



3440 South 700 West
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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: 1508227

American West Analytical Laboratories received sample(s) on 8/12/2015 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
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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: 1508227-001
Client Sample ID: San Juan R @ Mexican Hat US163 Xing (4953000)
Collection Date: 8/11/2015 1543h
Received Date: 8/12/2015 1400h

Analytical Results

TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/12/2015 1539h	8/12/2015 2124h	E200.7	0.237	1.00	56.4	²
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.0000366	0.00200	0.000345	J ¹ @
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.0000920	0.00200	0.0133	
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 022h	E200.8	0.00538	0.0200	1.35	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.0000288	0.00200	0.00509	
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.000193	0.000500	0.00109	
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2124h	E200.7	0.401	10.0	150	²
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.00154	0.00200	0.0235	
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.0000434	0.00400	0.0253	
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.000692	0.00200	0.0610	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/12/2015 2209h	E200.7	0.0767	0.100	35.9	²
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.000264	0.00200	0.0751	
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/12/2015 2209h	E200.7	0.0294	1.00	30.1	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.00153	0.00200	1.66	
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 851h	E245.1	0.0000892	0.000150	0.000130	J
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.000206	0.00200	0.000774	J ¹
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.000754	0.00200	0.0342	
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/12/2015 2209h	E200.7	0.247	1.00	11.7	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.0000634	0.00200	0.000925	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.0000244	0.00200	0.000475	JB
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/12/2015 2209h	E200.7	0.0330	1.00	41.6	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.0000242	0.00200	0.000590	J
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.000438	0.00440	0.0572	
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/12/2015 2326h	E200.8	0.00476	0.00500	0.168	

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

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

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

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



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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: 1508227-002
Client Sample ID: San Juan R @ Sand Island (4953250)
Collection Date: 8/11/2015 1501h
Received Date: 8/12/2015 1400h

Analytical Results

TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/12/2015 1539h	8/12/2015 2220h	E200.7	0.0237	0.100	48.7	
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.0000366	0.00200	0.000272	J
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.0000920	0.00200	0.0120	
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 041h	E200.8	0.00538	0.0200	0.900	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.0000288	0.00200	0.00423	
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.000193	0.000500	0.00104	
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2130h	E200.7	0.401	10.0	102	
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.00154	0.00200	0.0210	
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.0000434	0.00400	0.0236	
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.000692	0.00200	0.0642	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/12/2015 2220h	E200.7	0.0767	0.100	36.8	
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.000264	0.00200	0.0634	
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/12/2015 2220h	E200.7	0.0294	1.00	22.4	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.00153	0.00200	1.40	
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 837h	E245.1	0.0000892	0.000150	0.000115	J
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.000206	0.00200	0.000855	J
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.000754	0.00200	0.0280	
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/12/2015 2220h	E200.7	0.247	1.00	9.46	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.0000634	0.00200	0.00110	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.0000244	0.00200	0.000436	JB
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/12/2015 2220h	E200.7	0.0330	1.00	38.2	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.0000242	0.00200	0.000615	J
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.000438	0.00440	0.0515	
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/12/2015 2352h	E200.8	0.00476	0.00500	0.163	

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: 1508227-003
Client Sample ID: San Juan R @ Town of Montezuma (4953990)
Collection Date: 8/11/2015 1420h
Received Date: 8/12/2015 1400h

Analytical Results

TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/12/2015 1539h	8/13/2015 946h	E200.7	0.0237	0.100	54.7	
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.0000366	0.00200	0.000232	J
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.0000920	0.00200	0.0150	
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 045h	E200.8	0.00538	0.0200	1.06	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.0000288	0.00200	0.00516	
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.000193	0.000500	0.00104	
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2133h	E200.7	0.401	10.0	102	
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.00154	0.00200	0.0242	
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.0000434	0.00400	0.0291	
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.000692	0.00200	0.0803	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/13/2015 946h	E200.7	0.0767	0.100	44.7	
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.000264	0.00200	0.0702	
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/13/2015 946h	E200.7	0.0294	1.00	24.0	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.00153	0.00200	1.57	
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 853h	E245.1	0.00000892	0.000150	0.000137	J
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.000206	0.00200	0.000648	J
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.000754	0.00200	0.0324	
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/13/2015 946h	E200.7	0.247	1.00	9.47	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.0000634	0.00200	0.00123	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.0000244	0.00200	0.000454	JB
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/13/2015 946h	E200.7	0.0330	1.00	38.6	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.0000242	0.00200	0.000733	J
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.000438	0.00440	0.0584	
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/12/2015 2355h	E200.8	0.00476	0.00500	0.183	

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

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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: 1508227-004
Client Sample ID: San Juan R @ US160 Xing in CO (4954000)
Collection Date: 8/11/2015 1317h
Received Date: 8/12/2015 1400h

Analytical Results

TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/12/2015 1539h	8/12/2015 2232h	E200.7	0.0237	0.100	56.9	
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.0000366	0.00200	0.000181	J
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.0000920	0.00200	0.0142	
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 048h	E200.8	0.00538	0.0200	0.971	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.0000288	0.00200	0.00497	
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.000193	0.000500	0.000916	
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2135h	E200.7	0.401	10.0	95.0	
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.00154	0.00200	0.0218	
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.0000434	0.00400	0.0273	
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.000692	0.00200	0.0767	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/12/2015 2232h	E200.7	0.0767	0.100	40.3	
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.000264	0.00200	0.0626	
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/12/2015 2232h	E200.7	0.0294	1.00	20.0	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.00153	0.00200	1.44	
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 859h	E245.1	0.00000892	0.000150	0.000130	J
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.000206	0.00200	0.000612	J
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.000754	0.00200	0.0296	
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/12/2015 2232h	E200.7	0.247	1.00	9.65	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.0000634	0.00200	0.00108	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.0000244	0.00200	0.000420	JB
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/12/2015 2232h	E200.7	0.0330	1.00	37.4	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.0000242	0.00200	0.000679	J
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.000438	0.00440	0.0518	
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/12/2015 2359h	E200.8	0.00476	0.00500	0.159	

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: 1508227-001
Client Sample ID: San Juan R @ Mexican Hat US163 Xing (4953000)
Collection Date: 8/11/2015 1543h
Received Date: 8/12/2015 1400h

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	8/12/2015 1539h	8/12/2015 2011h	E200.7	0.0237	0.100	1.79	
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.0000366	0.00200	0.00123	J
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.0000920	0.00200	0.00159	J
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.000538	0.00200	0.445	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.0000288	0.00200	0.0000695	J
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2011h	E200.7	0.0401	1.00	43.6	
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.0000434	0.00400	0.000311	J
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.000692	0.00200	0.00528	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/12/2015 2011h	E200.7	0.0767	0.100	0.787	
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.000264	0.00200	0.000569	J
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/12/2015 2011h	E200.7	0.0294	1.00	7.19	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.00153	0.00200	0.0116	
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 934h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.000206	0.00200	0.00198	J
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.000754	0.00200	0.00102	J
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/12/2015 2011h	E200.7	0.247	1.00	3.11	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.0000634	0.00200	0.000821	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.0000244	0.00200	0.000230	JB
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/12/2015 2011h	E200.7	0.0330	1.00	41.4	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.0000242	0.00200	0.0000270	J
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.000438	0.00440	0.00455	
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/13/2015 1102h	E200.8	0.00476	0.00500	0.0174	

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: 1508227-002
Client Sample ID: San Juan R @ Sand Island (4953250)
Collection Date: 8/11/2015 1501h
Received Date: 8/12/2015 1400h

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	8/12/2015 1539h	8/12/2015 2013h	E200.7	0.0237	0.100	0.158	
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.0000366	0.00200	0.000271	J
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.0000920	0.00200	0.00101	J
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.000538	0.00200	0.251	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2013h	E200.7	0.0401	1.00	45.3	
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.0000434	0.00400	0.0000864	J
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.000692	0.00200	0.00269	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/12/2015 2013h	E200.7	0.0767	0.100	0.0892	J
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/12/2015 2013h	E200.7	0.0294	1.00	6.65	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 936h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.000206	0.00200	0.00185	J
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/12/2015 2013h	E200.7	0.247	1.00	2.76	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.0000634	0.00200	0.000673	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/12/2015 2013h	E200.7	0.0330	1.00	36.6	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.000438	0.00440	0.00205	J
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/13/2015 1029h	E200.8	0.00476	0.00500	0.0149	

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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: 1508227-003
Client Sample ID: San Juan R @ Town of Montezuma (4953990)
Collection Date: 8/11/2015 1420h
Received Date: 8/12/2015 1400h

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	8/12/2015 1539h	8/12/2015 2015h	E200.7	0.0237	0.100	1.40	
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.0000366	0.00200	0.000136	J
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.0000920	0.00200	0.00125	J
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.000538	0.00200	0.298	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.0000288	0.00200	0.0000423	J
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2015h	E200.7	0.0401	1.00	44.8	
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.0000434	0.00400	0.000240	J
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.000692	0.00200	0.00347	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/12/2015 2015h	E200.7	0.0767	0.100	0.668	
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.000264	0.00200	0.000489	J
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/12/2015 2015h	E200.7	0.0294	1.00	6.57	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.00153	0.00200	0.00999	
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 926h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.000206	0.00200	0.00172	J
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.000754	0.00200	0.000952	J
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/12/2015 2015h	E200.7	0.247	1.00	2.96	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.0000634	0.00200	0.000741	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/12/2015 2015h	E200.7	0.0330	1.00	38.3	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.000438	0.00440	0.00273	J
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/13/2015 1032h	E200.8	0.00476	0.00500	0.0143	

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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: 1508227-004
Client Sample ID: San Juan R @ US160 Xing in CO (4954000)
Collection Date: 8/11/2015 1317h
Received Date: 8/12/2015 1400h

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	8/12/2015 1539h	8/12/2015 2017h	E200.7	0.0237	0.100	0.720	
Antimony	7440-36-0	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.0000366	0.00200	0.0000516	J
Arsenic	7440-38-2	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.0000920	0.00200	0.00133	J
Barium	7440-39-3	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.000538	0.00200	0.334	
Beryllium	7440-41-7	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/12/2015 1539h	8/12/2015 2017h	E200.7	0.0401	1.00	41.7	
Chromium	7440-47-3	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.0000434	0.00400	0.000155	J
Copper	7440-50-8	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.000692	0.00200	0.00303	
Iron	7439-89-6	mg/L	8/12/2015 1539h	8/12/2015 2017h	E200.7	0.0767	0.100	0.366	
Lead	7439-92-1	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.000264	0.00200	0.000270	J
Magnesium	7439-95-4	mg/L	8/12/2015 1539h	8/12/2015 2017h	E200.7	0.0294	1.00	5.11	
Manganese	7439-96-5	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.00153	0.00200	0.00510	
Mercury	7439-97-6	mg/L	8/12/2015 1600h	8/13/2015 938h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.000206	0.00200	0.00158	J
Nickel	7440-02-0	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/12/2015 1539h	8/12/2015 2017h	E200.7	0.247	1.00	2.91	
Selenium	7782-49-2	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.0000634	0.00200	0.000760	J
Silver	7440-22-4	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/12/2015 1539h	8/12/2015 2017h	E200.7	0.0330	1.00	37.0	
Thallium	7440-28-0	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.000438	0.00440	0.00246	J
Zinc	7440-66-6	mg/L	8/12/2015 1539h	8/13/2015 1035h	E200.8	0.00476	0.00500	0.0149	

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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: 1508227-001
Client Sample ID: San Juan R @ Mexican Hat US163 Xing (4953000)
Collection Date: 8/11/2015 1543h
Received Date: 8/12/2015 1400h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	108	
Bicarbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	108	
Carbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 115h	E300.0	0.0751	1.00	10.0	
Conductivity		µmhos/cm		8/13/2015 612h	SM2510B	0.436	2.00	508	B
Hardness (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 1057h	SM2340B	10.0	10.0	499	
Hardness, Dissolved (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 729h	SM2340B	10.0	10.0	138	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/12/2015 1806h	E353.2	0.0833	0.100	0.422	
pH @ 25° C		pH Units		8/12/2015 1827h	SM4500-H+B	1.00	1.00	8.26	H
Sulfate	14808-79-8	mg/L		8/13/2015 025h	E300.0	2.11	75.0	129	
Total Dissolved Solids		mg/L		8/12/2015 1420h	SM2540C	30.6	50.0	600	
Total Suspended Solids	TSS	mg/L		8/12/2015 1445h	SM2540D	70.8	75.0	4,870	

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: 1508227-002
Client Sample ID: San Juan R @ Sand Island (4953250)
Collection Date: 8/11/2015 1501h
Received Date: 8/12/2015 1400h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	106	
Bicarbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	106	
Carbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 132h	E300.0	0.0751	1.00	9.70	
Conductivity		µmhos/cm		8/13/2015 612h	SM2510B	0.436	2.00	513	B
Hardness (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 1057h	SM2340B	10.0	10.0	348	
Hardness, Dissolved (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 729h	SM2340B	10.0	10.0	140	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/12/2015 1813h	E353.2	0.0833	0.100	0.370	
pH @ 25° C		pH Units		8/12/2015 1827h	SM4500-H+B	1.00	1.00	8.28	H
Sulfate	14808-79-8	mg/L		8/13/2015 132h	E300.0	0.211	7.50	112	
Total Dissolved Solids		mg/L		8/12/2015 1420h	SM2540C	30.6	50.0	360	
Total Suspended Solids	TSS	mg/L		8/12/2015 1445h	SM2540D	70.8	75.0	4,000	

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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: 1508227-003
Client Sample ID: San Juan R @ Town of Montezuma (4953990)
Collection Date: 8/11/2015 1420h
Received Date: 8/12/2015 1400h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	101	
Bicarbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	101	
Carbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 149h	E300.0	0.0751	1.00	8.95	
Conductivity		µmhos/cm		8/13/2015 612h	SM2510B	0.436	2.00	527	B
Hardness (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 1057h	SM2340B	10.0	10.0	355	
Hardness, Dissolved (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 729h	SM2340B	10.0	10.0	139	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/12/2015 1814h	E353.2	0.0833	0.100	0.338	
pH @ 25° C		pH Units		8/12/2015 1827h	SM4500-H+B	1.00	1.00	8.28	H
Sulfate	14808-79-8	mg/L		8/13/2015 149h	E300.0	0.211	7.50	110	
Total Dissolved Solids		mg/L		8/12/2015 1420h	SM2540C	30.6	50.0	620	
Total Suspended Solids	TSS	mg/L		8/12/2015 1445h	SM2540D	70.8	75.0	3,940	

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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: 1508227-004
Client Sample ID: San Juan R @ US160 Xing in CO (4954000)
Collection Date: 8/11/2015 1317h
Received Date: 8/12/2015 1400h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	99.7	
Bicarbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	99.7	
Carbonate (as CaCO ₃)		mg/L		8/13/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 206h	E300.0	0.0751	1.00	8.06	
Conductivity		µmhos/cm		8/13/2015 612h	SM2510B	0.436	2.00	483	B
Hardness (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 1057h	SM2340B	10.0	10.0	320	
Hardness, Dissolved (as CaCO ₃)		mg/L	8/12/2015 1539h	8/13/2015 729h	SM2340B	10.0	10.0	125	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/12/2015 1825h	E353.2	0.0833	0.100	0.305	
pH @ 25° C		pH Units		8/12/2015 1827h	SM4500-H+B	1.00	1.00	8.27	H
Sulfate	14808-79-8	mg/L		8/13/2015 206h	E300.0	0.211	7.50	99.2	
Total Dissolved Solids		mg/L		8/12/2015 1420h	SM2540C	30.6	50.0	290	
Total Suspended Solids	TSS	mg/L		8/12/2015 1445h	SM2540D	70.8	75.0	3,970	

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

Lab Set ID: 1508227

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-38501		Date Analyzed:	08/12/2015 2009h										
Test Code: 200.7-DIS		Date Prepared:	08/12/2015 1539h										
Aluminum	1.07	mg/L	E200.7	0.0237	0.100	1.000	0	107	85 - 115				
Calcium	10.1	mg/L	E200.7	0.0401	1.00	10.00	0	101	85 - 115				
Iron	0.963	mg/L	E200.7	0.0767	0.100	1.000	0	96.3	85 - 115				
Magnesium	10.0	mg/L	E200.7	0.0294	1.00	10.00	0	100	85 - 115				
Potassium	10.6	mg/L	E200.7	0.247	1.00	10.00	0	106	85 - 115				
Sodium	10.0	mg/L	E200.7	0.0330	1.00	10.00	0	100	85 - 115				
Lab Sample ID: LCS-38503		Date Analyzed:	08/12/2015 2200h										
Test Code: 200.7-W		Date Prepared:	08/12/2015 1539h										
Aluminum	1.03	mg/L	E200.7	0.0237	0.100	1.000	0	103	85 - 115				
Calcium	9.71	mg/L	E200.7	0.0401	1.00	10.00	0	97.1	85 - 115				
Iron	0.928	mg/L	E200.7	0.0767	0.100	1.000	0	92.8	85 - 115				
Magnesium	9.84	mg/L	E200.7	0.0294	1.00	10.00	0	98.4	85 - 115				
Potassium	10.2	mg/L	E200.7	0.247	1.00	10.00	0	102	85 - 115				
Sodium	9.63	mg/L	E200.7	0.0330	1.00	10.00	0	96.3	85 - 115				
Lab Sample ID: LCS-38502		Date Analyzed:	08/13/2015 1058h										
Test Code: 200.8-DIS		Date Prepared:	08/12/2015 1539h										
Antimony	0.173	mg/L	E200.8	0.0000366	0.00200	0.2000	0	86.3	85 - 115				
Arsenic	0.218	mg/L	E200.8	0.0000920	0.00200	0.2000	0	109	85 - 115				
Barium	0.205	mg/L	E200.8	0.000538	0.00200	0.2000	0	102	85 - 115				
Beryllium	0.216	mg/L	E200.8	0.0000288	0.00200	0.2000	0	108	85 - 115				
Cadmium	0.206	mg/L	E200.8	0.000193	0.000500	0.2000	0	103	85 - 115				
Chromium	0.207	mg/L	E200.8	0.00154	0.00200	0.2000	0	104	85 - 115				
Cobalt	0.203	mg/L	E200.8	0.0000434	0.00400	0.2000	0	101	85 - 115				
Copper	0.207	mg/L	E200.8	0.000692	0.00200	0.2000	0	104	85 - 115				
Lead	0.206	mg/L	E200.8	0.000264	0.00200	0.2000	0	103	85 - 115				
Manganese	0.209	mg/L	E200.8	0.00153	0.00200	0.2000	0	104	85 - 115				
Molybdenum	0.206	mg/L	E200.8	0.000206	0.00200	0.2000	0	103	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: 1508227

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-38502		Date Analyzed:	08/13/2015 1058h										
Test Code: 200.8-DIS		Date Prepared:	08/12/2015 1539h										
Nickel	0.203	mg/L	E200.8	0.000754	0.00200	0.2000	0	102	85 - 115				
Selenium	0.212	mg/L	E200.8	0.0000634	0.00200	0.2000	0	106	85 - 115				
Silver	0.201	mg/L	E200.8	0.0000244	0.00200	0.2000	0	100	85 - 115				
Thallium	0.203	mg/L	E200.8	0.0000242	0.00200	0.2000	0	101	85 - 115				
Vanadium	0.207	mg/L	E200.8	0.000438	0.00440	0.2000	0	104	85 - 115				
Zinc	1.06	mg/L	E200.8	0.00476	0.00500	1.000	0	106	85 - 115				
Lab Sample ID: LCS-38504		Date Analyzed:	08/12/2015 2104h										
Test Code: 200.8-W		Date Prepared:	08/12/2015 1539h										
Arsenic	0.206	mg/L	E200.8	0.0000920	0.00200	0.2000	0	103	85 - 115				
Barium	0.195	mg/L	E200.8	0.000538	0.00200	0.2000	0	97.4	85 - 115				
Beryllium	0.200	mg/L	E200.8	0.0000288	0.00200	0.2000	0	100	85 - 115				
Cadmium	0.197	mg/L	E200.8	0.000193	0.000500	0.2000	0	98.4	85 - 115				
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0	99.3	85 - 115				
Cobalt	0.198	mg/L	E200.8	0.0000434	0.00400	0.2000	0	98.8	85 - 115				
Copper	0.202	mg/L	E200.8	0.000692	0.00200	0.2000	0	101	85 - 115				
Manganese	0.199	mg/L	E200.8	0.00153	0.00200	0.2000	0	99.6	85 - 115				
Molybdenum	0.196	mg/L	E200.8	0.000206	0.00200	0.2000	0	97.8	85 - 115				
Nickel	0.196	mg/L	E200.8	0.000754	0.00200	0.2000	0	97.9	85 - 115				
Selenium	0.203	mg/L	E200.8	0.0000634	0.00200	0.2000	0	101	85 - 115				
Silver	0.192	mg/L	E200.8	0.0000244	0.00200	0.2000	0	96.2	85 - 115				
Thallium	0.192	mg/L	E200.8	0.0000242	0.00200	0.2000	0	95.9	85 - 115				
Vanadium	0.200	mg/L	E200.8	0.000438	0.00440	0.2000	0	100	85 - 115				
Zinc	1.02	mg/L	E200.8	0.00476	0.00500	1.000	0	102	85 - 115				
Lab Sample ID: LCS-38504		Date Analyzed:	08/13/2015 1149h										
Test Code: 200.8-W		Date Prepared:	08/12/2015 1539h										
Antimony	0.176	mg/L	E200.8	0.0000366	0.00200	0.2000	0	88.1	85 - 115				
Lead	0.214	mg/L	E200.8	0.000264	0.00200	0.2000	0	107	85 - 115				



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Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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-38510	Date Analyzed:	08/13/2015	830h										
Test Code: HG-DW-245.1	Date Prepared:	08/12/2015	1600h										
Mercury	0.00342	mg/L	E245.1	0.00000892	0.000150	0.003330	0	103	85 - 115				
Lab Sample ID: LCS-38509	Date Analyzed:	08/13/2015	914h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/12/2015	1600h										
Mercury	0.00355	mg/L	E245.1	0.00000892	0.000150	0.003330	0	107	85 - 115				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508227

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-38501													
Date Analyzed:		08/12/2015 2006h											
Test Code:		200.7-DIS											
Date Prepared:		08/12/2015 1539h											
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-38503													
Date Analyzed:		08/12/2015 2157h											
Test Code:		200.7-W											
Date Prepared:		08/12/2015 1539h											
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-38502													
Date Analyzed:		08/13/2015 1013h											
Test Code:		200.8-DIS											
Date Prepared:		08/12/2015 1539h											
Antimony	< 0.00200	mg/L	E200.8	0.0000366	0.00200								U
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
Barium	< 0.00200	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

Contact: Lenora Sullivan

Lab Set ID: 1508227

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-38502	Date Analyzed:	08/13/2015	1013h										
Test Code:	200.8-DIS	Date Prepared:	08/12/2015	1539h									
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	0.0000395	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
Lab Sample ID: MB-38504	Date Analyzed:	08/12/2015	2101h										
Test Code:	200.8-W	Date Prepared:	08/12/2015	1539h									
Antimony	< 0.00200	mg/L	E200.8	0.0000366	0.00200								U
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
Barium	< 0.00200	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
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	0.0000383	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
Lab Sample ID: MB-38504	Date Analyzed:	08/13/2015	1137h										
Test Code:	200.8-W	Date Prepared:	08/12/2015	1539h									
Lead	< 0.00200	mg/L	E200.8	0.000264	0.00200								U



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508227

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-38510	Date Analyzed:	08/13/2015	828h										
Test Code:	HG-DW-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U
Lab Sample ID: MB-38509	Date Analyzed:	08/13/2015	912h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/12/2015	1600h									
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: 1508227

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: 1508227-004CMS													
Date Analyzed:	08/12/2015 2024h												
Test Code:	200.7-DIS												
Date Prepared:	08/12/2015 1539h												
Aluminum	1.96	mg/L	E200.7	0.0237	0.100	1.000	0.72	124	70 - 130				
Calcium	52.0	mg/L	E200.7	0.0401	1.00	10.00	41.7	103	70 - 130				
Iron	1.36	mg/L	E200.7	0.0767	0.100	1.000	0.366	99.4	70 - 130				
Magnesium	15.2	mg/L	E200.7	0.0294	1.00	10.00	5.11	101	70 - 130				
Potassium	13.5	mg/L	E200.7	0.247	1.00	10.00	2.91	106	70 - 130				
Sodium	48.0	mg/L	E200.7	0.0330	1.00	10.00	37	110	70 - 130				
Lab Sample ID: 1508228-001CMS													
Date Analyzed:	08/12/2015 2044h												
Test Code:	200.7-DIS												
Date Prepared:	08/12/2015 1539h												
Aluminum	2.05	mg/L	E200.7	0.0237	0.100	1.000	0.907	114	70 - 130				
Calcium	47.6	mg/L	E200.7	0.0401	1.00	10.00	37.2	104	70 - 130				
Iron	1.33	mg/L	E200.7	0.0767	0.100	1.000	0.382	94.8	70 - 130				
Magnesium	16.9	mg/L	E200.7	0.0294	1.00	10.00	6.72	102	70 - 130				
Potassium	13.9	mg/L	E200.7	0.247	1.00	10.00	3.29	106	70 - 130				
Lab Sample ID: 1508228-001CMS													
Date Analyzed:	08/12/2015 2058h												
Test Code:	200.7-DIS												
Date Prepared:	08/12/2015 1539h												
Sodium	58.8	mg/L	E200.7	0.0330	1.00	10.00	51.3	75.0	70 - 130				2
Lab Sample ID: 1508227-001BMS													
Date Analyzed:	08/12/2015 2126h												
Test Code:	200.7-W												
Date Prepared:	08/12/2015 1539h												
Aluminum	71.5	mg/L	E200.7	0.237	1.00	1.000	56.4	1,510	70 - 130				2
Calcium	152	mg/L	E200.7	0.401	10.0	10.00	150	21.3	70 - 130				2
Lab Sample ID: 1508228-002BMS													
Date Analyzed:	08/12/2015 2148h												
Test Code:	200.7-W												
Date Prepared:	08/12/2015 1539h												
Calcium	110	mg/L	E200.7	0.401	10.0	10.00	98.9	115	70 - 130				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508227

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: 1508227-001BMS													
Date Analyzed:	08/12/2015 2216h												
Test Code:	200.7-W												
Date Prepared:	08/12/2015 1539h												
Iron	43.2	mg/L	E200.7	0.0767	0.100	1.000	35.9	726	70 - 130				2
Magnesium	42.4	mg/L	E200.7	0.0294	1.00	10.00	30.1	123	70 - 130				
Potassium	23.1	mg/L	E200.7	0.247	1.00	10.00	11.7	115	70 - 130				
Sodium	51.5	mg/L	E200.7	0.0330	1.00	10.00	41.6	98.5	70 - 130				
Lab Sample ID: 1508228-002BMS													
Date Analyzed:	08/12/2015 2239h												
Test Code:	200.7-W												
Date Prepared:	08/12/2015 1539h												
Aluminum	52.9	mg/L	E200.7	0.0237	0.100	1.000	47.8	510	70 - 130				2
Iron	37.8	mg/L	E200.7	0.0767	0.100	1.000	37	76.2	70 - 130				
Magnesium	32.4	mg/L	E200.7	0.0294	1.00	10.00	22.2	102	70 - 130				
Potassium	19.2	mg/L	E200.7	0.247	1.00	10.00	9.34	98.4	70 - 130				
Sodium	47.0	mg/L	E200.7	0.0330	1.00	10.00	36.4	105	70 - 130				
Lab Sample ID: 1508227-004CMS													
Date Analyzed:	08/13/2015 1045h												
Test Code:	200.8-DIS												
Date Prepared:	08/12/2015 1539h												
Antimony	0.175	mg/L	E200.8	0.0000366	0.00200	0.2000	0.0000516	87.3	75 - 125				
Arsenic	0.211	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00133	105	75 - 125				
Barium	0.537	mg/L	E200.8	0.000538	0.00200	0.2000	0.334	101	75 - 125				
Beryllium	0.211	mg/L	E200.8	0.0000288	0.00200	0.2000	0	106	75 - 125				
Cadmium	0.200	mg/L	E200.8	0.000193	0.000500	0.2000	0	100	75 - 125				
Chromium	0.202	mg/L	E200.8	0.00154	0.00200	0.2000	0	101	75 - 125				
Cobalt	0.198	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000155	99.0	75 - 125				
Copper	0.206	mg/L	E200.8	0.000692	0.00200	0.2000	0.00303	102	75 - 125				
Lead	0.202	mg/L	E200.8	0.000264	0.00200	0.2000	0.00027	101	75 - 125				
Manganese	0.208	mg/L	E200.8	0.00153	0.00200	0.2000	0.0051	101	75 - 125				
Molybdenum	0.206	mg/L	E200.8	0.000206	0.00200	0.2000	0.00158	102	75 - 125				
Nickel	0.198	mg/L	E200.8	0.000754	0.00200	0.2000	0	99.0	75 - 125				
Selenium	0.203	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00076	101	75 - 125				
Silver	0.193	mg/L	E200.8	0.0000244	0.00200	0.2000	0	96.7	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: 1508227

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: 1508227-004CMS													
Date Analyzed:		08/13/2015 1045h											
Test Code:		200.8-DIS											
Date Prepared:		08/12/2015 1539h											
Thallium	0.196	mg/L	E200.8	0.0000242	0.00200	0.2000	0	98.0	75 - 125				
Vanadium	0.207	mg/L	E200.8	0.000438	0.00440	0.2000	0.00246	102	75 - 125				
Zinc	1.05	mg/L	E200.8	0.00476	0.00500	1.000	0.0149	103	75 - 125				
Lab Sample ID: 1508228-001CMS													
Date Analyzed:		08/13/2015 1111h											
Test Code:		200.8-DIS											
Date Prepared:		08/12/2015 1539h											
Antimony	0.178	mg/L	E200.8	0.0000366	0.00200	0.2000	0.00142	88.3	75 - 125				
Arsenic	0.212	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00198	105	75 - 125				
Barium	0.584	mg/L	E200.8	0.000538	0.00200	0.2000	0.391	96.3	75 - 125				
Beryllium	0.208	mg/L	E200.8	0.0000288	0.00200	0.2000	0.0000491	104	75 - 125				
Cadmium	0.198	mg/L	E200.8	0.000193	0.000500	0.2000	0	99.0	75 - 125				
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0	99.5	75 - 125				
Cobalt	0.197	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000179	98.2	75 - 125				
Copper	0.204	mg/L	E200.8	0.000692	0.00200	0.2000	0.00313	101	75 - 125				
Lead	0.198	mg/L	E200.8	0.000264	0.00200	0.2000	0	99.1	75 - 125				
Manganese	0.207	mg/L	E200.8	0.00153	0.00200	0.2000	0.00455	101	75 - 125				
Molybdenum	0.202	mg/L	E200.8	0.000206	0.00200	0.2000	0.00246	99.9	75 - 125				
Nickel	0.196	mg/L	E200.8	0.000754	0.00200	0.2000	0.000847	97.6	75 - 125				
Selenium	0.204	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000775	102	75 - 125				
Silver	0.191	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000205	95.3	75 - 125				
Thallium	0.194	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000362	96.9	75 - 125				
Vanadium	0.210	mg/L	E200.8	0.000438	0.00440	0.2000	0.00782	101	75 - 125				
Zinc	1.05	mg/L	E200.8	0.00476	0.00500	1.000	0.0124	104	75 - 125				
Lab Sample ID: 1508227-001BMS													
Date Analyzed:		08/12/2015 2336h											
Test Code:		200.8-W											
Date Prepared:		08/12/2015 1539h											
Antimony	0.0129	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000345	6.29	75 - 125				1
Arsenic	0.178	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0133	82.5	75 - 125				
Beryllium	0.189	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00509	91.9	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: 1508227

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: 1508227-001BMS	Date Analyzed:	08/12/2015 2336h											
Test Code:	200.8-W	Date Prepared:	08/12/2015 1539h										
Cadmium	0.193	mg/L	E200.8	0.000193	0.000500	0.2000	0.00109	95.9	75 - 125				
Chromium	0.203	mg/L	E200.8	0.00154	0.00200	0.2000	0.0235	89.7	75 - 125				
Cobalt	0.199	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0253	86.7	75 - 125				
Copper	0.233	mg/L	E200.8	0.000692	0.00200	0.2000	0.061	86.1	75 - 125				
Lead	0.251	mg/L	E200.8	0.000264	0.00200	0.2000	0.0751	88.1	75 - 125				
Manganese	1.85	mg/L	E200.8	0.00153	0.00200	0.2000	1.66	91.5	75 - 125				
Molybdenum	0.0949	mg/L	E200.8	0.000206	0.00200	0.2000	0.000774	47.1	75 - 125				1
Nickel	0.210	mg/L	E200.8	0.000754	0.00200	0.2000	0.0342	87.8	75 - 125				
Selenium	0.157	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000925	78.3	75 - 125				
Silver	0.191	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000475	95.1	75 - 125				
Thallium	0.175	mg/L	E200.8	0.0000242	0.00200	0.2000	0.00059	87.4	75 - 125				
Vanadium	0.228	mg/L	E200.8	0.000438	0.00440	0.2000	0.0572	85.4	75 - 125				
Zinc	1.02	mg/L	E200.8	0.00476	0.00500	1.000	0.168	85.4	75 - 125				
Lab Sample ID: 1508228-002BMS	Date Analyzed:	08/13/2015 009h											
Test Code:	200.8-W	Date Prepared:	08/12/2015 1539h										
Antimony	0.0222	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000218	11.0	75 - 125				1
Arsenic	0.176	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0115	82.1	75 - 125				
Beryllium	0.192	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00387	93.8	75 - 125				
Cadmium	0.194	mg/L	E200.8	0.000193	0.000500	0.2000	0.00101	96.5	75 - 125				
Chromium	0.198	mg/L	E200.8	0.00154	0.00200	0.2000	0.0217	88.1	75 - 125				
Cobalt	0.197	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0226	87.3	75 - 125				
Copper	0.235	mg/L	E200.8	0.000692	0.00200	0.2000	0.0616	86.8	75 - 125				
Lead	0.242	mg/L	E200.8	0.000264	0.00200	0.2000	0.0635	89.0	75 - 125				
Manganese	1.53	mg/L	E200.8	0.00153	0.00200	0.2000	1.31	113	75 - 125				
Molybdenum	0.121	mg/L	E200.8	0.000206	0.00200	0.2000	0.000711	60.3	75 - 125				1
Nickel	0.204	mg/L	E200.8	0.000754	0.00200	0.2000	0.0277	88.1	75 - 125				
Selenium	0.155	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000883	77.0	75 - 125				
Silver	0.193	mg/L	E200.8	0.0000244	0.00200	0.2000	0.00044	96.4	75 - 125				



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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508227

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: 1508228-002BMS	Date Analyzed:	08/13/2015	009h										
Test Code:	200.8-W	Date Prepared:	08/12/2015	1539h									
Thallium	0.181	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000579	90.4	75 - 125				
Vanadium	0.225	mg/L	E200.8	0.000438	0.00440	0.2000	0.0527	86.2	75 - 125				
Zinc	1.03	mg/L	E200.8	0.00476	0.00500	1.000	0.167	86.1	75 - 125				
Lab Sample ID: 1508227-001BMS	Date Analyzed:	08/13/2015	035h										
Test Code:	200.8-W	Date Prepared:	08/12/2015	1539h									
Barium	1.51	mg/L	E200.8	0.00538	0.0200	0.2000	1.35	83.9	75 - 125				
Lab Sample ID: 1508228-002BMS	Date Analyzed:	08/13/2015	058h										
Test Code:	200.8-W	Date Prepared:	08/12/2015	1539h									
Barium	1.08	mg/L	E200.8	0.00538	0.0200	0.2000	0.913	84.1	75 - 125				
Lab Sample ID: 1508227-002BMS	Date Analyzed:	08/13/2015	845h										
Test Code:	HG-DW-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00367	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000115	107	80 - 120				
Lab Sample ID: 1508228-002BMS	Date Analyzed:	08/13/2015	903h										
Test Code:	HG-DW-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00368	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000113	107	80 - 120				
Lab Sample ID: 1508227-003CMS	Date Analyzed:	08/13/2015	928h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00340	mg/L	E245.1	0.00000892	0.000150	0.003330	0	102	85 - 115				
Lab Sample ID: 1508228-002CMS	Date Analyzed:	08/13/2015	955h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00354	mg/L	E245.1	0.00000892	0.000150	0.003330	0	106	85 - 115				

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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Kyle F. Gross
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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508227-004CMSD													
Date Analyzed:		08/12/2015 2037h											
Test Code:		200.7-DIS											
Date Prepared:		08/12/2015 1539h											
Aluminum	1.95	mg/L	E200.7	0.0237	0.100	1.000	0.72	123	70 - 130	1.96	0.512	20	
Calcium	50.8	mg/L	E200.7	0.0401	1.00	10.00	41.7	91.0	70 - 130	52	2.33	20	
Iron	1.36	mg/L	E200.7	0.0767	0.100	1.000	0.366	99.4	70 - 130	1.36	0	20	
Magnesium	15.1	mg/L	E200.7	0.0294	1.00	10.00	5.11	99.9	70 - 130	15.2	0.660	20	
Potassium	13.2	mg/L	E200.7	0.247	1.00	10.00	2.91	103	70 - 130	13.5	2.25	20	
Sodium	46.7	mg/L	E200.7	0.0330	1.00	10.00	37	97.0	70 - 130	48	2.75	20	
Lab Sample ID: 1508228-001CMSD													
Date Analyzed:		08/12/2015 2046h											
Test Code:		200.7-DIS											
Date Prepared:		08/12/2015 1539h											
Aluminum	2.03	mg/L	E200.7	0.0237	0.100	1.000	0.907	112	70 - 130	2.05	0.980	20	
Calcium	46.6	mg/L	E200.7	0.0401	1.00	10.00	37.2	94.0	70 - 130	47.6	2.12	20	
Iron	1.33	mg/L	E200.7	0.0767	0.100	1.000	0.382	94.8	70 - 130	1.33	0	20	
Magnesium	16.6	mg/L	E200.7	0.0294	1.00	10.00	6.72	98.8	70 - 130	16.9	1.79	20	
Potassium	13.8	mg/L	E200.7	0.247	1.00	10.00	3.29	105	70 - 130	13.9	0.722	20	
Lab Sample ID: 1508228-001CMSD													
Date Analyzed:		08/12/2015 2101h											
Test Code:		200.7-DIS											
Date Prepared:		08/12/2015 1539h											
Sodium	57.6	mg/L	E200.7	0.0330	1.00	10.00	51.3	63.0	70 - 130	58.8	2.06	20	²
Lab Sample ID: 1508227-001BMSD													
Date Analyzed:		08/12/2015 2128h											
Test Code:		200.7-W											
Date Prepared:		08/12/2015 1539h											
Aluminum	62.7	mg/L	E200.7	0.237	1.00	1.000	56.4	632	70 - 130	71.5	13.0	20	²
Calcium	154	mg/L	E200.7	0.401	10.0	10.00	150	37.2	70 - 130	152	1.04	20	²
Lab Sample ID: 1508227-001BMSD													
Date Analyzed:		08/12/2015 2218h											
Test Code:		200.7-W											
Date Prepared:		08/12/2015 1539h											
Iron	37.8	mg/L	E200.7	0.0767	0.100	1.000	35.9	182	70 - 130	43.2	13.4	20	²
Magnesium	40.6	mg/L	E200.7	0.0294	1.00	10.00	30.1	105	70 - 130	42.4	4.29	20	
Potassium	22.2	mg/L	E200.7	0.247	1.00	10.00	11.7	106	70 - 130	23.1	4.09	20	
Sodium	51.7	mg/L	E200.7	0.0330	1.00	10.00	41.6	101	70 - 130	51.5	0.556	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508228-002BMSD													
Date Analyzed:	08/12/2015 2241h												
Test Code:	200.7-W												
Date Prepared:	08/12/2015 1539h												
Aluminum	59.2	mg/L	E200.7	0.0237	0.100	1.000	47.8	1,140	70 - 130	52.9	11.2	20	2
Iron	41.7	mg/L	E200.7	0.0767	0.100	1.000	37	465	70 - 130	37.8	9.80	20	2
Magnesium	33.5	mg/L	E200.7	0.0294	1.00	10.00	22.2	113	70 - 130	32.4	3.34	20	
Potassium	20.0	mg/L	E200.7	0.247	1.00	10.00	9.34	107	70 - 130	19.2	4.17	20	
Sodium	47.7	mg/L	E200.7	0.0330	1.00	10.00	36.4	113	70 - 130	47	1.65	20	
Lab Sample ID: 1508228-002BMSD													
Date Analyzed:	08/13/2015 948h												
Test Code:	200.7-W												
Date Prepared:	08/12/2015 1539h												
Calcium	109	mg/L	E200.7	0.401	10.0	10.00	98.9	97.0	70 - 130	110	1.64	20	
Lab Sample ID: 1508227-004CMSD													
Date Analyzed:	08/13/2015 1105h												
Test Code:	200.8-DIS												
Date Prepared:	08/12/2015 1539h												
Antimony	0.168	mg/L	E200.8	0.0000366	0.00200	0.2000	0.0000516	84.1	75 - 125	0.175	3.77	20	
Arsenic	0.208	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00133	103	75 - 125	0.211	1.79	20	
Barium	0.515	mg/L	E200.8	0.000538	0.00200	0.2000	0.334	90.5	75 - 125	0.537	4.12	20	
Beryllium	0.207	mg/L	E200.8	0.0000288	0.00200	0.2000	0	103	75 - 125	0.211	2.18	20	
Cadmium	0.194	mg/L	E200.8	0.000193	0.000500	0.2000	0	97.0	75 - 125	0.2	3.06	20	
Chromium	0.194	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.9	75 - 125	0.202	4.37	20	
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000155	94.7	75 - 125	0.198	4.40	20	
Copper	0.197	mg/L	E200.8	0.000692	0.00200	0.2000	0.00303	97.0	75 - 125	0.206	4.58	20	
Lead	0.194	mg/L	E200.8	0.000264	0.00200	0.2000	0.00027	97.0	75 - 125	0.202	3.71	20	
Manganese	0.200	mg/L	E200.8	0.00153	0.00200	0.2000	0.0051	97.5	75 - 125	0.208	3.82	20	
Molybdenum	0.197	mg/L	E200.8	0.000206	0.00200	0.2000	0.00158	97.6	75 - 125	0.206	4.31	20	
Nickel	0.190	mg/L	E200.8	0.000754	0.00200	0.2000	0	95.1	75 - 125	0.198	4.06	20	
Selenium	0.201	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00076	100	75 - 125	0.203	1.12	20	
Silver	0.186	mg/L	E200.8	0.0000244	0.00200	0.2000	0	93.2	75 - 125	0.193	3.68	20	
Thallium	0.190	mg/L	E200.8	0.0000242	0.00200	0.2000	0	95.2	75 - 125	0.196	2.93	20	
Vanadium	0.197	mg/L	E200.8	0.000438	0.00440	0.2000	0.00246	97.1	75 - 125	0.207	5.15	20	
Zinc	1.03	mg/L	E200.8	0.00476	0.00500	1.000	0.0149	101	75 - 125	1.05	2.35	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508228-001CMSD		Date Analyzed:	08/13/2015 1115h										
Test Code: 200.8-DIS		Date Prepared:	08/12/2015 1539h										
Antimony	0.181	mg/L	E200.8	0.0000366	0.00200	0.2000	0.00142	89.8	75 - 125	0.178	1.59	20	
Arsenic	0.219	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00198	108	75 - 125	0.212	2.84	20	
Barium	0.578	mg/L	E200.8	0.000538	0.00200	0.2000	0.391	93.4	75 - 125	0.584	0.998	20	
Beryllium	0.211	mg/L	E200.8	0.0000288	0.00200	0.2000	0.0000491	105	75 - 125	0.208	1.43	20	
Cadmium	0.201	mg/L	E200.8	0.000193	0.000500	0.2000	0	100	75 - 125	0.198	1.25	20	
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0	99.7	75 - 125	0.199	0.256	20	
Cobalt	0.196	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000179	98.0	75 - 125	0.197	0.180	20	
Copper	0.203	mg/L	E200.8	0.000692	0.00200	0.2000	0.00313	100	75 - 125	0.204	0.354	20	
Lead	0.198	mg/L	E200.8	0.000264	0.00200	0.2000	0	99.0	75 - 125	0.198	0.0819	20	
Manganese	0.205	mg/L	E200.8	0.00153	0.00200	0.2000	0.00455	100	75 - 125	0.207	0.757	20	
Molybdenum	0.200	mg/L	E200.8	0.000206	0.00200	0.2000	0.00246	99.0	75 - 125	0.202	0.925	20	
Nickel	0.196	mg/L	E200.8	0.000754	0.00200	0.2000	0.000847	97.6	75 - 125	0.196	0.0116	20	
Selenium	0.217	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000775	108	75 - 125	0.204	5.74	20	
Silver	0.191	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000205	95.4	75 - 125	0.191	0.0531	20	
Thallium	0.193	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000362	96.7	75 - 125	0.194	0.226	20	
Vanadium	0.208	mg/L	E200.8	0.000438	0.00440	0.2000	0.00782	100	75 - 125	0.21	0.686	20	
Zinc	1.09	mg/L	E200.8	0.00476	0.00500	1.000	0.0124	107	75 - 125	1.05	3.28	20	
Lab Sample ID: 1508227-001BMSD		Date Analyzed:	08/12/2015 2339h										
Test Code: 200.8-W		Date Prepared:	08/12/2015 1539h										
Antimony	0.0180	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000345	8.81	75 - 125	0.0129	32.7	20	¹ @
Arsenic	0.189	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0133	87.9	75 - 125	0.178	5.89	20	
Beryllium	0.199	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00509	97.1	75 - 125	0.189	5.33	20	
Cadmium	0.202	mg/L	E200.8	0.000193	0.000500	0.2000	0.00109	100	75 - 125	0.193	4.45	20	
Chromium	0.205	mg/L	E200.8	0.00154	0.00200	0.2000	0.0235	90.7	75 - 125	0.203	1.07	20	
Cobalt	0.205	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0253	89.7	75 - 125	0.199	3.07	20	
Copper	0.237	mg/L	E200.8	0.000692	0.00200	0.2000	0.061	87.9	75 - 125	0.233	1.54	20	
Lead	0.258	mg/L	E200.8	0.000264	0.00200	0.2000	0.0751	91.5	75 - 125	0.251	2.71	20	
Manganese	1.90	mg/L	E200.8	0.00153	0.00200	0.2000	1.66	118	75 - 125	1.85	2.86	20	



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Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508227-001BMSD		Date Analyzed:	08/12/2015 2339h										
Test Code: 200.8-W		Date Prepared:	08/12/2015 1539h										
Molybdenum	0.116	mg/L	E200.8	0.000206	0.00200	0.2000	0.000774	57.5	75 - 125	0.0949	19.8	20	1
Nickel	0.214	mg/L	E200.8	0.000754	0.00200	0.2000	0.0342	89.9	75 - 125	0.21	2.04	20	
Selenium	0.165	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000925	82.1	75 - 125	0.157	4.74	20	
Silver	0.198	mg/L	E200.8	0.0000244	0.00200	0.2000	0.000475	99.0	75 - 125	0.191	4.01	20	
Thallium	0.182	mg/L	E200.8	0.0000242	0.00200	0.2000	0.00059	90.7	75 - 125	0.175	3.66	20	
Vanadium	0.234	mg/L	E200.8	0.000438	0.00440	0.2000	0.0572	88.4	75 - 125	0.228	2.57	20	
Zinc	1.05	mg/L	E200.8	0.00476	0.00500	1.000	0.168	88.5	75 - 125	1.02	3.07	20	
Lab Sample ID: 1508228-002BMSD		Date Analyzed:	08/13/2015 012h										
Test Code: 200.8-W		Date Prepared:	08/12/2015 1539h										
Antimony	0.0197	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000218	9.76	75 - 125	0.0222	11.8	20	1
Arsenic	0.179	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0115	83.9	75 - 125	0.176	2.04	20	
Beryllium	0.193	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00387	94.7	75 - 125	0.192	0.867	20	
Cadmium	0.197	mg/L	E200.8	0.000193	0.000500	0.2000	0.00101	98.1	75 - 125	0.194	1.67	20	
Chromium	0.205	mg/L	E200.8	0.00154	0.00200	0.2000	0.0217	91.5	75 - 125	0.198	3.47	20	
Cobalt	0.202	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0226	89.9	75 - 125	0.197	2.52	20	
Copper	0.244	mg/L	E200.8	0.000692	0.00200	0.2000	0.0616	91.0	75 - 125	0.235	3.48	20	
Lead	0.246	mg/L	E200.8	0.000264	0.00200	0.2000	0.0635	91.4	75 - 125	0.242	1.93	20	
Manganese	1.57	mg/L	E200.8	0.00153	0.00200	0.2000	1.31	130	75 - 125	1.53	2.27	20	2
Molybdenum	0.110	mg/L	E200.8	0.000206	0.00200	0.2000	0.000711	54.8	75 - 125	0.121	9.49	20	1
Nickel	0.208	mg/L	E200.8	0.000754	0.00200	0.2000	0.0277	90.1	75 - 125	0.204	2.01	20	
Selenium	0.160	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000883	79.7	75 - 125	0.155	3.47	20	
Silver	0.196	mg/L	E200.8	0.0000244	0.00200	0.2000	0.00044	98.0	75 - 125	0.193	1.65	20	
Thallium	0.183	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000579	91.4	75 - 125	0.181	1.14	20	
Vanadium	0.233	mg/L	E200.8	0.000438	0.00440	0.2000	0.0527	90.0	75 - 125	0.225	3.33	20	
Zinc	1.04	mg/L	E200.8	0.00476	0.00500	1.000	0.167	87.7	75 - 125	1.03	1.63	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508227-001BMSD	Date Analyzed:	08/13/2015	038h										
Test Code:	200.8-W	Date Prepared:	08/12/2015	1539h									
Barium	1.54	mg/L	E200.8	0.00538	0.0200	0.2000	1.35	98.9	75 - 125	1.51	1.96	20	
Lab Sample ID: 1508228-002BMSD	Date Analyzed:	08/13/2015	101h										
Test Code:	200.8-W	Date Prepared:	08/12/2015	1539h									
Barium	1.08	mg/L	E200.8	0.00538	0.0200	0.2000	0.913	84.6	75 - 125	1.08	0.0794	20	
Lab Sample ID: 1508227-002BMSD	Date Analyzed:	08/13/2015	849h										
Test Code:	HG-DW-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00364	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000115	106	80 - 120	0.00367	0.729	20	
Lab Sample ID: 1508228-002BMSD	Date Analyzed:	08/13/2015	905h										
Test Code:	HG-DW-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00360	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000113	105	80 - 120	0.00368	2.20	20	
Lab Sample ID: 1508227-003CMSD	Date Analyzed:	08/13/2015	932h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00356	mg/L	E245.1	0.00000892	0.000150	0.003330	0	107	85 - 115	0.0034	4.64	20	
Lab Sample ID: 1508228-002CMSD	Date Analyzed:	08/13/2015	957h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/12/2015	1600h									
Mercury	0.00350	mg/L	E245.1	0.00000892	0.000150	0.003330	0	105	85 - 115	0.00354	1.04	20	

@ - 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.

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



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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508227-001ADUP Date Analyzed: 08/13/2015 612h													
Test Code: COND-W-2510B													
Conductivity	506	µmhos/cm	SM2510B	0.436	2.00					508	0.394	5	B
Lab Sample ID: 1508227-004ADUP Date Analyzed: 08/13/2015 612h													
Test Code: COND-W-2510B													
Conductivity	486	µmhos/cm	SM2510B	0.436	2.00					483	0.619	5	B
Lab Sample ID: 1508228-001ADUP Date Analyzed: 08/13/2015 612h													
Test Code: COND-W-2510B													
Conductivity	556	µmhos/cm	SM2510B	0.436	2.00					558	0.359	5	B
Lab Sample ID: 1508227-004ADUP Date Analyzed: 08/12/2015 1827h													
Test Code: PH-4500H+B													
pH @ 25° C	8.26	pH Units	SM4500-H+B	1.00	1.00					8.27	0.121	5	H
Lab Sample ID: 1508228-004ADUP Date Analyzed: 08/12/2015 1827h													
Test Code: PH-4500H+B													
pH @ 25° C	8.28	pH Units	SM4500-H+B	1.00	1.00					8.26	0.242	5	H
Lab Sample ID: 1508227-002ADUP Date Analyzed: 08/12/2015 1420h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	360	mg/L	SM2540C	30.6	50.0					360	0	5	
Lab Sample ID: 1508228-002ADUP Date Analyzed: 08/12/2015 1420h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	450	mg/L	SM2540C	30.6	50.0					390	14.3	5	@
Lab Sample ID: 1508227-002ADUP Date Analyzed: 08/12/2015 1445h													
Test Code: TSS-W-2540D													
Total Suspended Solids	4,020	mg/L	SM2540D	70.8	75.0					4000	0.499	5	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508228-002ADUP	Date Analyzed: 08/12/2015 1445h												
Test Code: TSS-W-2540D													
Total Suspended Solids	3,530	mg/L	SM2540D	70.8	75.0					3290	7.04	5	@

@ - 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.



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508227

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-R81550													
Date Analyzed:		08/12/2015 1650h											
Test Code:		300.0-W											
Chloride	5.24	mg/L	E300.0	0.00751	0.100	5.000	0	105	90 - 110				
Sulfate	5.12	mg/L	E300.0	0.0211	0.750	5.000	0	102	90 - 110				
Lab Sample ID: LCS-R81547													
Date Analyzed:		08/13/2015 632h											
Test Code:		ALK-W-2320B											
Alkalinity (as CaCO3)	49,900	mg/L	SM2320B	1.86	10.0	50,000	0	99.7	90 - 110				
Lab Sample ID: LCS-R81545													
Date Analyzed:		08/13/2015 612h											
Test Code:		COND-W-2510B											
Conductivity	1,000	µmhos/cm	SM2510B	0.436	2.00	1,000	0	100	98 - 102				
Lab Sample ID: LCS NO3-R81582													
Date Analyzed:		08/12/2015 1804h											
Test Code:		NO2/NO3-W-353.2											
Nitrate/Nitrite (as N)	0.968	mg/L	E353.2	0.00833	0.0100	1.000	0	96.8	90 - 110				
Lab Sample ID: LCS-R81541													
Date Analyzed:		08/12/2015 1827h											
Test Code:		PH-4500H+B											
pH @ 25° C	8.98	pH Units	SM4500-H+B	1.00	1.00	9.000	0	99.8	98 - 102				
Lab Sample ID: LCS-R81560													
Date Analyzed:		08/12/2015 1420h											
Test Code:		TDS-W-2540C											
Total Dissolved Solids	216	mg/L	SM2540C	6.13	10.0	205.0	0	105	80 - 120				
Lab Sample ID: LCS-R81562													
Date Analyzed:		08/12/2015 1345h											
Test Code:		TSS-W-2540D											
Total Suspended Solids	108	mg/L	SM2540D	2.83	3.00	100.0	0	108	80 - 120				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508227

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
Lab Sample ID: MB-R81550													
Date Analyzed:		08/12/2015 1633h											
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-R81547													
Date Analyzed:		08/13/2015 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-R81545													
Date Analyzed:		08/13/2015 612h											
Test Code:		COND-W-2510B											
Conductivity	0.640	µmhos/cm	SM2510B	0.436	2.00								J
Lab Sample ID: MB-R81582													
Date Analyzed:		08/12/2015 1802h											
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-R81560													
Date Analyzed:		08/12/2015 1420h											
Test Code:		TDS-W-2540C											
Total Dissolved Solids	< 10.0	mg/L	SM2540C	6.13	10.0								U
Lab Sample ID: MB-R81562													
Date Analyzed:		08/12/2015 1345h											
Test Code:		TSS-W-2540D											
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.83	3.00								U

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: 1508227
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: 1508188-001AMS Date Analyzed: 08/12/2015 1724h													
Test Code: 300.0-W													
Chloride	538	mg/L	E300.0	0.751	10.0	500.0	10	106	90 - 110				
Sulfate	631	mg/L	E300.0	2.11	75.0	500.0	132	99.9	90 - 110				
Lab Sample ID: 1508189-001AMS Date Analyzed: 08/12/2015 1955h													
Test Code: 300.0-W													
Chloride	537	mg/L	E300.0	0.751	10.0	500.0	10.3	105	90 - 110				
Sulfate	624	mg/L	E300.0	2.11	75.0	500.0	126	99.4	90 - 110				
Lab Sample ID: 1508227-001AMS Date Analyzed: 08/13/2015 042h													
Test Code: 300.0-W													
Chloride	540	mg/L	E300.0	0.751	10.0	500.0	10	106	90 - 110				
Sulfate	621	mg/L	E300.0	2.11	75.0	500.0	129	98.3	90 - 110				
Lab Sample ID: 1508228-001AMS Date Analyzed: 08/13/2015 316h													
Test Code: 300.0-W													
Chloride	543	mg/L	E300.0	0.751	10.0	500.0	10	107	90 - 110				
Sulfate	625	mg/L	E300.0	2.11	75.0	500.0	117	102	90 - 110				
Lab Sample ID: 1508227-001AMS Date Analyzed: 08/13/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	206	mg/L	SM2320B	1.86	10.0	100.0	108	98.0	80 - 120				
Lab Sample ID: 1508228-001AMS Date Analyzed: 08/13/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	213	mg/L	SM2320B	1.86	10.0	100.0	112	101	80 - 120				
Lab Sample ID: 1508227-001AMS NO3 Date Analyzed: 08/12/2015 1810h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	10.2	mg/L	E353.2	0.0833	0.100	10.00	0.423	98.2	90 - 110				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508227

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: 1508228-004AMS NO3	Date Analyzed: 08/12/2015 1834h												
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	9.72	mg/L	E353.2	0.0833	0.100	10.00	0.361	93.6	90 - 110				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508227
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: 1508188-001AMSD Date Analyzed: 08/12/2015 1741h													
Test Code: 300.0-W													
Chloride	539	mg/L	E300.0	0.751	10.0	500.0	10	106	90 - 110	538	0.224	20	
Sulfate	634	mg/L	E300.0	2.11	75.0	500.0	132	100	90 - 110	631	0.429	20	
Lab Sample ID: 1508189-001AMSD Date Analyzed: 08/12/2015 2012h													
Test Code: 300.0-W													
Chloride	539	mg/L	E300.0	0.751	10.0	500.0	10.3	106	90 - 110	537	0.473	20	
Sulfate	622	mg/L	E300.0	2.11	75.0	500.0	126	99.1	90 - 110	624	0.231	20	
Lab Sample ID: 1508227-001AMSD Date Analyzed: 08/13/2015 059h													
Test Code: 300.0-W													
Chloride	541	mg/L	E300.0	0.751	10.0	500.0	10	106	90 - 110	540	0.0929	20	
Sulfate	610	mg/L	E300.0	2.11	75.0	500.0	129	96.1	90 - 110	621	1.76	20	
Lab Sample ID: 1508228-001AMSD Date Analyzed: 08/13/2015 333h													
Test Code: 300.0-W													
Chloride	538	mg/L	E300.0	0.751	10.0	500.0	10	106	90 - 110	543	0.939	20	
Sulfate	620	mg/L	E300.0	2.11	75.0	500.0	117	101	90 - 110	625	0.781	20	
Lab Sample ID: 1508227-001AMSD Date Analyzed: 08/13/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	208	mg/L	SM2320B	1.86	10.0	100.0	108	99.7	80 - 120	206	0.821	10	
Lab Sample ID: 1508228-001AMSD Date Analyzed: 08/13/2015 632h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	211	mg/L	SM2320B	1.86	10.0	100.0	112	99.8	80 - 120	213	0.754	10	
Lab Sample ID: 1508227-001AMSD NO3 Date Analyzed: 08/12/2015 1811h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	10.1	mg/L	E353.2	0.0833	0.100	10.00	0.423	96.5	90 - 110	10.2	1.67	10	



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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: 1508227

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: 1508228-004AMSD NO3													
Date Analyzed: 08/12/2015 1836h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	9.75	mg/L	E353.2	0.0833	0.100	10.00	0.361	93.9	90 - 110	9.72	0.298	10	

WORK ORDER Summary

Work Order: **1508227** Page 1 of 4

Client: Utah Division of Water Quality
Client ID: UTD200
Project: Gold King Mine - San Juan River Sampling
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;

Contact: Lenora Sullivan
QC Level: II+ MDL
WO Type: Standard

Due Date: 8/13/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508227-001A	San Juan R @ Mexican Hat US163 Xing (4953000)	8/11/2015 1543h	8/12/2015 1400h	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	
				NO2/NO3-W-353.2		df - wc	
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
				TSS-W-2540D		df - wc	
1508227-001B				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	
1508227-001C				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	

WORK ORDER Summary

Work Order: **1508227**

Page 2 of 4

Client: Utah Division of Water Quality

Due Date: 8/13/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508227-002A	San Juan R @ Sand Island (4953250)	8/11/2015 1501h	8/12/2015 1400h	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	
				NO2/NO3-W-353.2		df - wc	
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
				TSS-W-2540D		df - wc	
				1508227-002B			
<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						
1508227-002C					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		
1508227-003A	San Juan R @ Town of Montezuma (4953990)	8/11/2015 1420h	8/12/2015 1400h	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	
				NO2/NO3-W-353.2		df - wc	
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
				TSS-W-2540D		df - wc	

WORK ORDER Summary

Work Order: **1508227** Page 3 of 4

Client: Utah Division of Water Quality

Due Date: 8/13/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage		
1508227-003B	San Juan R @ Town of Montezuma (4953990)	8/11/2015 1420h	8/12/2015 1400h	200.7-W	Aqueous		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		
				1508227-003C				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						
1508227-004A	San Juan R @ US160 Xing in CO (4954000)	8/11/2015 1317h	8/12/2015 1400h	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		
				NO2/NO3-W-353.2			df - wc		
				PH-4500H+B			df - wc		
				TDS-W-2540C			df - wc		
				TSS-W-2540D			df - wc		
				1508227-004B				200.7-W	
<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						

WORK ORDER Summary

Work Order: **1508227** Page 4 of 4

Client: Utah Division of Water Quality

Due Date: 8/13/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508227-004B	San Juan R @ US160 Xing in CO (4954000)	8/11/2015 1317h	8/12/2015 1400h	HG-DW-PR	Aqueous		df - total metals 1
1508227-004C				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					

American West Analytical Laboratories

Chain of Custody

Lab Sample Set #

15 08227

Page 1 of 1

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**

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

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)	Comments	Laboratory Use Only
SAN JUAN R AT MEXICAN HAT US163 XING (4953000)	08/11/15	1317	3		X	X	X	Dissolved Metals samples have been field filtered. 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.	Samples Were: 1 Shipped or hand delivered 2 Ambient <input checked="" type="checkbox"/> Chilled 3 Temperature 14 4 Received Broken/Leaking (Improperly Sealed) Y <input type="checkbox"/> 5 Properly Preserved <input checked="" type="checkbox"/> NO ₂ /NO ₃ <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> 6 Received Within pH <input checked="" type="checkbox"/> Holding Times <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/>
SAN JUAN R AT SAND ISLAND (4953250)	08/11/15	1420	3		X	X			
San Juan River at Town of Montezuma 4953990	08/11/15	1501	3		X	X			
SAN JUAN R AT US160 XING IN CO (4954000)	08/11/15	1543	3		X	X			
* Bottles used: US 160 1317 Montezuma 1420 Sand Island 1501 Mexican Hat 1543									COC Tape Was: 1 Present on Outer Package Y N NA 2 Unbroken on Outer Package Y N NA 3 Present on Sample Y N NA 4 Unbroken on Sample Y N NA Discrepancies Between Sample Labels and COC Record? Y <input checked="" type="checkbox"/>

Special Instructions:

* Per Jim go with sampling times on bottles and didn't match

Relinquished by: Signature <i>Ben Brown</i>	Date: 08/12/2015	Received by: Signature <i>Ryan Parker</i>	Date:
Print Name Ben Brown	Time: 0800	Print Name Ryan Parker	Time:
Relinquished by: Signature <i>Ryan Parker</i>	Date: 8/12/15	Received by: Signature <i>Uma Harris</i>	Date: 8/12/15
Print Name Ryan Parker	Time: 1400	Print Name Uma Harris	Time: 1400

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	1	2	3	4														
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														
NO ₂ & NO ₃	pH <2 H ₂ SO ₄																		
O & G	pH <2 HCL																		
Phenols	pH <2 H ₂ SO ₄																		
Sulfide	pH > 9NaOH, Zn Acetate																		
TKN	pH <2 H ₂ SO ₄																		
T PO ₄	pH <2 H ₂ SO ₄																		

- 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.