0.0294	1.00	10.00	7.2	99.9	70 - 130				
Potassium	12.7	mg/L	E200.7	0.247	1.00	10.00	2.79	99.3	70 - 130				
Sodium	41.4	mg/L	E200.7	0.0330	1.00	10.00	30.3	111	70 - 130				
Lab Sample ID: 1508263-004CMS													
Date Analyzed:	08/14/2015 1429h												
Test Code:	200.7-DIS												
Date Prepared:	08/14/2015 830h												
Calcium	61.5	mg/L	E200.7	0.201	5.00	10.00	52.1	94.7	70 - 130				
Lab Sample ID: 1508262-001BMS													
Date Analyzed:	08/13/2015 2240h												
Test Code:	200.7-W												
Date Prepared:	08/13/2015 1632h												
Aluminum	60.6	mg/L	E200.7	0.237	1.00	1.000	54.7	588	70 - 130				2
Calcium	188	mg/L	E200.7	0.401	10.0	10.00	186	26.3	70 - 130				2
Lab Sample ID: 1508263-002BMS													
Date Analyzed:	08/13/2015 2302h												
Test Code:	200.7-W												
Date Prepared:	08/13/2015 1632h												
Calcium	114	mg/L	E200.7	0.401	10.0	10.00	109	46.1	70 - 130				2



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508263

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: 1508262-001BMS													
Date Analyzed:		08/13/2015 2312h											
Test Code:		200.7-W											
Date Prepared:		08/13/2015 1632h											
Iron	39.2	mg/L	E200.7	0.0767	0.100	1.000	37.5	163	70 - 130				2
Magnesium	43.4	mg/L	E200.7	0.0294	1.00	10.00	33.3	101	70 - 130				
Potassium	20.3	mg/L	E200.7	0.247	1.00	10.00	10.7	95.3	70 - 130				
Sodium	53.3	mg/L	E200.7	0.0330	1.00	10.00	44.4	89.3	70 - 130				
Lab Sample ID: 1508263-002BMS													
Date Analyzed:		08/13/2015 2335h											
Test Code:		200.7-W											
Date Prepared:		08/13/2015 1632h											
Aluminum	49.8	mg/L	E200.7	0.0237	0.100	1.000	45.4	444	70 - 130				2
Iron	36.3	mg/L	E200.7	0.0767	0.100	1.000	34.6	162	70 - 130				2
Magnesium	31.6	mg/L	E200.7	0.0294	1.00	10.00	21.9	97.1	70 - 130				
Potassium	17.9	mg/L	E200.7	0.247	1.00	10.00	8.43	95.1	70 - 130				
Sodium	47.7	mg/L	E200.7	0.0330	1.00	10.00	38.4	93.2	70 - 130				
Lab Sample ID: 1508262-004CMS													
Date Analyzed:		08/14/2015 1449h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Antimony	0.158	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000548	78.6	75 - 125				
Arsenic	0.202	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00121	100	75 - 125				
Barium	0.333	mg/L	E200.8	0.000538	0.00200	0.2000	0.151	90.9	75 - 125				
Beryllium	0.202	mg/L	E200.8	0.0000288	0.00200	0.2000	0	101	75 - 125				
Cadmium	0.186	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.9	75 - 125				
Chromium	0.187	mg/L	E200.8	0.00154	0.00200	0.2000	0	93.6	75 - 125				
Cobalt	0.184	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000478	92.0	75 - 125				
Copper	0.190	mg/L	E200.8	0.000692	0.00200	0.2000	0.00261	93.7	75 - 125				
Lead	0.184	mg/L	E200.8	0.000264	0.00200	0.2000	0	92.2	75 - 125				
Manganese	0.189	mg/L	E200.8	0.00153	0.00200	0.2000	0.00182	93.8	75 - 125				
Molybdenum	0.188	mg/L	E200.8	0.000206	0.00200	0.2000	0.00148	93.4	75 - 125				
Nickel	0.183	mg/L	E200.8	0.000754	0.00200	0.2000	0	91.7	75 - 125				
Selenium	0.199	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000728	99.2	75 - 125				
Silver	0.183	mg/L	E200.8	0.0000244	0.00200	0.2000	0	91.3	75 - 125				



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508263

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: 1508262-004CMS													
Date Analyzed:		08/14/2015 1449h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Thallium	0.182	mg/L	E200.8	0.0000242	0.00200	0.2000	0	90.8	75 - 125				
Vanadium	0.191	mg/L	E200.8	0.000438	0.00440	0.2000	0.00287	94.2	75 - 125				
Zinc	0.996	mg/L	E200.8	0.00476	0.00500	1.000	0.0165	98.0	75 - 125				
Lab Sample ID: 1508263-004CMS													
Date Analyzed:		08/14/2015 1528h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Antimony	0.158	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000586	78.6	75 - 125				
Arsenic	0.202	mg/L	E200.8	0.0000920	0.00200	0.2000	0.000879	100	75 - 125				
Barium	0.355	mg/L	E200.8	0.000538	0.00200	0.2000	0.178	88.8	75 - 125				
Beryllium	0.200	mg/L	E200.8	0.0000288	0.00200	0.2000	0	100	75 - 125				
Cadmium	0.185	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.4	75 - 125				
Chromium	0.187	mg/L	E200.8	0.00154	0.00200	0.2000	0	93.3	75 - 125				
Cobalt	0.183	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000614	91.3	75 - 125				
Copper	0.190	mg/L	E200.8	0.000692	0.00200	0.2000	0.00239	93.8	75 - 125				
Lead	0.181	mg/L	E200.8	0.000264	0.00200	0.2000	0	90.7	75 - 125				
Manganese	0.190	mg/L	E200.8	0.00153	0.00200	0.2000	0	94.9	75 - 125				
Molybdenum	0.186	mg/L	E200.8	0.000206	0.00200	0.2000	0.00147	92.0	75 - 125				
Nickel	0.183	mg/L	E200.8	0.000754	0.00200	0.2000	0	91.4	75 - 125				
Selenium	0.201	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000782	99.9	75 - 125				
Silver	0.182	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000252	91.1	75 - 125				
Thallium	0.178	mg/L	E200.8	0.0000242	0.00200	0.2000	0	89.1	75 - 125				
Vanadium	0.190	mg/L	E200.8	0.000438	0.00440	0.2000	0.0019	94.1	75 - 125				
Zinc	0.997	mg/L	E200.8	0.00476	0.00500	1.000	0.0148	98.3	75 - 125				
Lab Sample ID: 1508262-001BMS													
Date Analyzed:		08/13/2015 2241h											
Test Code:		200.8-W											
Date Prepared:		08/13/2015 1632h											
Arsenic	0.194	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0175	88.2	75 - 125				
Barium	1.53	mg/L	E200.8	0.000538	0.00200	0.2000	1.35	87.4	75 - 125				
Beryllium	0.208	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00677	101	75 - 125				



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508263

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: 1508262-001BMS		Date Analyzed:	08/13/2015 2241h										
Test Code: 200.8-W		Date Prepared:	08/13/2015 1632h										
Cadmium	0.198	mg/L	E200.8	0.000193	0.000500	0.2000	0.00117	98.2	75 - 125				
Chromium	0.210	mg/L	E200.8	0.00154	0.00200	0.2000	0.0232	93.2	75 - 125				
Cobalt	0.221	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0332	93.7	75 - 125				
Copper	0.257	mg/L	E200.8	0.000692	0.00200	0.2000	0.0808	88.3	75 - 125				
Lead	0.277	mg/L	E200.8	0.000264	0.00200	0.2000	0.0829	96.8	75 - 125				
Molybdenum	0.0996	mg/L	E200.8	0.000206	0.00200	0.2000	0.000312	49.6	75 - 125				1
Nickel	0.228	mg/L	E200.8	0.000754	0.00200	0.2000	0.0389	94.6	75 - 125				
Selenium	0.167	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00122	83.1	75 - 125				
Silver	0.192	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000488	95.8	75 - 125				
Thallium	0.172	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000604	85.7	75 - 125				
Vanadium	0.239	mg/L	E200.8	0.000438	0.00440	0.2000	0.0637	87.6	75 - 125				
Zinc	1.19	mg/L	E200.8	0.00476	0.00500	1.000	0.19	99.6	75 - 125				
Lab Sample ID: 1508263-002BMS		Date Analyzed:	08/13/2015 2314h										
Test Code: 200.8-W		Date Prepared:	08/13/2015 1632h										
Arsenic	0.193	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0149	89.3	75 - 125				
Barium	1.13	mg/L	E200.8	0.000538	0.00200	0.2000	0.971	79.0	75 - 125				
Beryllium	0.207	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00516	101	75 - 125				
Cadmium	0.197	mg/L	E200.8	0.000193	0.000500	0.2000	0.00094	98.2	75 - 125				
Chromium	0.210	mg/L	E200.8	0.00154	0.00200	0.2000	0.02	94.9	75 - 125				
Cobalt	0.216	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0279	94.2	75 - 125				
Copper	0.260	mg/L	E200.8	0.000692	0.00200	0.2000	0.0767	91.4	75 - 125				
Lead	0.260	mg/L	E200.8	0.000264	0.00200	0.2000	0.0674	96.4	75 - 125				
Manganese	1.82	mg/L	E200.8	0.00153	0.00200	0.2000	1.67	74.3	75 - 125				2
Molybdenum	0.119	mg/L	E200.8	0.000206	0.00200	0.2000	0.000344	59.2	75 - 125				1
Nickel	0.220	mg/L	E200.8	0.000754	0.00200	0.2000	0.0303	94.7	75 - 125				
Selenium	0.175	mg/L	E200.8	0.0000634	0.00200	0.2000	0.0011	86.8	75 - 125				
Silver	0.192	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000383	95.7	75 - 125				
Thallium	0.179	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000565	89.2	75 - 125				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508263-002BMS	Date Analyzed:	08/13/2015	2314h										
Test Code:	200.8-W	Date Prepared:	08/13/2015	1632h									
Vanadium	0.238	mg/L	E200.8	0.000438	0.00440	0.2000	0.0514	93.3	75 - 125				
Zinc	1.17	mg/L	E200.8	0.00476	0.00500	1.000	0.176	99.1	75 - 125				
Lab Sample ID: 1508262-001BMS	Date Analyzed:	08/13/2015	2340h										
Test Code:	200.8-W	Date Prepared:	08/13/2015	1632h									
Manganese	2.30	mg/L	E200.8	0.00764	0.0100	0.2000	2.17	68.8	75 - 125				2
Lab Sample ID: 1508262-001BMS	Date Analyzed:	08/14/2015	1955h										
Test Code:	200.8-W	Date Prepared:	08/14/2015	1431h									
Antimony	0.0131	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000775	6.14	75 - 125				1
Lab Sample ID: 1508263-002BMS	Date Analyzed:	08/14/2015	2028h										
Test Code:	200.8-W	Date Prepared:	08/14/2015	1431h									
Antimony	0.0206	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000202	10.2	75 - 125				1
Lab Sample ID: 1508263-003BMS	Date Analyzed:	08/14/2015	1008h										
Test Code:	HG-DW-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00379	mg/L	E245.1	0.00000892	0.000150	0.003330	0.0000783	111	80 - 120				
Lab Sample ID: 1508262-002BMS	Date Analyzed:	08/14/2015	952h										
Test Code:	HG-DW-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00374	mg/L	E245.1	0.00000892	0.000150	0.003330	0.00008	110	80 - 120				
Lab Sample ID: 1508262-002CMS	Date Analyzed:	08/14/2015	1043h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00348	mg/L	E245.1	0.00000892	0.000150	0.003330	0	105	85 - 115				
Lab Sample ID: 1508263-003CMS	Date Analyzed:	08/14/2015	1057h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00372	mg/L	E245.1	0.00000892	0.000150	0.003330	0	112	85 - 115				



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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508263

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

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



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508262-004CMSD													
Date Analyzed:		08/14/2015 1351h											
Test Code:		200.7-DIS											
Date Prepared:		08/14/2015 830h											
Aluminum	1.15	mg/L	E200.7	0.0237	0.100	1.000	0.155	99.7	70 - 130	1.13	2.42	20	
Calcium	58.8	mg/L	E200.7	0.0401	1.00	10.00	47.9	109	70 - 130	58.1	1.19	20	
Iron	1.02	mg/L	E200.7	0.0767	0.100	1.000	0	102	70 - 130	1	1.62	20	
Magnesium	17.2	mg/L	E200.7	0.0294	1.00	10.00	6.97	102	70 - 130	17	0.867	20	
Potassium	12.6	mg/L	E200.7	0.247	1.00	10.00	2.74	98.8	70 - 130	12.4	1.67	20	
Sodium	38.4	mg/L	E200.7	0.0330	1.00	10.00	27.3	111	70 - 130	37.6	2.22	20	
Lab Sample ID: 1508263-004CMSD													
Date Analyzed:		08/14/2015 1411h											
Test Code:		200.7-DIS											
Date Prepared:		08/14/2015 830h											
Aluminum	1.10	mg/L	E200.7	0.0237	0.100	1.000	0.104	99.4	70 - 130	1.07	2.25	20	
Iron	1.00	mg/L	E200.7	0.0767	0.100	1.000	0	100	70 - 130	0.98	2.26	20	
Magnesium	17.6	mg/L	E200.7	0.0294	1.00	10.00	7.2	104	70 - 130	17.2	2.33	20	
Potassium	12.9	mg/L	E200.7	0.247	1.00	10.00	2.79	101	70 - 130	12.7	1.00	20	
Sodium	41.6	mg/L	E200.7	0.0330	1.00	10.00	30.3	113	70 - 130	41.4	0.520	20	
Lab Sample ID: 1508263-004CMSD													
Date Analyzed:		08/14/2015 1431h											
Test Code:		200.7-DIS											
Date Prepared:		08/14/2015 830h											
Calcium	63.9	mg/L	E200.7	0.201	5.00	10.00	52.1	118	70 - 130	61.5	3.79	20	
Lab Sample ID: 1508262-001BMSD													
Date Analyzed:		08/13/2015 2242h											
Test Code:		200.7-W											
Date Prepared:		08/13/2015 1632h											
Aluminum	61.5	mg/L	E200.7	0.237	1.00	1.000	54.7	678	70 - 130	60.6	1.47	20	2
Calcium	195	mg/L	E200.7	0.401	10.0	10.00	186	97.7	70 - 130	188	3.72	20	
Lab Sample ID: 1508263-002BMSD													
Date Analyzed:		08/13/2015 2304h											
Test Code:		200.7-W											
Date Prepared:		08/13/2015 1632h											
Calcium	116	mg/L	E200.7	0.401	10.0	10.00	109	63.4	70 - 130	114	1.51	20	2



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508263

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: 1508262-001BMSD													
Date Analyzed:	08/13/2015 2315h												
Test Code:	200.7-W												
Date Prepared:	08/13/2015 1632h												
Iron	39.4	mg/L	E200.7	0.0767	0.100	1.000	37.5	185	70 - 130	39.2	0.559	20	2
Magnesium	43.8	mg/L	E200.7	0.0294	1.00	10.00	33.3	105	70 - 130	43.4	0.988	20	
Potassium	20.4	mg/L	E200.7	0.247	1.00	10.00	10.7	96.8	70 - 130	20.3	0.699	20	
Sodium	54.4	mg/L	E200.7	0.0330	1.00	10.00	44.4	100	70 - 130	53.3	2.06	20	
Lab Sample ID: 1508263-002BMSD													
Date Analyzed:	08/13/2015 2337h												
Test Code:	200.7-W												
Date Prepared:	08/13/2015 1632h												
Aluminum	48.8	mg/L	E200.7	0.0237	0.100	1.000	45.4	339	70 - 130	49.8	2.14	20	2
Iron	34.7	mg/L	E200.7	0.0767	0.100	1.000	34.6	4.30	70 - 130	36.3	4.46	20	2
Magnesium	31.5	mg/L	E200.7	0.0294	1.00	10.00	21.9	96.9	70 - 130	31.6	0.0721	20	
Potassium	17.7	mg/L	E200.7	0.247	1.00	10.00	8.43	92.2	70 - 130	17.9	1.63	20	
Sodium	48.3	mg/L	E200.7	0.0330	1.00	10.00	38.4	98.6	70 - 130	47.7	1.13	20	
Lab Sample ID: 1508262-004CMSD													
Date Analyzed:	08/14/2015 1509h												
Test Code:	200.8-DIS												
Date Prepared:	08/14/2015 830h												
Antimony	0.162	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000548	80.7	75 - 125	0.158	2.60	20	
Arsenic	0.218	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00121	109	75 - 125	0.202	7.67	20	
Barium	0.340	mg/L	E200.8	0.000538	0.00200	0.2000	0.151	94.7	75 - 125	0.333	2.24	20	
Beryllium	0.205	mg/L	E200.8	0.0000288	0.00200	0.2000	0	102	75 - 125	0.202	1.43	20	
Cadmium	0.189	mg/L	E200.8	0.000193	0.000500	0.2000	0	94.3	75 - 125	0.186	1.45	20	
Chromium	0.203	mg/L	E200.8	0.00154	0.00200	0.2000	0	101	75 - 125	0.187	8.15	20	
Cobalt	0.200	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000478	99.8	75 - 125	0.184	8.16	20	
Copper	0.205	mg/L	E200.8	0.000692	0.00200	0.2000	0.00261	101	75 - 125	0.19	7.57	20	
Lead	0.185	mg/L	E200.8	0.000264	0.00200	0.2000	0	92.3	75 - 125	0.184	0.108	20	
Manganese	0.208	mg/L	E200.8	0.00153	0.00200	0.2000	0.00182	103	75 - 125	0.189	9.24	20	
Molybdenum	0.191	mg/L	E200.8	0.000206	0.00200	0.2000	0.00148	94.8	75 - 125	0.188	1.47	20	
Nickel	0.197	mg/L	E200.8	0.000754	0.00200	0.2000	0	98.4	75 - 125	0.183	7.10	20	
Selenium	0.202	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000728	101	75 - 125	0.199	1.51	20	
Silver	0.187	mg/L	E200.8	0.0000244	0.00200	0.2000	0	93.3	75 - 125	0.183	2.11	20	



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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: 1508263
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: 1508262-004CMSD													
Date Analyzed:		08/14/2015 1509h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Thallium	0.181	mg/L	E200.8	0.0000242	0.00200	0.2000	0	90.4	75 - 125	0.182	0.420	20	
Vanadium	0.207	mg/L	E200.8	0.000438	0.00440	0.2000	0.00287	102	75 - 125	0.191	7.72	20	
Zinc	1.08	mg/L	E200.8	0.00476	0.00500	1.000	0.0165	106	75 - 125	0.996	7.81	20	
Lab Sample ID: 1508263-004CMSD													
Date Analyzed:		08/14/2015 1532h											
Test Code:		200.8-DIS											
Date Prepared:		08/14/2015 830h											
Antimony	0.164	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000586	81.7	75 - 125	0.158	3.83	20	
Arsenic	0.206	mg/L	E200.8	0.0000920	0.00200	0.2000	0.000879	103	75 - 125	0.202	2.19	20	
Barium	0.367	mg/L	E200.8	0.000538	0.00200	0.2000	0.178	94.6	75 - 125	0.355	3.26	20	
Beryllium	0.207	mg/L	E200.8	0.0000288	0.00200	0.2000	0	103	75 - 125	0.2	3.13	20	
Cadmium	0.191	mg/L	E200.8	0.000193	0.000500	0.2000	0	95.6	75 - 125	0.185	3.35	20	
Chromium	0.193	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.7	75 - 125	0.187	3.52	20	
Cobalt	0.189	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000614	94.6	75 - 125	0.183	3.48	20	
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0.00239	96.9	75 - 125	0.19	3.16	20	
Lead	0.188	mg/L	E200.8	0.000264	0.00200	0.2000	0	93.8	75 - 125	0.181	3.33	20	
Manganese	0.196	mg/L	E200.8	0.00153	0.00200	0.2000	0	97.8	75 - 125	0.19	3.01	20	
Molybdenum	0.193	mg/L	E200.8	0.000206	0.00200	0.2000	0.00147	95.7	75 - 125	0.186	3.86	20	
Nickel	0.190	mg/L	E200.8	0.000754	0.00200	0.2000	0	95.2	75 - 125	0.183	4.10	20	
Selenium	0.206	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000782	102	75 - 125	0.201	2.51	20	
Silver	0.188	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000252	93.8	75 - 125	0.182	2.87	20	
Thallium	0.184	mg/L	E200.8	0.0000242	0.00200	0.2000	0	92.1	75 - 125	0.178	3.25	20	
Vanadium	0.197	mg/L	E200.8	0.000438	0.00440	0.2000	0.0019	97.7	75 - 125	0.19	3.71	20	
Zinc	1.03	mg/L	E200.8	0.00476	0.00500	1.000	0.0148	101	75 - 125	0.997	2.76	20	
Lab Sample ID: 1508262-001BMSD													
Date Analyzed:		08/13/2015 2254h											
Test Code:		200.8-W											
Date Prepared:		08/13/2015 1632h											
Arsenic	0.195	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0175	88.9	75 - 125	0.194	0.710	20	
Barium	1.55	mg/L	E200.8	0.000538	0.00200	0.2000	1.35	98.9	75 - 125	1.53	1.49	20	
Beryllium	0.213	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00677	103	75 - 125	0.208	2.36	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508262-001BMSD		Date Analyzed:	08/13/2015 2254h										
Test Code: 200.8-W		Date Prepared:	08/13/2015 1632h										
Cadmium	0.202	mg/L	E200.8	0.000193	0.000500	0.2000	0.00117	100	75 - 125	0.198	2.17	20	
Chromium	0.215	mg/L	E200.8	0.00154	0.00200	0.2000	0.0232	95.8	75 - 125	0.21	2.43	20	
Cobalt	0.223	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0332	95.1	75 - 125	0.221	1.25	20	
Copper	0.259	mg/L	E200.8	0.000692	0.00200	0.2000	0.0808	88.9	75 - 125	0.257	0.464	20	
Lead	0.281	mg/L	E200.8	0.000264	0.00200	0.2000	0.0829	98.9	75 - 125	0.277	1.48	20	
Molybdenum	0.0972	mg/L	E200.8	0.000206	0.00200	0.2000	0.000312	48.5	75 - 125	0.0996	2.42	20	1
Nickel	0.231	mg/L	E200.8	0.000754	0.00200	0.2000	0.0389	96.0	75 - 125	0.228	1.23	20	
Selenium	0.167	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00122	83.0	75 - 125	0.167	0.152	20	
Silver	0.196	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000488	97.7	75 - 125	0.192	2.02	20	
Thallium	0.175	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000604	87.0	75 - 125	0.172	1.50	20	
Vanadium	0.245	mg/L	E200.8	0.000438	0.00440	0.2000	0.0637	90.7	75 - 125	0.239	2.53	20	
Zinc	1.19	mg/L	E200.8	0.00476	0.00500	1.000	0.19	100	75 - 125	1.19	0.384	20	
Lab Sample ID: 1508263-002BMSD		Date Analyzed:	08/13/2015 2317h										
Test Code: 200.8-W		Date Prepared:	08/13/2015 1632h										
Arsenic	0.197	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0149	91.0	75 - 125	0.193	1.71	20	
Barium	1.13	mg/L	E200.8	0.000538	0.00200	0.2000	0.971	78.8	75 - 125	1.13	0.0360	20	
Beryllium	0.209	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00516	102	75 - 125	0.207	0.997	20	
Cadmium	0.200	mg/L	E200.8	0.000193	0.000500	0.2000	0.00094	99.5	75 - 125	0.197	1.33	20	
Chromium	0.210	mg/L	E200.8	0.00154	0.00200	0.2000	0.02	94.8	75 - 125	0.21	0.112	20	
Cobalt	0.219	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0279	95.7	75 - 125	0.216	1.34	20	
Copper	0.261	mg/L	E200.8	0.000692	0.00200	0.2000	0.0767	92.1	75 - 125	0.26	0.566	20	
Lead	0.264	mg/L	E200.8	0.000264	0.00200	0.2000	0.0674	98.1	75 - 125	0.26	1.34	20	
Manganese	1.85	mg/L	E200.8	0.00153	0.00200	0.2000	1.67	86.8	75 - 125	1.82	1.36	20	
Molybdenum	0.121	mg/L	E200.8	0.000206	0.00200	0.2000	0.000344	60.4	75 - 125	0.119	2.11	20	1
Nickel	0.223	mg/L	E200.8	0.000754	0.00200	0.2000	0.0303	96.3	75 - 125	0.22	1.43	20	
Selenium	0.176	mg/L	E200.8	0.0000634	0.00200	0.2000	0.0011	87.5	75 - 125	0.175	0.730	20	
Silver	0.194	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000383	96.7	75 - 125	0.192	1.01	20	
Thallium	0.182	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000565	90.7	75 - 125	0.179	1.67	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508263-002BMSD	Date Analyzed:	08/13/2015	2317h										
Test Code:	200.8-W	Date Prepared:	08/13/2015	1632h									
Vanadium	0.239	mg/L	E200.8	0.000438	0.00440	0.2000	0.0514	93.9	75 - 125	0.238	0.490	20	
Zinc	1.19	mg/L	E200.8	0.00476	0.00500	1.000	0.176	101	75 - 125	1.17	1.76	20	
Lab Sample ID: 1508262-001BMSD	Date Analyzed:	08/13/2015	2343h										
Test Code:	200.8-W	Date Prepared:	08/13/2015	1632h									
Manganese	2.37	mg/L	E200.8	0.00764	0.0100	0.2000	2.17	101	75 - 125	2.3	2.73	20	
Lab Sample ID: 1508262-001BMSD	Date Analyzed:	08/14/2015	1959h										
Test Code:	200.8-W	Date Prepared:	08/14/2015	1431h									
Antimony	0.0145	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000775	6.87	75 - 125	0.0131	10.6	20	1
Lab Sample ID: 1508263-002BMSD	Date Analyzed:	08/14/2015	2032h										
Test Code:	200.8-W	Date Prepared:	08/14/2015	1431h									
Antimony	0.0250	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000202	12.4	75 - 125	0.0206	19.2	20	1
Lab Sample ID: 1508263-003BMSD	Date Analyzed:	08/14/2015	1010h										
Test Code:	HG-DW-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00365	mg/L	E245.1	0.00000892	0.000150	0.003330	0.0000783	107	80 - 120	0.00379	3.85	20	
Lab Sample ID: 1508262-002BMSD	Date Analyzed:	08/14/2015	954h										
Test Code:	HG-DW-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00372	mg/L	E245.1	0.00000892	0.000150	0.003330	0.00008	109	80 - 120	0.00374	0.760	20	
Lab Sample ID: 1508262-002CMSD	Date Analyzed:	08/14/2015	1045h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00373	mg/L	E245.1	0.00000892	0.000150	0.003330	0	112	85 - 115	0.00348	7.02	20	
Lab Sample ID: 1508263-003CMSD	Date Analyzed:	08/14/2015	1059h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/13/2015	1830h									
Mercury	0.00351	mg/L	E245.1	0.00000892	0.000150	0.003330	0	105	85 - 115	0.00372	5.72	20	



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Client: Utah Division of Water Quality
Lab Set ID: 1508263
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
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¹ - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

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



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508262-001ADUP Date Analyzed: 08/14/2015 601h													
Test Code: COND-W-2510B													
Conductivity	620	µmhos/cm	SM2510B	0.436	2.00					617	0.485	5	
Lab Sample ID: 1508263-001ADUP Date Analyzed: 08/14/2015 601h													
Test Code: COND-W-2510B													
Conductivity	651	µmhos/cm	SM2510B	0.436	2.00					648	0.462	5	
Lab Sample ID: 1508275-001ADUP Date Analyzed: 08/14/2015 601h													
Test Code: COND-W-2510B													
Conductivity	632	µmhos/cm	SM2510B	0.436	2.00					634	0.316	5	
Lab Sample ID: 1508262-004ADUP Date Analyzed: 08/13/2015 1840h													
Test Code: PH-4500H+B													
pH @ 25° C	8.24	pH Units	SM4500-H+B	1.00	1.00					8.22	0.243	5	H
Lab Sample ID: 1508263-004ADUP Date Analyzed: 08/13/2015 1840h													
Test Code: PH-4500H+B													
pH @ 25° C	8.18	pH Units	SM4500-H+B	1.00	1.00					8.2	0.244	5	H
Lab Sample ID: 1508262-002ADUP Date Analyzed: 08/13/2015 2100h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	470	mg/L	SM2540C	30.6	50.0					410	13.6	5	@
Lab Sample ID: 1508263-002ADUP Date Analyzed: 08/13/2015 2100h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	360	mg/L	SM2540C	30.6	50.0					450	22.2	5	@
Lab Sample ID: 1508262-002ADUP Date Analyzed: 08/13/2015 1610h													
Test Code: TSS-W-2540D													
Total Suspended Solids	2,640	mg/L	SM2540D	142	150					2760	4.44	5	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508263

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: 1508263-002ADUP	Date Analyzed: 08/13/2015 1610h												
Test Code: TSS-W-2540D													
Total Suspended Solids	4,220	mg/L	SM2540D	142	150					4640	9.48	5	@

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

H - Sample was received outside of the holding time.



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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-R81617 Date Analyzed: 08/13/2015 1229h													
Test Code: 300.0-W													
Chloride	4.97	mg/L	E300.0	0.00751	0.100	5.000	0	99.4	90 - 110				
Sulfate	4.94	mg/L	E300.0	0.0211	0.750	5.000	0	98.7	90 - 110				
Lab Sample ID: LCS-R81615 Date Analyzed: 08/14/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	49,000	mg/L	SM2320B	1.86	10.0	50,000	0	98.0	90 - 110				
Lab Sample ID: LCS-R81612 Date Analyzed: 08/14/2015 601h													
Test Code: COND-W-2510B													
Conductivity	994	µmhos/cm	SM2510B	0.436	2.00	1,000	0	99.4	98 - 102				
Lab Sample ID: LCS Date Analyzed: 08/13/2015 2352h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.910	mg/L	E353.2	0.00833	0.0100	1.000	0	91.0	90 - 110				
Lab Sample ID: LCS-R81601 Date Analyzed: 08/13/2015 1840h													
Test Code: PH-4500H+B													
pH @ 25° C	8.95	pH Units	SM4500-H+B	1.00	1.00	9.000	0	99.4	98 - 102				
Lab Sample ID: LCS-38561 Date Analyzed: 08/14/2015 1235h													
Test Code: PO4-W-4500PF Date Prepared: 08/14/2015 1020h													
Phosphate, Total (as P)	0.912	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0	91.2	90 - 110				
Lab Sample ID: LCS-R81644 Date Analyzed: 08/13/2015 2100h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	222	mg/L	SM2540C	6.13	10.0	205.0	0	108	80 - 120				
Lab Sample ID: LCS-R81629 Date Analyzed: 08/13/2015 1610h													
Test Code: TSS-W-2540D													
Total Suspended Solids	91.0	mg/L	SM2540D	2.83	3.00	100.0	0	91.0	80 - 120				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508263

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-R81617													
Date Analyzed:		08/13/2015 1213h											
Test Code:		300.0-W											
Chloride	0.00760	mg/L	E300.0	0.00751	0.100								JB
Sulfate	< 0.750	mg/L	E300.0	0.0211	0.750								U
Lab Sample ID: MB-R81615													
Date Analyzed:		08/14/2015 632h											
Test Code:		ALK-W-2320B											
Alkalinity (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Bicarbonate (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Carbonate (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Lab Sample ID: MB-R81612													
Date Analyzed:		08/14/2015 601h											
Test Code:		COND-W-2510B											
Conductivity	0.710	µmhos/cm	SM2510B	0.436	2.00								JB
Lab Sample ID: MB													
Date Analyzed:		08/13/2015 2350h											
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-38561													
Date Analyzed:		08/14/2015 1234h											
Test Code:		PO4-W-4500PF		Date Prepared:		08/14/2015 1020h							
Phosphate, Total (as P)	0.0226	mg/L	SM4500-P-F	0.0212	0.0500								JB
Lab Sample ID: MB-R81644													
Date Analyzed:		08/13/2015 2100h											
Test Code:		TDS-W-2540C											
Total Dissolved Solids	< 10.0	mg/L	SM2540C	6.13	10.0								U
Lab Sample ID: MB-R81629													
Date Analyzed:		08/13/2015 1610h											
Test Code:		TSS-W-2540D											
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.83	3.00								U



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508263
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: 1508262-001AMS													
Date Analyzed: 08/13/2015 2151h													
Test Code: 300.0-W													
Chloride	58.4	mg/L	E300.0	0.0751	1.00	50.00	8.7	99.4	90 - 110				
Sulfate	208	mg/L	E300.0	0.211	7.50	50.00	157	103	90 - 110				
Lab Sample ID: 1508263-001AMS													
Date Analyzed: 08/13/2015 2332h													
Test Code: 300.0-W													
Chloride	59.4	mg/L	E300.0	0.0751	1.00	50.00	9.83	99.1	90 - 110				
Sulfate	195	mg/L	E300.0	0.211	7.50	50.00	143	103	90 - 110				
Lab Sample ID: 1508262-001AMS													
Date Analyzed: 08/14/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	204	mg/L	SM2320B	1.86	10.0	100.0	108	96.3	80 - 120				
Lab Sample ID: 1508263-001AMS													
Date Analyzed: 08/14/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	211	mg/L	SM2320B	1.86	10.0	100.0	112	99.8	80 - 120				
Lab Sample ID: 1508275-001AMS													
Date Analyzed: 08/14/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	204	mg/L	SM2320B	1.86	10.0	100.0	107	98.0	80 - 120				
Lab Sample ID: 1508263-004DMS													
Date Analyzed: 08/14/2015 015h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	4.91	mg/L	E353.2	0.0417	0.0500	5.000	0.317	91.9	90 - 110				
Lab Sample ID: 1508275-001DMS													
Date Analyzed: 08/14/2015 019h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	5.16	mg/L	E353.2	0.0417	0.0500	5.000	0.481	93.6	90 - 110				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508262-004DMS	Date Analyzed:	08/13/2015	2359h										
Test Code:	NO2/NO3-W-353.2												
Nitrate/Nitrite (as N)	1.19	mg/L	E353.2	0.00833	0.0100	1.000	0.307	88.3	90 - 110				¹
Lab Sample ID: 1508263-001DMS	Date Analyzed:	08/14/2015	1301h										
Test Code:	PO4-W-4500PF												
Phosphate, Total (as P)	5.70	mg/L	SM4500-P-F	0.0424	0.100	1.000	5.72	-1.90	90 - 110				¹
Lab Sample ID: 1508275-001DMS	Date Analyzed:	08/14/2015	1306h										
Test Code:	PO4-W-4500PF												
Phosphate, Total (as P)	6.13	mg/L	SM4500-P-F	0.0424	0.100	1.000	4.51	161	90 - 110				¹
Lab Sample ID: 1508262-001DMS	Date Analyzed:	08/14/2015	1236h										
Test Code:	PO4-W-4500PF												
Phosphate, Total (as P)	3.55	mg/L	SM4500-P-F	0.0212	0.0500	1.000	3.05	49.6	90 - 110				¹

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



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508262-001AMSD													
Date Analyzed:		08/13/2015 2207h											
Test Code:		300.0-W											
Chloride	58.0	mg/L	E300.0	0.0751	1.00	50.00	8.7	98.5	90 - 110	58.4	0.721	20	
Sulfate	208	mg/L	E300.0	0.211	7.50	50.00	157	102	90 - 110	208	0.324	20	
Lab Sample ID: 1508263-001AMSD													
Date Analyzed:		08/13/2015 2349h											
Test Code:		300.0-W											
Chloride	59.0	mg/L	E300.0	0.0751	1.00	50.00	9.83	98.4	90 - 110	59.4	0.605	20	
Sulfate	193	mg/L	E300.0	0.211	7.50	50.00	143	99.8	90 - 110	195	0.758	20	
Lab Sample ID: 1508262-001AMSD													
Date Analyzed:		08/14/2015 632h											
Test Code:		ALK-W-2320B											
Alkalinity (as CaCO3)	203	mg/L	SM2320B	1.86	10.0	100.0	108	94.6	80 - 120	205	0.835	10	
Lab Sample ID: 1508263-001AMSD													
Date Analyzed:		08/14/2015 632h											
Test Code:		ALK-W-2320B											
Alkalinity (as CaCO3)	208	mg/L	SM2320B	1.86	10.0	100.0	112	96.4	80 - 120	211	1.62	10	
Lab Sample ID: 1508275-001AMSD													
Date Analyzed:		08/14/2015 632h											
Test Code:		ALK-W-2320B											
Alkalinity (as CaCO3)	204	mg/L	SM2320B	1.86	10.0	100.0	107	98.0	80 - 120	205	0	10	
Lab Sample ID: 1508263-004DMSD													
Date Analyzed:		08/14/2015 016h											
Test Code:		NO2/NO3-W-353.2											
Nitrate/Nitrite (as N)	4.86	mg/L	E353.2	0.0417	0.0500	5.000	0.317	90.8	90 - 110	4.91	1.15	10	
Lab Sample ID: 1508275-001DMSD													
Date Analyzed:		08/14/2015 021h											
Test Code:		NO2/NO3-W-353.2											
Nitrate/Nitrite (as N)	5.00	mg/L	E353.2	0.0417	0.0500	5.000	0.481	90.4	90 - 110	5.16	3.17	10	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508263
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: 1508262-004DMSD	Date Analyzed:	08/14/2015 000h											
Test Code:	NO2/NO3-W-353.2												
Nitrate/Nitrite (as N)	1.22	mg/L	E353.2	0.00833	0.0100	1.000	0.307	91.1	90 - 110	1.19	2.33	10	
Lab Sample ID: 1508262-001DMSD	Date Analyzed:	08/14/2015 1237h											
Test Code:	PO4-W-4500PF	Date Prepared:	08/14/2015 1020h										
Phosphate, Total (as P)	3.07	mg/L	SM4500-P-F	0.0212	0.0500	1.000	3.05	1.80	90 - 110	3.55	14.4	10	@ ¹
Lab Sample ID: 1508263-001DMSD	Date Analyzed:	08/14/2015 1245h											
Test Code:	PO4-W-4500PF	Date Prepared:	08/14/2015 1020h										
Phosphate, Total (as P)	4.86	mg/L	SM4500-P-F	0.0212	0.0500	1.000	5.72	-85.3	90 - 110	5.7	15.8	10	@ ¹
Lab Sample ID: 1508275-001DMSD	Date Analyzed:	08/14/2015 1249h											
Test Code:	PO4-W-4500PF	Date Prepared:	08/14/2015 1020h										
Phosphate, Total (as P)	3.98	mg/L	SM4500-P-F	0.0212	0.0500	1.000	4.51	-53.6	90 - 110	6.13	42.6	10	@

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

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

WORK ORDER Summary

Work Order: **1508263** Page 1 of 4

Client: Utah Division of Water Quality
Client ID: UTD200 **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling **QC Level:** II+ MDL **WO Type:** Standard
Comments: Next Day Rush QC2+ / dissolved metals have been field filtered. Flag any concentrations detected less than RL and at or greater than the MDL with a J flag. Include EDD Use sparingly, do not preserve entire sample. Footnote report, pH received outside of hold.; Email to lenoras@utah.gov.; CC: Jim Harris; **DB**

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508263-001A	San Juan R @ Mexican Hat US163 Xing (4953000)	8/12/2015 1750h	8/13/2015 1450h	300.0-W	Aqueous	df - wc	1
				<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	
1508263-001B				200.7-W		df - total metals	
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-W-PR		df - total metals	
				200.8-W		df - total 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 - total metals	
				HARD-2340B		df - total metals	
				HG-DW-245.1		df - total metals	
				HG-DW-PR		df - total metals	
1508263-001C				200.7-DIS		df - dis metals	
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-DIS-PR		df - dis metals	
				200.8-DIS		df - dis metals	
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>			
				200.8-DIS-PR		df - dis metals	
				HARD-2340B		df - dis metals	
				<i>1 SEL Analytes: HARD</i>			
				HG-DW-DIS-245.1		df - dis metals	
				HG-DW-DIS-PR		df - dis metals	
1508263-001D				NO2/NO3-W-353.2		df - po4 / no2/no3	
				PO4-W-4500PF		df - po4 / no2/no3	

WORK ORDER Summary

Work Order: **1508263** Page 2 of 4

Client: Utah Division of Water Quality

Due Date: 8/14/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage	
1508263-001D	San Juan R @ Mexican Hat US163 Xing (4953000)	8/12/2015 1750h	8/13/2015 1450h	PO4-W-PR	Aqueous	df - po4 / no2/no3	1
1508263-002A	San Juan R @ Sand Island (4953250)	8/12/2015 1112h	8/13/2015 1450h	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	
1508263-002B				200.7-W		df - total metals	
				6 SEL Analytes: AL CA FE MG K NA			
				200.7-W-PR		df - total metals	
				200.8-W		df - total 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 - total metals	
				HARD-2340B		df - total metals	
				HG-DW-245.1		df - total metals	
				HG-DW-PR		df - total metals	
1508263-002C				200.7-DIS		df - dis metals	
				6 SEL Analytes: AL CA FE MG K NA			
				200.7-DIS-PR		df - dis metals	
				200.8-DIS		df - dis metals	
				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 metals	
				HARD-2340B		df - dis metals	
				1 SEL Analytes: HARD			
				HG-DW-DIS-245.1		df - dis metals	
				HG-DW-DIS-PR		df - dis metals	
1508263-002D				NO2/NO3-W-353.2		df - po4 / no2/no3	
				PO4-W-4500PF		df - po4 / no2/no3	
				PO4-W-PR		df - po4 / no2/no3	
1508263-003A	San Juan R @ Town of Montezuma (4953990)	8/12/2015 1037h	8/13/2015 1450h	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	

WORK ORDER Summary

Work Order: **1508263**

Page 3 of 4

Client: Utah Division of Water Quality

Due Date: 8/14/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage			
1508263-003A	San Juan R @ Town of Montezuma (4953990)	8/12/2015 1037h	8/13/2015 1450h	PH-4500H+B	Aqueous		df - wc 1			
				TDS-W-2540C		df - wc				
				TSS-W-2540D		df - wc				
1508263-003B				200.7-W			df - total metals			
				<i>6 SEL Analytes: AL CA FE MG K NA</i>						
				200.7-W-PR		df - total metals				
				200.8-W		df - total 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 - total metals				
				HARD-2340B		df - total metals				
				HG-DW-245.1		df - total metals				
				HG-DW-PR		df - total metals				
				1508263-003C					200.7-DIS	
<i>6 SEL Analytes: AL CA FE MG K NA</i>										
200.7-DIS-PR	df - dis metals									
200.8-DIS	df - dis metals									
<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>										
200.8-DIS-PR	df - dis metals									
HARD-2340B	df - dis metals									
<i>1 SEL Analytes: HARD</i>										
HG-DW-DIS-245.1	df - dis metals									
HG-DW-DIS-PR	df - dis metals									
1508263-003D				NO2/NO3-W-353.2			df - po4 / no2/no3			
				PO4-W-4500PF		df - po4 / no2/no3				
				PO4-W-PR		df - po4 / no2/no3				
1508263-004A	San Juan R @ US160 Xing in CO (4954000)	8/12/2015 0950h	8/13/2015 1450h	300.0-W	Aqueous		df - wc 1			
				<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				
1508263-004B				200.7-W			df - total metals			
				<i>6 SEL Analytes: AL CA FE MG K NA</i>						
				200.7-W-PR		df - total metals				

WORK ORDER Summary

Work Order: **1508263**

Page 4 of 4

Client: Utah Division of Water Quality

Due Date: 8/14/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508263-004B	San Juan R @ US160 Xing in CO (4954000)	8/12/2015 0950h	8/13/2015 1450h	200.8-W	Aqueous	df - total metals
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE</i>		
				<i>AG TL V ZN</i>		
				200.8-W-PR		df - total metals
				HARD-2340B		df - total metals
				HG-DW-245.1		df - total metals
				HG-DW-PR		df - total metals
				200.7-DIS		df - dis metals
				<i>6 SEL Analytes: AL CA FE MG K NA</i>		
				<i>AG TL V ZN</i>		
1508263-004C				200.7-DIS-PR		df - dis metals
				200.8-DIS		df - dis metals
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE</i>		
				<i>AG TL V ZN</i>		
				200.8-DIS-PR		df - dis metals
				HARD-2340B		df - dis metals
				<i>1 SEL Analytes: HARD</i>		
				HG-DW-DIS-245.1		df - dis metals
				HG-DW-DIS-PR		df - dis metals
				1508263-004D		
PO4-W-4500PF		df - po4 / no2/no3				
PO4-W-PR		df - po4 / no2/no3				

