

3440 South 700 West Salt Lake City, UT 84119 Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687 e-mail: awal@awal-labs.com, web: www.awal-labs.com Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

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

RE: Gold King Mine - San Juan River Sampling

Dear Lenora Sullivan:

Lab Set ID: 1508262

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.

This is a revision to a report originally issued 8/14/2015. Pages 1-13 have been revised to update collection times.

Thank You,

Approved by:

Laboratory Director or designee



Salt Lake City, UT 84119

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

Lenora Sullivan

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-001							
<b>Client Sample ID:</b>	San Juan R @ Mexican Hat US163 Xing (4953000)							
<b>Collection Date:</b>	8/12/2015 1706h							
<b>Received Date:</b>	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 2233h	E200.7	0.237	1.00	54.7	2
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 1945h	E200.8	0.0000366	0.00200	0.000775	$\mathbf{J}^{1}$
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.0000920	0.00200	0.0175	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.000538	0.00200	1.35	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.0000288	0.00200	0.00677	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.000193	0.000500	0.00117	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2233h	E200.7	0.401	10.0	186	2
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.00154	0.00200	0.0232	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.0000434	0.00400	0.0332	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.000692	0.00200	0.0808	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.7	0.0767	0.100	37.5	2
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.000264	0.00200	0.0829	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.7	0.0294	1.00	33.3	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2337h	E200.8	0.00764	0.0100	2.17	2
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 956h	E245.1	0.00000892	0.000150	0.000143	J
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.000206	0.00200	0.000312	$\mathbf{J}^{1}$
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.000754	0.00200	0.0389	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.7	0.247	1.00	10.7	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.0000634	0.00200	0.00122	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.0000244	0.00200	0.000488	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2310h	E200.7	0.0330	1.00	44.4	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.0000242	0.00200	0.000604	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.000438	0.00440	0.0637	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2231h	E200.8	0.00476	0.00500	0.190	

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

<sup>2</sup> - 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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Salt Lake City, UT 84119

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

Lenora Sullivan

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-002							
<b>Client Sample ID:</b>	San Juan R @ Sand Island (4953250)							
<b>Collection Date:</b>	12/30/1899 1457h							
<b>Received Date:</b>	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 2317h	E200.7	0.0237	0.100	30.6	
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 2002h	E200.8	0.0000366	0.00200	0.000259	J
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.0000920	0.00200	0.0103	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.000538	0.00200	0.718	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.0000288	0.00200	0.00361	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.000193	0.000500	0.000712	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2244h	E200.7	0.401	10.0	90.9	
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.00154	0.00200	0.0136	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.0000434	0.00400	0.0192	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.000692	0.00200	0.0534	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2317h	E200.7	0.0767	0.100	23.7	
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.000264	0.00200	0.0491	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2317h	E200.7	0.0294	1.00	17.3	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.00153	0.00200	1.19	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 950h	E245.1	0.00000892	0.000150	0.0000800	J
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.000206	0.00200	0.000515	J
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.000754	0.00200	0.0217	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2317h	E200.7	0.247	1.00	6.84	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.0000634	0.00200	0.000923	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.0000244	0.00200	0.000486	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2317h	E200.7	0.0330	1.00	33.2	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.0000242	0.00200	0.000411	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.000438	0.00440	0.0380	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2257h	E200.8	0.00476	0.00500	0.126	

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

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Salt Lake City, UT 84119

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

Lenora Sullivan

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality						
Project:	Gold King Mine - San Juan River Sampling						
Lab Sample ID:	1508262-003						
<b>Client Sample ID:</b>	San Juan River @ Town of Montezuma (4953990)						
Callestian Dates	10/20/1000 14041						
Conection Date:	12/30/1899 1404h						
Received Date:	12/30/1899 1404h 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 2326h	E200.7	0.0237	0.100	35.0	
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 2005h	E200.8	0.0000366	0.00200	0.000272	J
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.0000920	0.00200	0.0107	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.000538	0.00200	0.725	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.0000288	0.00200	0.00397	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.000193	0.000500	0.000916	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2246h	E200.7	0.401	10.0	130	
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.00154	0.00200	0.0170	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.0000434	0.00400	0.0195	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.000692	0.00200	0.0514	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2326h	E200.7	0.0767	0.100	26.5	
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.000264	0.00200	0.0541	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2326h	E200.7	0.0294	1.00	20.5	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.00153	0.00200	1.12	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 957h	E245.1	0.00000892	0.000150	0.000112	J
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.000206	0.00200	0.000397	J
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.000754	0.00200	0.0277	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2326h	E200.7	0.247	1.00	8.29	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.0000634	0.00200	0.00112	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.0000244	0.00200	0.000305	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2326h	E200.7	0.0330	1.00	34.5	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.0000242	0.00200	0.000561	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.000438	0.00440	0.0408	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2300h	E200.8	0.00476	0.00500	0.144	

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

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

Lenora Sullivan

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-004							
<b>Client Sample ID:</b>	San Juan R @ US160 Xing in CO (4954000)							
<b>Collection Date:</b>	8/12/2015 1209h							
<b>Received Date:</b>	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 2328h	E200.7	0.0237	0.100	28.5	
Antimony	7440-36-0	mg/L	8/14/2015 1431h	8/14/2015 2009h	E200.8	0.0000366	0.00200	0.000252	J
Arsenic	7440-38-2	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.0000920	0.00200	0.00921	
Barium	7440-39-3	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.000538	0.00200	0.683	
Beryllium	7440-41-7	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.0000288	0.00200	0.00252	
Cadmium	7440-43-9	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.000193	0.000500	0.000641	
Calcium	7440-70-2	mg/L	8/13/2015 1632h	8/13/2015 2248h	E200.7	0.401	10.0	146	
Chromium	7440-47-3	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.00154	0.00200	0.0132	
Cobalt	7440-48-4	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.0000434	0.00400	0.0145	
Copper	7440-50-8	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.000692	0.00200	0.0343	
Iron	7439-89-6	mg/L	8/13/2015 1632h	8/13/2015 2328h	E200.7	0.0767	0.100	18.1	
Lead	7439-92-1	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.000264	0.00200	0.0358	
Magnesium	7439-95-4	mg/L	8/13/2015 1632h	8/13/2015 2328h	E200.7	0.0294	1.00	24.5	
Manganese	7439-96-5	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.00153	0.00200	1.13	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1005h	E245.1	0.00000892	0.000150	0.0000583	J
Molybdenum	7439-98-7	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.000206	0.00200	0.000480	J
Nickel	7440-02-0	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.000754	0.00200	0.0220	
Potassium	7440-09-7	mg/L	8/13/2015 1632h	8/13/2015 2328h	E200.7	0.247	1.00	7.37	
Selenium	7782-49-2	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.0000634	0.00200	0.000751	J
Silver	7440-22-4	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.0000244	0.00200	0.000209	J
Sodium	7440-23-5	mg/L	8/13/2015 1632h	8/13/2015 2328h	E200.7	0.0330	1.00	28.7	
Thallium	7440-28-0	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.0000242	0.00200	0.000283	J
Vanadium	7440-62-2	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.000438	0.00440	0.0414	
Zinc	7440-66-6	mg/L	8/13/2015 1632h	8/13/2015 2304h	E200.8	0.00476	0.00500	0.0962	

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

### Report Date: 8/26/2015 Page 5 of 40



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Lenora Sullivan

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality								
Project:	Gold King Mine - San Juan River Sampling								
Lab Sample ID:	1508262-001								
<b>Client Sample ID:</b>	San Juan R @ Mexican Hat US163 Xing (4953000)								
<b>Collection Date:</b>	8/12/2015 1706h								
<b>Received Date:</b>	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 1336h	E200.7	0.0237	0.100	0.125	
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.0000366	0.00200	0.00141	J#B
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.0000920	0.00200	0.00159	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.000538	0.00200	0.245	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.0000288	0.00200	0.0000328	J
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1336h	E200.7	0.0401	1.00	59.8	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.0000434	0.00400	0.0000512	J
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.000692	0.00200	0.00334	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1336h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1336h	E200.7	0.0294	1.00	7.86	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1047h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.000206	0.00200	0.00227	
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1336h	E200.7	0.247	1.00	3.09	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.0000634	0.00200	0.000923	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.0000244	0.00200	0.000151	J
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1336h	E200.7	0.0330	1.00	42.1	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.000438	0.00440	0.00307	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1426h	E200.8	0.00476	0.00500	0.0142	

# - 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).

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

### Report Date: 8/26/2015 Page 6 of 40



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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

## **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-002							
<b>Client Sample ID:</b>	San Juan R @ Sand Island (4953250)							
<b>Collection Date:</b>	12/30/1899 1457h							
<b>Received Date:</b>	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 1339h	E200.7	0.0237	0.100	0.605	
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.0000366	0.00200	0.00178	J#
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.0000920	0.00200	0.00143	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.000538	0.00200	0.260	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.0000288	0.00200	0.0000633	J
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1339h	E200.7	0.0401	1.00	46.6	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.0000434	0.00400	0.000162	J
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.000692	0.00200	0.00298	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1339h	E200.7	0.0767	0.100	0.314	
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1339h	E200.7	0.0294	1.00	7.07	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.00153	0.00200	0.00516	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1041h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.000206	0.00200	0.00181	J
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.000754	0.00200	0.000913	J
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1339h	E200.7	0.247	1.00	2.79	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.0000634	0.00200	0.000781	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.0000244	0.00200	0.000152	J
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1339h	E200.7	0.0330	1.00	33.5	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.000438	0.00440	0.00232	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1433h	E200.8	0.00476	0.00500	0.0132	

# - 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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### Report Date: 8/26/2015 Page 7 of 40



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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality
Project:	Gold King Mine - San Juan River Sampling
Lab Sample ID:	1508262-003
<b>Client Sample ID:</b>	San Juan River @ Town of Montezuma (4953990)
<b>Collection Date:</b>	12/30/1899 1404h
<b>D I I D</b> <i>I</i>	
<b>Received Date:</b>	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 1341h	E200.7	0.0237	0.100	0.375	
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.0000366	0.00200	0.000822	J#B
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.0000920	0.00200	0.000912	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.000538	0.00200	0.176	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1341h	E200.7	0.0401	1.00	48.9	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.0000434	0.00400	0.0000898	J
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.000692	0.00200	0.00434	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1341h	E200.7	0.0767	0.100	0.296	
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1341h	E200.7	0.0294	1.00	7.50	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.00153	0.00200	0.00228	
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1048h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.000206	0.00200	0.00164	J
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1341h	E200.7	0.247	1.00	2.84	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.0000634	0.00200	0.000716	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.0000244	0.00200	0.0000343	J
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1341h	E200.7	0.0330	1.00	33.8	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.000438	0.00440	0.00199	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1436h	E200.8	0.00476	0.00500	0.0159	

# - 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).

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

### Report Date: 8/26/2015 Page 8 of 40



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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-004							
<b>Client Sample ID:</b>	San Juan R @ US160 Xing in CO (4954000)							
<b>Collection Date:</b>	8/12/2015 1209h							
<b>Received Date:</b>	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 1343h	E200.7	0.0237	0.100	0.155	
Antimony	7440-36-0	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.0000366	0.00200	0.000548	J#B
Arsenic	7440-38-2	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.0000920	0.00200	0.00121	J
Barium	7440-39-3	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.000538	0.00200	0.151	
Beryllium	7440-41-7	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/14/2015 830h	8/14/2015 1343h	E200.7	0.0401	1.00	47.9	
Chromium	7440-47-3	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.0000434	0.00400	0.0000478	J
Copper	7440-50-8	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.000692	0.00200	0.00261	
Iron	7439-89-6	mg/L	8/14/2015 830h	8/14/2015 1343h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/14/2015 830h	8/14/2015 1343h	E200.7	0.0294	1.00	6.97	
Manganese	7439-96-5	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.00153	0.00200	0.00182	J
Mercury	7439-97-6	mg/L	8/13/2015 1830h	8/14/2015 1050h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.000206	0.00200	0.00148	J
Nickel	7440-02-0	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/14/2015 830h	8/14/2015 1343h	E200.7	0.247	1.00	2.74	
Selenium	7782-49-2	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.0000634	0.00200	0.000728	JB
Silver	7440-22-4	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/14/2015 830h	8/14/2015 1343h	E200.7	0.0330	1.00	27.3	
Thallium	7440-28-0	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.000438	0.00440	0.00287	J
Zinc	7440-66-6	mg/L	8/14/2015 830h	8/14/2015 1439h	E200.8	0.00476	0.00500	0.0165	

# - 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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### Report Date: 8/26/2015 Page 9 of 40



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Jose Rocha

Kyle F. Gross

Laboratory Director

QA Officer

# **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-001							
<b>Client Sample ID:</b>	San Juan R @ Mexican Hat US163 Xing (4953000)							
<b>Collection Date:</b>	8/12/2015 1706h							
<b>Received Date:</b>	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	108	
Bicarbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	108	
Carbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 2134h	E300.0	0.0751	1.00	8.70	В
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	617	В
Hardness (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	601	
Hardness, Dissolved (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	182	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/13/2015 2353h	E353.2	0.00833	0.0100	0.337	
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.20	Н
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1235h	SM4500-P-F	0.0212	0.0500	3.05	@1B
Sulfate	14808-79-8	mg/L		8/13/2015 2134h	E300.0	0.211	7.50	157	
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	5,780	

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

<sup>1</sup> - 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.



Kyle F. Gross Laboratory Director

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Jose Rocha QA Officer

Lenora Sullivan

## **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-002							
<b>Client Sample ID:</b>	San Juan R @ Sand Island (4953250)							
<b>Collection Date:</b>	12/30/1899 1457h							
<b>Received Date:</b>	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	103	
Bicarbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	103	
Carbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 2224h	E300.0	0.0751	1.00	8.72	В
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	541	В
Hardness (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	298	
Hardness, Dissolved (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	146	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/13/2015 2356h	E353.2	0.00833	0.0100	0.316	
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.26	Н
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1237h	SM4500-P-F	0.0212	0.0500	1.05	В
Sulfate	14808-79-8	mg/L		8/13/2015 2224h	E300.0	0.211	7.50	109	
Total Dissolved Solids		mg/L		8/13/2015 2100h	SM2540C	30.6	50.0	410	@
Total Suspended Solids	TSS	mg/L		8/13/2015 1610h	SM2540D	142	150	2,760	

@ - 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.

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



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Jose Rocha QA Officer

Lenora Sullivan

## **INORGANIC ANALYTICAL REPORT**

Utah Division of Water Quality						
Gold King Mine - San Juan River Sampling						
1508262-003						
San Juan River @ Town of Montezuma (4953990)						
12/30/1899 1404h						
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	108	
Bicarbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	108	
Carbonate (as CaCO3)		mg/L		8/14/2015 632h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/13/2015 2241h	E300.0	0.0751	1.00	8.70	В
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	562	В
Hardness (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	409	
Hardness, Dissolved (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	153	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/13/2015 2357h	E353.2	0.00833	0.0100	0.384	
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.24	Н
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1238h	SM4500-P-F	0.0212	0.0500	1.44	В
Sulfate	14808-79-8	mg/L		8/13/2015 2241h	E300.0	0.211	7.50	123	
Total Dissolved Solids		mg/L		8/13/2015 2100h	SM2540C	30.6	50.0	460	
Total Suspended Solids	TSS	mg/L		8/13/2015 1610h	SM2540D	142	150	3,020	

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.



Kyle F. Gross Laboratory Director

Salt Lake City, UT 84119

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**Contact:** 

Lenora Sullivan

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Jose Rocha QA Officer

## **INORGANIC ANALYTICAL REPORT**

Client:	Utah Division of Water Quality							
Project:	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508262-004							
<b>Client Sample ID:</b>	San Juan R @ US160 Xing in CO (4954000)							
<b>Collection Date:</b>	8/12/2015 1209h							
<b>Received Date:</b>	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		8/13/2015 2258h	E300.0	0.0751	1.00	9.64	В
Conductivity		µmhos/cm		8/14/2015 601h	SM2510B	0.436	2.00	521	В
Hardness (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	466	
Hardness, Dissolved (as CaCO3)		mg/L		8/14/2015 1507h	SM2340B	10.0	10.0	148	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/13/2015 2355h	E353.2	0.00833	0.0100	0.307	1
pH @ 25° C		pH Units		8/13/2015 1840h	SM4500-H+B	1.00	1.00	8.22	Н
Phosphate, Total (as P)	7723-14-0	mg/L	8/14/2015 1020h	8/14/2015 1239h	SM4500-P-F	0.0212	0.0500	1.73	В
Sulfate	14808-79-8	mg/L		8/13/2015 2258h	E300.0	0.211	7.50	102	
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	2,260	

<sup>1</sup> - 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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OC SUMMADV DEDODT

## Jose Rocha **QA** Officer

ANALYTICAL L	ABORATORIES												
Client:	Utah Division of Water Quality					<b>Contact:</b>	Lenora Su	ıllivan					
Lab Set ID:	: 1508262					Dept:	ME						
Project:	Gold King Mine - San Juan River Sa	ampling				QC Type	e: LCS						
Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual

	QC SUMMART REFORT	
ality	Contact:	Lenora Sullivan
	Dept:	ME
River Sampling	QC Type:	LCS

Lab Sample ID:         LCS-38557 2007-D18         Date Analyzed:         08/14/2015 3/34h Date Prepared:           Test Code:         2007-D18         Date Prepared:         08/14/2015 3/34h           Alminium         952         ng7L         E2007         0.0237         0.100         1.000         0         95.2         85 - 115           Calcium         9.41         mg1L         E200.7         0.0767         0.100         1.000         0         95.5         85 - 115           Magnesium         9.79         mg1L         E200.7         0.0247         1.00         10.00         0         95.2         85 - 115           Paraschum         9.52         ng7.L         E200.7         0.0247         1.00         10.00         0         95.2         85 - 115           Sodium         9.24         mg1.L         E200.7         0.0237         0.100         10.00         0         95.2         85 - 115           Sodium         9.62         mg1.L         E200.7         0.0237         0.100         1.000         0         95.6         85 - 115           Isoan DD:         Date Prepared:         08/13/2015 2/21h         Test Code:         200.7-W         Date Prepared:         08/13/2015 16/3/21h         Test	Analyte		Result	Units	Method	MDL	Limit	Spiked	Amount	%REC	Limits	Amt	% RPD	RPD Limit	Qual
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Lab Sample ID:	LCS-38557	Date Analyzed:	08/14/20	15 1334h										
Cakium       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       1.000       10.00       0       93.5       85 - 115         Porassim       9.22       mg/L       E200.7       0.247       1.00       10.00       0       97.2       85 - 115         Sodium       9.24       mg/L       E200.7       0.033       1.00       10.00       0       92.4       85 - 115         Sodium       9.24       mg/L       E200.7       0.033       1.00       10.00       0       92.4       85 - 115         Lab Sample Di:       LCS-38535       Date Analyzei       08132015 : E32h         10.00       0       95.6       85 - 115         Aluminum       9.62       mg/L       E200.7       0.0277       0.100       1.000       0       95.6       85 - 115         Iron       9.61       mg/L       E200.7       0.0274       1.00       1.000       0       95.8       85 - 115         Sodium       9.57       mg/L       E200.7       0.0247       1.00       1.000       0       93.1	Test Code:	200.7-DIS	Date Prepared:	08/14/20	15 830h										
Iron       0.935       ng/L       E200.7       0.0767       0.100       1.000       0       93.5       85-115         Magnesium       9.75       ng/L       E200.7       0.0244       1.00       10.00       0       95.2       85-115         Sodium       9.52       ng/L       E200.7       0.0247       1.00       10.00       0       95.2       85-115         Sodium       9.24       ng/L       E200.7       0.033       1.00       10.00       0       95.2       85-115         Lab Sample ID:       LCS-38355       Date Analyse:       8132015 1231+       1.00       10.00       0       95.6       85-115         Aluminum       9.62       ng/L       E200.7       0.0017       1.00       1.000       0       96.6       85-115         Galuim       9.62       ng/L       E200.7       0.0024       1.000       10.00       0       95.6       85-115         Galuim       9.57       ng/L       E200.7       0.0247       1.00       1.000       0       95.7       85-115         Sodium       9.57       ng/L       E200.7       0.0247       1.00       1.000       0       95.7       85-115 <td>Aluminum</td> <td></td> <td>0.952</td> <td>mg/L</td> <td>E200.7</td> <td>0.0237</td> <td>0.100</td> <td>1.000</td> <td>0</td> <td>95.2</td> <td>85 - 115</td> <td></td> <td></td> <td></td> <td></td>	Aluminum		0.952	mg/L	E200.7	0.0237	0.100	1.000	0	95.2	85 - 115				
Magnesium9.79ng/LE200.70.02941.0010.00097.985.115Potassium9.22ng/LE200.70.0301.0010.00092.285.115Sodium9.24ng/LE200.70.0301.0010.00092.685.115Las Sangu SDate Analyeo08/13/2015 / E2011.001.00095.685.115Tes Cole:200.7-W09.56mg/LE200.70.02370.1001.000095.685.115Calcium9.62ng/LE200.70.02370.1001.000095.685.115Ior0.916ng/LE200.70.02471.001.000095.885.115Magnesium9.62ng/LE200.70.02741.001.000095.885.115Magnesium9.58ng/LE200.70.02471.001.000095.885.115Sodium9.57ng/LE200.70.02471.001.000095.885.115Potassium9.58ng/LE200.70.02471.001.000095.885.115Sodium9.57ng/LE200.70.02471.001.000095.885.115Potassium9.58ng/LE200.70.02471.001.000095.785.115Autimony0.0540.02070.02000.020009.0285.115 <td< td=""><td>Calcium</td><td></td><td>9.41</td><td>mg/L</td><td>E200.7</td><td>0.0401</td><td>1.00</td><td>10.00</td><td>0</td><td>94.1</td><td>85 - 115</td><td></td><td></td><td></td><td></td></td<>	Calcium		9.41	mg/L	E200.7	0.0401	1.00	10.00	0	94.1	85 - 115				
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Iron		0.935	mg/L	E200.7	0.0767	0.100	1.000	0	93.5	85 - 115				
Sodium9.24ngLE200.0.03301.0010.0009.2485-115Lab Sample Di Test Code:LCS-38535 2017-WDate Analyzei08/13/2015 - E231-Aluminum0.956mg/LE20070.02370.1001.00009.6285-115Calcium9.62mg/LE20070.02470.1001.00009.6285-115Ion0.916mg/LE20070.02470.1001.00009.6285-115Magnesium9.83mg/LE20070.02441.001.00009.5885-115Potassium9.57mg/LE20070.02471.001.00009.5885-115Sodium9.31mg/LE20070.02471.001.00009.5885-115Sodium9.31mg/LE20070.02471.001.00009.5885-115Sodium9.31mg/LE20070.02470.0000.0009.5185-115AssenicSodia9.31mg/LE20080.00009200.002000.200009.5885-115Assenic0.153mg/LE20080.00009200.002000.200009.5885-115Assenic0.163mg/LE20080.00009200.002000.200009.5885-115Barlum0.184mg/LE20080.0000280.002000.200009.588	Magnesium		9.79	mg/L	E200.7	0.0294	1.00	10.00	0	97.9	85 - 115				
Lab Sample ID:         LCS-38535 200.7-W         Date Analyzed Date Prepared:         08/13/2015 2231h 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         0.0237         0.100         1.000         0         96.2         85 - 115           Calcium         9.62         mg/L         E200.7         0.0294         1.00         1.000         0         96.2         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         0.0330         1.00         10.00         0         95.7         85 - 115           Solium         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         100         10.00         0         76.3         85 - 115         #           Antimony         0.153         mg/L	Potassium		9.52	mg/L	E200.7	0.247	1.00	10.00	0	95.2	85 - 115				
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       0.00767       0.100       10.00       0       96.2       85 - 115         Iron       9.58       mg/L       E200.7       0.0767       0.100       10.00       0       95.8       85 - 115         Potassium       9.58       mg/L       E200.7       0.0274       1.00       10.00       0       95.8       85 - 115         Sodium       9.51       mg/L       E200.7       0.2247       1.00       10.00       0       95.7       85 - 115         Sodium       9.31       mg/L       E200.7       0.330       1.00       10.00       0       95.1       85 - 115         Antimony       Date Prepared       08/14/2015 ¥23+       State       State       State       State       State       State         Antimony       0.040       mg/L       E200.8       0.000026       0.2000       0       10.2       85 - 115         Bariumoy       0.0200       mg/L       E200.8<	Sodium		9.24	mg/L	E200.7	0.0330	1.00	10.00	0	92.4	85 - 115				
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         0.0244         1.00         10.00         0         95.8         85 - 115           Potassium         9.57         mg/L         E200.7         0.0330         1.00         10.00         0         95.8         85 - 115           Sodium         9.31         mg/L         E200.7         0.0330         1.00         10.00         0         95.7         85 - 115           Sodium         9.31         mg/L         E200.7         0.0330         1.00         10.00         0         95.7         85 - 115           Lab Sample D:         LCS-38558         Date Analyzed:         08/14/2015 820h         0.000200         0.2000         0         10.2         85 - 115         #           Arsen	Lab Sample ID:	LCS-38535	Date Analyzed:	08/13/20	15 2231h										
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         Potasium       9.57       mg/L       E200.7       0.247       1.00       10.00       0       95.8       85 - 115         Sodium       9.57       mg/L       E200.7       0.247       1.00       10.00       0       95.8       85 - 115         Sodium       9.57       mg/L       E200.7       0.247       1.00       10.00       0       95.8       85 - 115         LabSample D:       LCS-38558       Date Analyze:       08/14/2015 83/*       2000       0.03030       1.00       10.00       0       95.3       85 - 115         Antimony       0.153       mg/L       E200.8       0.0000208       0.0200       0.2000       0       10.2       85 - 115         Barium       0.184       mg/L       E200.8       0.000208       0.0200       0.2000	Test Code:	200.7-W	Date Prepared:	08/13/20	15 1632h										
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       95.7       85 - 115         Lab Sample D:       LCS-38558       Date Analyze:       08/14/2015 1423h               9.10       85 - 115         #        #        #<	Aluminum		0.956	mg/L	E200.7	0.0237	0.100	1.000	0	95.6	85 - 115				
Magnesium       9.58       ng/L       E200.7       0.0294       1.00       10.00       0       95.8       85 - 115         Potassium       9.57       ng/L       E200.7       0.247       1.00       10.00       0       95.7       85 - 115         Sodium       9.31       ng/L       E200.7       0.030       1.00       10.00       0       95.7       85 - 115         Los sample ID:       LCS-38558       Date Analyzei       08/14/2015 +23h       5       7       5       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6	Calcium		9.62	mg/L	E200.7	0.0401	1.00	10.00	0	96.2	85 - 115				
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Iron		0.916	mg/L	E200.7	0.0767	0.100	1.000	0	91.6	85 - 115				
Sodium         9.31         mg/L         E20.7         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         0.153         mg/L         E200.8         0.0000366         0.00200         0.2000         0         10.2         85 - 115           Barium         0.184         mg/L         E200.8         0.000288         0.00200         0         10.0         85 - 115           Cadmium         0.188         mg/L         E200.8         0.000134         0.00200         0         93.9         85 - 115           Chromium         0.189         mg/L         E200.8         0.000434         0.00400         0.2000         0         94.3         85 - 115           Cobalt         0.184<	Magnesium		9.58	mg/L	E200.7	0.0294	1.00	10.00	0	95.8	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         0.0000386         0.00200         0.2000         0         102         85 - 115           Barium         0.184         mg/L         E200.8         0.00028         0.00200         0.2000         0         91.9         85 - 115           Cadmium         0.188         mg/L         E200.8         0.00028         0.00200         0.2000         0         93.9         85 - 115           Chromium         0.188         mg/L         E200.8         0.000434         0.00400         0.2000         94.3         85 - 115           Cobalt         0.184         mg/L         E200.8         0.000434         0.00400         0.2000         94.3         85 - 115           Cobalt         0.188         mg/L         E200.8         0.000692         0.00200         0.2000         94.2         85 - 115           Copper	Potassium		9.57	mg/L	E200.7	0.247	1.00	10.00	0	95.7	85 - 115				
Test Code:200.8-DISDate Prepared:08/14/2015 830HAntimony0.153mg/LE200.80.00003660.002000.2000076.385 - 115#Arsenic0.204mg/LE200.80.00009200.002000.2000010285 - 115#Barium0.184mg/LE200.80.00002880.002000.2000091.985 - 115#Beryllium0.200mg/LE200.80.00002880.002000.2000093.985 - 115#Cadmium0.188mg/LE200.80.001930.0005000.2000093.985 - 115#Chromium0.189mg/LE200.80.0004340.004000.2000094.385 - 115#Cobalt0.184mg/LE200.80.0006920.002000.2000094.285 - 115#Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115#Lead0.185mg/LE200.80.0002640.002000.2000092.385 - 115#Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Sodium		9.31	mg/L	E200.7	0.0330	1.00	10.00	0	93.1	85 - 115				
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       0.000288       0.0200       0       100       85 - 115         Cadmium       0.188       mg/L       E200.8       0.000193       0.00200       0       93.9       85 - 115         Chromium       0.189       mg/L       E200.8       0.00154       0.2000       0       94.3       85 - 115         Cobalt       0.184       mg/L       E200.8       0.000434       0.2000       0       94.3       85 - 115         Cobalt       0.188       mg/L       E200.8       0.000692       0.0200       0       94.3       85 - 115         Lead       0.185       mg/L       E200.8       0.00200       0.2000       0       94.2       85 - 115         Mangane	Lab Sample ID:	LCS-38558	Date Analyzed:	08/14/20	15 1423h										
Arsenic0.204mg/LE200.80.00009200.002000.2000010285 - 115Barium0.184mg/LE200.80.0005380.002000.2000091.985 - 115Beryllium0.200mg/LE200.80.0002880.002000.2000010085 - 115Cadmium0.188mg/LE200.80.0001930.0005000.2000093.985 - 115Chromium0.189mg/LE200.80.001540.002000.2000094.385 - 115Cobalt0.184mg/LE200.80.0004340.004000.2000092.185 - 115Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115Lead0.185mg/LE200.80.0002640.002000.2000092.385 - 115Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Test Code:	200.8-DIS	Date Prepared:	08/14/20	15 830h										
Barium0.184mg/LE200.80.0005380.002000.2000091.985 - 115Beryllium0.200mg/LE200.80.00002880.002000.2000010085 - 115Cadmium0.188mg/LE200.80.001930.0005000.2000093.985 - 115Chromium0.189mg/LE200.80.001540.002000.2000094.385 - 115Cobalt0.184mg/LE200.80.0004340.004000.2000092.185 - 115Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115Lead0.185mg/LE200.80.0002640.002000.2000092.385 - 115Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Antimony		0.153	mg/L	E200.8	0.0000366	0.00200	0.2000	0	76.3	85 - 115				#
Beryllium0.200mg/LE200.80.00002880.002000.2000010085 - 115Cadmium0.188mg/LE200.80.0001930.0005000.2000093.985 - 115Chromium0.189mg/LE200.80.001540.002000.2000094.385 - 115Cobalt0.184mg/LE200.80.0004340.004000.2000092.185 - 115Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115Lead0.185mg/LE200.80.002640.002000.2000092.385 - 115Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Arsenic		0.204	mg/L	E200.8	0.0000920	0.00200	0.2000	0	102	85 - 115				
Cadmium0.188mg/LE200.80.0001930.0005000.2000093.985 - 115Chromium0.189mg/LE200.80.001540.002000.2000094.385 - 115Cobalt0.184mg/LE200.80.00004340.004000.2000092.185 - 115Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115Lead0.185mg/LE200.80.002640.002000.2000092.385 - 115Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Barium		0.184	mg/L	E200.8	0.000538	0.00200	0.2000	0	91.9	85 - 115				
Chromium0.189mg/LE200.80.001540.002000.2000094.385 - 115Cobalt0.184mg/LE200.80.00004340.004000.2000092.185 - 115Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115Lead0.185mg/LE200.80.0002640.002000.2000092.385 - 115Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Beryllium		0.200	mg/L	E200.8	0.0000288	0.00200	0.2000	0	100	85 - 115				
Cobalt0.184mg/LE200.80.00004340.004000.2000092.185 - 115Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115Lead0.185mg/LE200.80.0002640.002000.2000092.385 - 115Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Cadmium		0.188	mg/L	E200.8	0.000193	0.000500	0.2000	0	93.9	85 - 115				
Copper0.188mg/LE200.80.0006920.002000.2000094.285 - 115Lead0.185mg/LE200.80.0002640.002000.2000092.385 - 115Manganese0.187mg/LE200.80.001530.002000.2000093.685 - 115	Chromium		0.189	mg/L	E200.8	0.00154	0.00200	0.2000	0	94.3	85 - 115				
Induction       Description       Description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<>	Cobalt		0.184	mg/L	E200.8	0.0000434	0.00400	0.2000	0	92.1	85 - 115				
Manganese         0.187         mg/L         E200.8         0.00153         0.00200         0.2000         0         93.6         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				
Molybdenum 0.184 mg/L E200.8 0.000206 0.00200 0.2000 0 92.2 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				

Report Date: 8/14/2015 Page 14 of 40



Zinc

Test Code:

Arsenic

Barium

Beryllium

Cadmium

Chromium

Manganese

Molybdenum

Cobalt

Copper

Lead

Nickel

Silver

Zinc

Selenium

Thallium

Vanadium

Test Code:

Antimony

Lab Sample ID: LCS-38575

200.8-W

Lab Sample ID: LCS-38536

200.8-W

0.978

0.213

0.196

0.213

0.198

0.199

0.195

0.197

0.196

0.199

0.199

0.194

0.214

0.193

0.189

0.199

1.05

Date Analyzed:

Date Prepared:

0.175

Date Analyzed:

Date Prepared:

mg/L

08/14/2015 1942h

08/14/2015 1431h

08/13/2015 2214h

08/13/2015 1632h

E200.8

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OC SUMMARY REPORT

## Jose Rocha QA Officer

ANALYTICAL LA	BORATORIES													
Client:	Utah Division of Wa	ater Quality					<b>Contact:</b>	Lenora Su	ullivan					
Lab Set ID:	1508262						Dept:	ME						
Project:	Gold King Mine - S	an Juan River Sampli	ng				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 II	D: LCS-38558	Date Analyzed:	08/14/20	15 1423h										
Test Code:	200.8-DIS	Date Prepared:	08/14/20	15 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				

0.00500

0.00200

0.00200

0.00200

0.000500

0.00200

0.00400

0.00200

0.00200

0.00200

0.00200

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0.00200

0.00200

0.00200

0.00440

0.00500

0.00200

1.000

0.2000

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0

0

97.8

106

98.0

106

99.1

99.5

97.3

98.7

98.0

99.3

99.4

97.2

107

96.3

99.5

105

87.4

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

85 - 115

0.00476

0.0000920

0.000538

0.0000288

0.000193

0.00154

0.0000434

0.000692

0.000264

0.00153

0.000206

0.000754

0.0000634

0.0000244

0.0000242

0.000438

0.00476

0.0000366

### Report Date: 8/14/2015 Page 15 of 40 s report is provided for the exclusive use of the addressee. Privileges of subsequent use of

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0 94.7 85 - 115



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**QC SUMMARY REPORT** 

Kyle F. Gross Laboratory Director

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Jose Rocha QA Officer

### **Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan Lab Set ID: 1508262 Dept: ME QC Type: LCS Gold King Mine - San Juan River Sampling **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount Method MDL %REC % RPD Result Units Limit Spiked Limits Limit Qual Analyte Amount Amt Lab Sample ID: LCS-38547 08/14/2015 945h Date Analyzed: Test Code: HG-DW-245.1 Date Prepared: 08/13/2015 1830h 0.00338 0.00000892 0.000150 0.003330 0 102 85 - 115 E245.1 Mercury mg/L Lab Sample ID: LCS-38546 08/14/2015 1019h Date Analyzed: HG-DW-DIS-245.1 Test Code: Date Prepared: 08/13/2015 1830h 0 0.00333 0.00000892 0.000150 0.003330 99.9 85 - 115 Mercury mg/L E245.1

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

Report Date: 8/14/2015 Page 16 of 40



Potassium

< 1.00

mg/L

E200.7

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Jose Rocha QA Officer

# QC SUMMARY REPORT

Lab Set ID:		'ater Quality San Juan River Sampl	ing				Contact Dept: QC Typ	: Lenora S ME e: MBLK	ullivan					
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qua
Lab Sample II Test Code:	<b>MB-38557</b> 200.7-DIS	Date Analyzed: Date Prepared:	08/14/20 08/14/20	15 1332h 15 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

0.247

Sodium	< 1.00	mg/L	E200.7	0.0330	1.00	U
Lab Sample ID:         MB-38535           Test Code:         200.7-W	Date Analyzed: Date Prepared:					
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

1.00

Lab Sample ID:	MB-38558	Date Analyzed:	08/14/20	015 1420h		
Test Code:	200.8-DIS	Date Prepared:	08/14/20	015 830h		
Antimony		0.000253	mg/L	E200.8	0.0000366	0.00200
Arsenic		< 0.00200	mg/L	E200.8	0.0000920	0.00200
Barium		< 0.00200	mg/L	E200.8	0.000538	0.00200
Beryllium		< 0.00200	mg/L	E200.8	0.0000288	0.00200
Cadmium		< 0.000500	mg/L	E200.8	0.000193	0.000500
Chromium		< 0.00200	mg/L	E200.8	0.00154	0.00200
Cobalt		< 0.00400	mg/L	E200.8	0.0000434	0.00400
Copper		< 0.00200	mg/L	E200.8	0.000692	0.00200
Lead		< 0.00200	mg/L	E200.8	0.000264	0.00200
Manganese		< 0.00200	mg/L	E200.8	0.00153	0.00200
Molybdenum		< 0.00200	mg/L	E200.8	0.000206	0.00200

Report Date: 8/14/2015 Page 17 of 40



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## Jose Rocha QA Officer

# American West ANALYTICAL LABORATORIES QC SUMMARY REPORT Client: Utah Division of Water Quality Contact: Lenora Sullivan Lab Set ID: 1508262 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-38558	Date Analyzed:	08/14/201	5 1420h										
Test Code:	200.8-DIS	Date Prepared:	08/14/201	5 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:	08/13/201	5 2211h										
Test Code:	200.8-W	Date Prepared:	08/13/201	5 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:	08/14/201	5 1939h										
Test Code:	200.8-W	Date Prepared:	08/14/201	5 1431h										
Antimony		< 0.00200	mg/L	E200.8	0.0000366	0.00200								U

Report Date: 8/14/2015 Page 18 of 40

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the addressee of the addressee are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.



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Kyle F. Gross Laboratory Director

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Jose Rocha QA Officer

### **QC SUMMARY REPORT Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan Lab Set ID: 1508262 Dept: ME QC Type: MBLK Gold King Mine - San Juan River Sampling **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount Method MDL %REC % RPD Result Units Limit Spiked Limits Limit Qual Analyte Amount Amt 08/14/2015 943h Lab Sample ID: MB-38547 Date Analyzed: Test Code: HG-DW-245.1 Date Prepared: 08/13/2015 1830h < 0.000150 0.00000892 0.000150 U E245.1 Mercury mg/L 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</td>
 mg/L
 E245.1
 0.0000892
 0.000150

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.

Report Date: 8/14/2015 Page 19 of 40



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**OC SUMMARY REPORT** 

### Jose Rocha QA Officer

ANALYTICAL L	LABORATORIES													
Client:	Utah Division of Water	Quality					Contact	: Lenora Su	ıllivan					
Lab Set ID	: 1508262						Dept:	ME						
Project:	Gold King Mine - San J	uan River San	npling				QC Type	e: MS						
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qua

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:	08/14/20	15 1349h										
Test Code:	200.7-DIS	Date Prepared:	08/14/201	15 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:	08/14/20	15 1409h										
Test Code:	200.7-DIS	Date Prepared:	08/14/201	15 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:	08/14/20	15 1429h										
Test Code:	200.7-DIS	Date Prepared:	08/14/201	15 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:	08/13/20	15 2240h										
Test Code:	200.7-W	Date Prepared:	08/13/201	15 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:	08/13/20	15 2302h										
Test Code:	200.7-W	Date Prepared:	08/13/201	15 1632h										
Calcium		114	mg/L	E200.7	0.401	10.0	10.00	109	46.1	70 - 130				2

Report Date: 8/14/2015 Page 20 of 40



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**OC SUMMARY REPORT** 

### Jose Rocha QA Officer

ANALYTICAL LABC	RATORIES			- <del>x</del> -										
Client: U	tah Division of Wate	r Quality					Contact:	Lenora Su	ıllivan					
Lab Set ID: 1	508262						Dept:	ME						
Project: G	old King Mine - San	Juan River Sampl	ing				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: Test Code:	<b>1508262-001BMS</b> 200.7-W	Date Analyzed: Date Prepared:	08/13/20 08/13/20											
Iron Magnesium Potassium Sodium		39.2 43.4 20.3 53.3	mg/L mg/L mg/L mg/L	E200.7 E200.7 E200.7 E200.7	0.0767 0.0294 0.247 0.0330	0.100 1.00 1.00 1.00	1.000 10.00 10.00 10.00	37.5 33.3 10.7 44.4	163 101 95.3 89.3	70 - 130 70 - 130 70 - 130 70 - 130				2
Lab Sample ID: Test Code:	<b>1508263-002BMS</b> 200.7-W	Date Analyzed: Date Prepared:	08/13/201 08/13/201											
Aluminum Iron Magnesium Potassium Sodium		49.8 36.3 31.6 17.9 47.7	mg/L mg/L mg/L mg/L mg/L	E200.7 E200.7 E200.7 E200.7 E200.7	0.0237 0.0767 0.0294 0.247 0.0330	0.100 0.100 1.00 1.00 1.00	1.000 1.000 10.00 10.00 10.00	45.4 34.6 21.9 8.43 38.4	444 162 97.1 95.1 93.2	70 - 130 70 - 130 70 - 130 70 - 130 70 - 130				2 2
Lab Sample ID: Test Code:	1508262-004CMS 200.8-DIS	Date Analyzed: Date Prepared:	08/14/20 08/14/20											
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Molybdenum Nickel		0.158 0.202 0.333 0.202 0.186 0.187 0.184 0.190 0.184 0.189 0.188 0.183	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.000692 0.000264 0.00153 0.000206 0.000754	0.00200 0.00200 0.00200 0.000500 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000548 0.00121 0.151 0 0 0.0000478 0.000261 0 0.000182 0.00148 0 0 0.00148	78.6 100 90.9 101 92.9 93.6 92.0 93.7 92.2 93.8 93.4 91.7	75 - 125 $75 - 125$				
Selenium Silver		0.199 0.183	mg/L mg/L	E200.8 E200.8	0.0000634 0.0000244	0.00200 0.00200	0.2000 0.2000	0.000728 0	99.2 91.3	75 - 125 75 - 125				

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## Jose Rocha QA Officer

American	Contact: Lenora Sullivan													
Lab Set ID: 15		- •	ing				Contact: Dept: QC Type:	ME	ıllivan					
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	<b>1508262-004CMS</b> 200.8-DIS	Date Analyzed: Date Prepared:	08/14/201 08/14/201											
Thallium Vanadium Zinc		0.182 0.191 0.996	mg/L mg/L mg/L	E200.8 E200.8 E200.8	0.0000242 0.000438 0.00476	0.00200 0.00440 0.00500	0.2000 0.2000 1.000	0 0.00287 0.0165	90.8 94.2 98.0	75 - 125 75 - 125 75 - 125				
Lab Sample ID: Test Code:	<b>1508263-004CMS</b> 200.8-DIS	Date Analyzed: Date Prepared:	08/14/201 08/14/201											
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Molybdenum Nickel Selenium Silver Thallium		0.158 0.202 0.355 0.200 0.185 0.187 0.183 0.190 0.181 0.190 0.186 0.183 0.201 0.182 0.178	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.000692 0.000264 0.00153 0.000206 0.000754 0.0000634 0.0000244 0.0000242	0.00200 0.00200 0.00200 0.000500 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000586 0.000879 0.178 0 0 0 0.0000614 0.00239 0 0 0.000147 0 0.000782 0.0000252 0	78.6 100 88.8 100 92.4 93.3 91.3 93.8 90.7 94.9 92.0 91.4 99.9 91.1 89.1	75 - 125 $75 - 125$				
Vanadium Zinc Lab Sample ID:	1508262-001BMS	0.190 0.997 Date Analyzed:	mg/L mg/L 08/13/201	E200.8 E200.8 5 2241h	0.000438 0.00476	0.00440 0.00500	0.2000 1.000	0.0019 0.0148	94.1 98.3	75 - 125 75 - 125				
Test Code: Arsenic Barium Beryllium	200.8-W	Date Prepared: 0.194 1.53 0.208	08/13/201 mg/L mg/L mg/L	5 1632h E200.8 E200.8 E200.8	0.0000920 0.000538 0.0000288	0.00200 0.00200 0.00200	0.2000 0.2000 0.2000	0.0175 1.35 0.00677	88.2 87.4 101	75 - 125 75 - 125 75 - 125				

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## Jose Rocha QA Officer

NALYTICAL LAB	ORATORIES			<u>v</u>	SUMME	ANINC								
Client: U	Jtah Division of Wate	r Quality					<b>Contact:</b>	Lenora S	ullivan					
Lab Set ID: 1	508262						Dept:	ME						
Project: (	Gold King Mine - San	Juan River Sampl	ing				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: Test Code:	<b>1508262-001BMS</b> 200.8-W	Date Analyzed: Date Prepared:	08/13/20 08/13/20											
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: Test Code:	<b>1508263-002BMS</b> 200.8-W	Date Analyzed: Date Prepared:	08/13/20 08/13/20											

Test Code:	200.8-W	Date Prepared:	08/13/20	15 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
Molybdenum		0.119	mg/L	E200.8	0.000206	0.00200	0.2000	0.000344	59.2	75 - 125
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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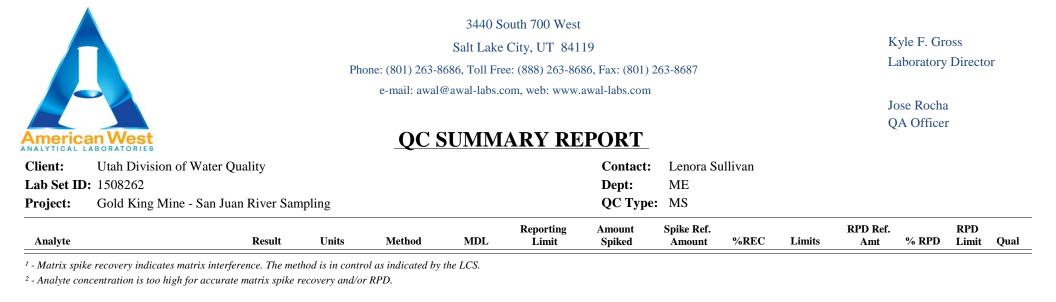
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## Jose Rocha QA Officer

### **QC SUMMARY REPORT** Utah Division of Water Quality **Client:** Lenora Sullivan **Contact:** Lab Set ID: 1508262 Dept: ME QC Type: MS **Project:** Gold King Mine - San Juan River Sampling Reporting Spike Ref. **RPD Ref.** RPD Amount

Lab Sample ID:         1508263-002BMS 200.8-W         Date Analyzed:         08/13/2015 1632h           Vanadium	Analyte	Result	Units	Method	MDL	Limit	Spiked	Amount	%REC	Limits	Amt	% RPD	Limit	Qual
Zinc       1.17       ng/L       E20.8       0.00476       0.00500       1.000       0.176       9.1       75 - 125         Lab Sample ID:       50826-001BMS 20.8-W       Date Analyzei       08/13/2015 I-52h       Second       0.0076       0.0100       0.2000       2.17       6.8.8       75 - 125         Maganee       2.30       mg/L       E20.8       0.0076       0.0100       0.2000       2.17       6.8.8       75 - 125         Lab Sample ID:       50826-001BMS 20.8-W       Date Analyzei       08/14/2015 1/53h       Second       0.00076       6.14       75 - 125         Antimony       0.0131       mg/L       E20.8       0.000366       0.0200       0.2000       0.00075       6.14       75 - 125         Lab Sample ID:       50826-002BMS Date Preparei       Date Analyzei       0.0121 U-131H       Second       0.00076       0.2000       0.00075       6.14       75 - 125         Lab Sample ID:       50826-002BMS Date Preparei       Date Analyzei       80/14/2015 U-3H       Second       0.000700       0.000700       0.000700       0.000700       0.00070       0.10       80 - 120         Eas Code:       BioSe2-002BMS 	-	,												
Test Code:       200.8-W       Date Prepared:       08/13/015 - 153-         Maganese       2.30       mg/L       E200.8       0.0076       0.100       0.2000       2.17       68.8       75 - 125         Lab Sample ID:       508262-001BMS       Date Analyze:       08/14/015 + 31-1       Vert Code:       0.2000       0.00075       6.14       75 - 125         Animony       0.013       mg/L       E20.8       0.000366       0.0200       0.2000       0.00075       6.14       75 - 125         Lab Sample ID:       508263-002BMS       Date Analyze:       0.010105       E20.8       0.000366       0.0200       0.2000       0.00075       6.14       75 - 125         Lab Sample ID:       508263-002BMS       Date Analyze:       0.0113       E20.8       0.000366       0.0200       0.2000       0.00020       10.2       75 - 125         Lab Sample ID:       508263-002BMS       Date Analyze:       60.01201       1.20       60.00201       0.000330       0.000783       11       80 - 120         Mercury       0.0207       Mg/L       E245.1       0.0000802       0.00150       0.00330       0.000783       11       80 - 120         Mercury       0.0374       Date Analyzei       0.0			•											
Lab Sample ID:         1508262-001BMS 200.8-W         Date Prepared:         08/14/2015 1451h           Antimony         0.0131         mg/L         E200.8         0.000036         0.0020         0.2000         0.00075         6.14         75 - 125           Lab Sample ID:         1508263-002BMS 200.8-W         Date Analyzed:         08/14/2015 1431h	-													
Test Code:       200.8-W       Date Prepared:       08/14/2015 1431h         Antimony       0.0131       mg/L       E200.8       0.000366       0.0200       0.2000       0.00075       6.14       75 - 125         Lab Sample Di Set Code:       158263-002BMS 200.8-W       Date Analyzei Date Prepared:       08/14/2015 1431h	Manganese	2.30	mg/L	E200.8	0.00764	0.0100	0.2000	2.17	68.8	75 - 125				2
Lab Sample ID:         1508263-002BMS Date Analyzed:         OB(1/4/2015 1/431h           Antimony         Date Prepared:         08/14/2015 1/431h           Antimony         0.0206         mg/L         E200.8         0.0000366         0.00200         0.2000         0.00202         10.2         75 - 125           Lab Sample ID:         1508263-003BMS Date Analyzed:         08/14/2015 1008h         E	-													
Test Code:       200.8-W       Date Prepared:       0.8/14/2015 1431h         Antimony       0.0206       mg/L       E200.8       0.000366       0.0200       0.2000       0.000202       10.2       75 - 125         Lab Sample ID:       1508263-003BMS HG-DW-245.1       Date Analyzei       08/14/2015 1008h       588         Mercury       0.00379       mg/L       E245.1       0.0000892       0.00150       0.00330       0.000783       11       80 - 120         Lab Sample ID:       1508262-002BMS HG-DW-245.1       Date Analyzei       08/14/2015 92-1       580h       580h         Mercury       0.00374       mg/L       E245.1       0.0000892       0.000150       0.00330       0.00008       110       80 - 120         Mercury       0.00374       mg/L       E245.1       0.0000892       0.00150       0.00330       0.00008       110       80 - 120         Mercury       0.00374       mg/L       E245.1       0.0000892       0.00150       0.00330       0.00008       110       80 - 120         Lab Sample ID:       1508262-002CMS HG-DW-DIS-245.1       Date Analyzei       08/14/2015 1433h       0.0000892       0.00150       0.00330       0       105       85 - 115         Mercury	Antimony	0.0131	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000775	6.14	75 - 125				1
Lab Sample ID:       1508263-003BMS       Date Analyzed:       08/14/2015 1/830/h         Test Code:       HG-DW-245.1       Date Prepared:       08/13/2015 1/830/h         Mercury       0.00379       mg/L       E245.1       0.0000892       0.00150       0.00330       0.0000783       111       80 - 120         Lab Sample ID:       1508262-002BMS       Date Analyzed:       08/14/2015 952/              Mercury       0.00374       Date Analyzed:       08/14/2015 1/830/h	-	5												
Test Code:       HG-DW-245.1       Date Prepared:       08/13/2015 1830h         Mercury       0.00379       mg/L       E245.1       0.0000892       0.00150       0.003330       0.000783       111       80 - 120         Lab Sample ID:       1508262-002BMS       Date Analyzed:       08/14/2015 952h $= = = = = = = = = = = = = = = = = = = $	Antimony	0.0206	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000202	10.2	75 - 125				1
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       0.0000892       0.000150       0.003330       0.00008       110       80 - 120         Lab Sample ID:       1508262-002CMS       Date Analyzed:       08/14/2015 1043h       E245.1       0.0000892       0.000150       0.003330       0.00008       110       80 - 120         Mercury       0.00348       mg/L       E245.1       0.0000892       0.000150       0.003330       0.00008       100       80 - 120         Mercury       0.00348       mg/L       E245.1       0.0000892       0.000150       0.003330       0       105       85 - 115         Mercury       0.00348       mg/L       E245.1       0.0000892       0.000150       0.003330       0       105       85 - 115         Lab Sample ID:       1508263-003CMS       Date Analyzed:       08/14/2015 1057h       EXECUTE	•	,												
Test Code:       HG-DW-245.1       Date Prepared: $08/13/2015 + 330h$ Mercury       0.00374       mg/L       E245.1       0.0000892       0.00150       0.003330       0.00008       110       80 - 120         Lab Sample ID:       1508262-002CMS       Date Analyzed: $08/14/2015 + 330h$ V       V	Mercury	0.00379	mg/L	E245.1	0.00000892	0.000150	0.003330	0.0000783	111	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       0.0000892       0.000150       0.003330       0       105       85 - 115         Lab Sample ID:       1508263-003CMS       Date Analyzed:       08/14/2015 1057h       EXAMPLE       EXAMPLE	•													
Test Code:       HG-DW-DIS-245.1       Date Prepared:       08/13/2015 1830h         Mercury       0.00348       mg/L       E245.1       0.0000892       0.00150       0.003330       0       105       85 - 115         Lab Sample ID:       1508263-003CMS       Date Analyzed:       08/14/2015 1057h       EVANO       EVAN	Mercury	0.00374	mg/L	E245.1	0.00000892	0.000150	0.003330	0.00008	110	80 - 120				
Lab Sample ID:         1508263-003CMS         Date Analyzed:         08/14/2015 1057h           Test Code:         HG-DW-DIS-245.1         Date Prepared:         08/13/2015 1830h	•													
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				
Mercury 0.00372 mg/L E245.1 0.0000892 0.000150 0.003330 0 112 85 - 115	•													
	Mercury	0.00372	mg/L	E245.1	0.00000892	0.000150	0.003330	0	112	85 - 115				

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**OC SUMMARY REPORT** 

## Jose Rocha QA Officer

ANALYTICAL	ABORATORIES		<u> </u>									
Client:	Utah Division of Water Quality					Contact	: Lenora S	ullivan				
Lab Set ID	: 1508262					Dept:	ME					
Project:	Gold King Mine - San Juan River San	npling				QC Тур	e: MSD					
Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref.	%REC	Limits	RPD Ref.	% RPD	RPD Limit

Analyte		Result	Units	Method	MDL	Limit	Spiked	Amount	%REC	Limits	Amt	% RPD	Limit	Qual
Lab Sample ID:	1508262-004CMSD	Date Analyzed:	08/14/201	15 1351h										
Test Code:	200.7-DIS	Date Prepared:	08/14/201	5 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:	08/14/201	15 1411h										
Test Code:	200.7-DIS	Date Prepared:	08/14/201	5 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:	08/14/201	15 1431h										
Test Code:	200.7-DIS	Date Prepared:	08/14/201	5 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:	08/13/201	15 2242h										
Test Code:	200.7-W	Date Prepared:	08/13/201	5 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:	08/13/201	15 2304h										
Test Code:	200.7-W	Date Prepared:	08/13/201	15 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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Kyle F. Gross Laboratory Director

> RPD Limit Qual

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### Jose Rocha **QA** Officer

INALYTICAL LABORATORIES											
Client: Utah Division of Wat	er Quality					<b>Contact:</b>	Lenora Su	ullivan			
Lab Set ID: 1508262						Dept:	ME				
<b>Project:</b> Gold King Mine - Sa	n Juan River Sampl	ing				QC Type:	MSD				
Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD
Lab Sample ID: 1508262-001BMSD	Date Analyzed:	08/13/20	15 2315h								
Test Code: 200.7-W	Date Prepared:	08/13/20	15 1632h								
Iron	39.4	mg/L	E200.7	0.0767	0.100	1.000	37.5	185	70 - 130	39.2	0.559
Magnesium	43.8	mg/L	E200.7	0.0294	1.00	10.00	33.3	105	70 - 130	43.4	0.988
Potassium	20.4	mg/L	E200.7	0.247	1.00	10.00	10.7	96.8	70 - 130	20.3	0.699
Sodium	54.4	mg/L	E200.7	0.0330	1.00	10.00	44.4	100	70 - 130	53.3	2.06
Lab Sample ID: 1508263-002BMSD	Date Analyzed:	08/13/20	15 2337h								

Lab Sample ID. 1506205-002DMSD	Date Analyzeu.	08/13/2013 2	.55711										
Test Code: 200.7-W	Date Prepared:	08/13/2015 1	632h										
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	2-004CMSD Date Analyzed:	08/14/201	5 1509h									
Test Code: 200.8-D	IS Date Prepared:	08/14/201	5 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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All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

# **OC SUMMARY REPORT**



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Jose Rocha QA Officer

# QC SUMMARY REPORT Contact: Lenora

Lab Set ID: 1	tah Division of Water 508262 old King Mine - San J	•	ing				Contact: Dept: QC Type	Lenora Su ME : MSD	ıllivan					
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	1508262-004CMSD 200.8-DIS	Date Analyzed: Date Prepared:	08/14/201 08/14/201											
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: Test Code:	1508263-004CMSD 200.8-DIS	Date Analyzed: Date Prepared:	08/14/201 08/14/201											
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: Test Code:	<b>1508262-001BMSD</b> 200.8-W	Date Analyzed: Date Prepared:	08/13/201 08/13/201											
	200.0- ₩	1			0.000000	0.00200	0.0000	0.0175	06.6	75 105	0.101	0.510	20	
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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## Jose Rocha QA Officer

## **QC SUMMARY REPORT**

	Itah Division of Water	Quality					Contact:	Lenora Su	ullivan					
Lab Set ID: 1	508262						Dept:	ME						
Project: C	old King Mine - San J	uan River Sampl	ing				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: Test Code:	<b>1508262-001BMSD</b> 200.8-W	Date Analyzed: Date Prepared:	08/13/20 08/13/20											
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:	08/13/20	15 2317h										
Test Code:	200.8-W	Date Prepared:	08/13/201	15 1632h										

Test Code: 200.8-W	Date Prepared:	08/13/201	5 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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Mercury

0.00372

mg/L

E245.1

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Jose Rocha QA Officer

## **QC SUMMARY REPORT**

Lab Set ID: 1:	tah Division of Water 508262 old King Mine - San J		ing				Contact: Dept: QC Type	Lenora S ME : MSD	ullivan					
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qua
Lab Sample ID: Test Code:	<b>1508263-002BMSD</b> 200.8-W	Date Analyzed: Date Prepared:	08/13/201 08/13/201											
Vanadium Zinc		0.239 1.19	mg/L mg/L	E200.8 E200.8	0.000438 0.00476	0.00440 0.00500	0.2000 1.000	0.0514 0.176	93.9 101	75 - 125 75 - 125	0.238 1.17	0.490 1.76	20 20	
Lab Sample ID: Test Code:	<b>1508262-001BMSD</b> 200.8-W	Date Analyzed: Date Prepared:	08/13/201 08/13/201											
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: Test Code: Antimony	<b>1508262-001BMSD</b> 200.8-W	Date Analyzed: Date Prepared: 0.0145	08/14/201 08/14/201 mg/L		0.0000366	0.00200	0.2000	0.000775	6.87	75 - 125	0.0131	10.6	20	1
Lab Sample ID: Test Code:	<b>1508263-002BMSD</b> 200.8-W	Date Analyzed: Date Prepared:	08/14/201 08/14/201	5 2032h		0.00200	012000	01000772		10 120		1010		
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: Test Code: Mercury	<b>1508263-003BMSD</b> HG-DW-245.1	Date Analyzed: Date Prepared: 0.00365	08/14/201 08/13/201 mg/L		0.00000892	0.000150	0.003330	0.0000783	107	80 - 120	0.00379	3.85	20	
Lab Sample ID:	1508262-002BMSD	Date Analyzed: Date Prepared:	08/14/201											

Lab Sample ID: 1508262-002CMSD Date Analyzed: 08/14/2015 1045h Test Code: HG-DW-DIS-245.1 Date Prepared: 08/13/2015 1830h 0.00373 0.00000892 0.000150 0.003330 0 85 - 115 0.00348 7.02 20 Mercury mg/L E245.1 112 Lab Sample ID: 1508263-003CMSD 08/14/2015 1059h Date Analyzed: Test Code: HG-DW-DIS-245.1 08/13/2015 1830h Date Prepared: 0.00351 0.00000892 0.000150 0.003330 0 105 85 - 115 0.00372 5.72 20 Mercury mg/L E245.1

0.000150

0.00000892

0.003330

0.00008

109

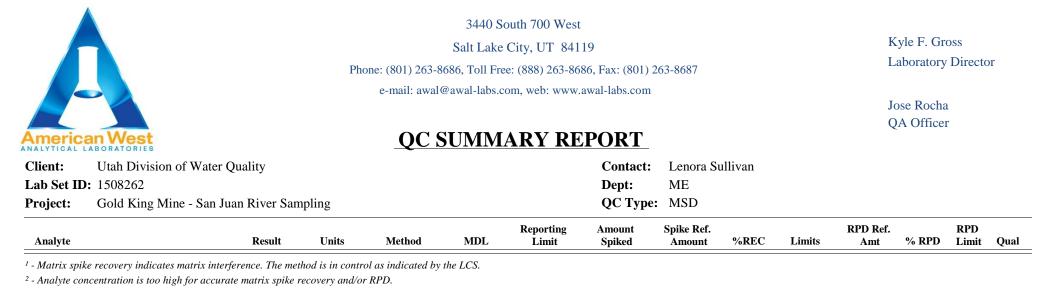
80 - 120

0.00374

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0.760

20





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Jose Rocha QA Officer

### **QC SUMMARY REPORT Contact:** Lenora Sullivan **Client:** Utah Division of Water Quality Lab Set ID: 1508262 Dept: WC QC Type: DUP Gold King Mine - San Juan River Sampling **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount Method MDL %REC % RPD Result Units Limit Spiked Limits Limit Qual Analyte Amount Amt Lab Sample ID: 1508262-001ADUP Date Analyzed: 08/14/2015 601h Test Code: COND-W-2510B 620 SM2510B 0.436 2.00 617 0.485 5 Conductivity µmhos/cm Lab Sample ID: 1508263-001ADUP Date Analyzed: 08/14/2015 601h COND-W-2510B Test Code: 2.00 5 651 SM2510B 0.436 648 0.462 Conductivity µmhos/cm Lab Sample ID: 1508275-001ADUP Date Analyzed: 08/14/2015 601h Test Code: COND-W-2510B 632 634 5 Conductivity SM2510B 0.436 2.00 0.316 µmhos/cm

Lab Sample ID:         1508262-004ADUP           Test Code:         PH-4500H+B	Date Analyzed:	08/13/201	15 1840h							
pH @ 25° C	8.24	pH Units	SM4500-H+B	1.00	1.00		8.22	0.243	5	Н
Lab Sample ID:         1508263-004ADUP           Test Code:         PH-4500H+B	Date Analyzed:	08/13/201	15 1840h							
pH @ 25° C	8.18	pH Units	SM4500-H+B	1.00	1.00		8.2	0.244	5	Н
Lab Sample ID:         1508262-002ADUP           Test Code:         TDS-W-2540C	Date Analyzed:	08/13/201	15 2100h							
Total Dissolved Solids	470	mg/L	SM2540C	30.6	50.0		410	13.6	5	@
Lab Sample ID:         1508263-002ADUP           Test Code:         TDS-W-2540C	Date Analyzed:	08/13/201	15 2100h							
Total Dissolved Solids	360	mg/L	SM2540C	30.6	50.0		450	22.2	5	@
Lab Sample ID:1508262-002ADUPTest Code:TSS-W-2540D	Date Analyzed:	08/13/201	15 1610h							
Total Suspended Solids	2,640	mg/L	SM2540D	142	150		2760	4.44	5	

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Jose Rocha QA Officer

## **QC SUMMARY REPORT**

Lab Set ID:	Utah Division of Water 1508262 Gold King Mine - San		ing				Contact: Dept: QC Type	WC	ıllivan					
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID Test Code:	<b>1508263-002ADUP</b> TSS-W-2540D	Date Analyzed:	08/13/201	5 1610h										
Total Suspende	ed 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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## Jose Rocha QA Officer

### **QC SUMMARY REPORT** Lenora Sullivan **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1508262 Dept: WC QC Type: LCS Gold King Mine - San Juan River Sampling **Project:** Reporting Amount Spike Ref. **RPD Ref.** RPD Result Units Method MDL %REC % RPD Limit Qual Limit Spiked Limits Analyte Amount Amt

Lab Sample ID: Test Code:	<b>LCS-R81617</b> 300.0-W	Date Analyzed:	08/13/20	15 1229h						
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: Test Code:	LCS-R81615 ALK-W-2320B	Date Analyzed:	08/14/20	15 632h						
Alkalinity (as Ca	CO3)	49,000	mg/L	SM2320B	1.86	10.0	50,000	0	98.0	90 - 110
Lab Sample ID: Test Code:	LCS-R81612 COND-W-2510B	Date Analyzed:	08/14/20	15 601h						
Conductivity		994	µmhos/cm	SM2510B	0.436	2.00	1,000	0	99.4	98 - 102
Lab Sample ID: Test Code:	LCS NO2/NO3-W-353.2	Date Analyzed:	08/13/20	15 2352h						
Nitrate/Nitrite (as	s N)	0.910	mg/L	E353.2	0.00833	0.0100	1.000	0	91.0	90 - 110
Lab Sample ID: Test Code:	<b>LCS-R81601</b> PH-4500H+B	Date Analyzed:	08/13/20	15 1840h						
pH @ 25° C		8.95	pH Units	SM4500-H+B	1.00	1.00	9.000	0	99.4	98 - 102
Lab Sample ID: Test Code:	LCS-38561 PO4-W-4500PF	Date Analyzed: Date Prepared:	08/14/20 08/14/20	15 1235h 15 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: Test Code:	<b>LCS-R81644</b> TDS-W-2540C	Date Analyzed:	08/13/20	15 2100h						
Total Dissolved S	Solids	222	mg/L	SM2540C	6.13	10.0	205.0	0	108	80 - 120
Lab Sample ID: Test Code:	LCS-R81629 TSS-W-2540D	Date Analyzed:	08/13/20	15 1610h						
Total Suspended	Solids	91.0	mg/L	SM2540D	2.83	3.00	100.0	0	91.0	80 - 120

Report Date: 8/14/2015 Page 34 of 40



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## Jose Rocha QA Officer

# American West NALYTICAL LABORATORIES QC SUMMARY REPORT Client: Utah Division of Water Quality Contact: Lenora Sullivan Lab Set ID: 1508262 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: Test Code:	<b>MB-R81617</b> 300.0-W	Date Analyzed:	08/13/201	5 1213h										
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: Test Code:	<b>MB-R81615</b> ALK-W-2320B	Date Analyzed:	08/14/201	5 632h										
Alkalinity (as Ca	CO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Bicarbonate (as C	,	< 10.0	mg/L	SM2320B	1.86	10.0								U
Carbonate (as Ca	CO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Lab Sample ID: Test Code:	<b>MB-R81612</b> COND-W-2510B	Date Analyzed:	08/14/201	5 601h										
Conductivity		0.710	µmhos/cm	SM2510B	0.436	2.00								JB
Lab Sample ID: Test Code:	<b>MB</b> NO2/NO3-W-353.2	Date Analyzed:	08/13/201	5 2350h										
Nitrate/Nitrite (as	s N)	< 0.0100	mg/L	E353.2	0.00833	0.0100								U
Lab Sample ID: Test Code:	<b>MB-38561</b> PO4-W-4500PF	Date Analyzed: Date Prepared:	08/14/201 08/14/201											
Phosphate, Total		0.0226	mg/L	SM4500-P-F	0.0212	0.0500								JB
Lab Sample ID: Test Code:	<b>MB-R81644</b> TDS-W-2540C	Date Analyzed:	08/13/201	5 2100h										
Total Dissolved S	Solids	< 10.0	mg/L	SM2540C	6.13	10.0								U
Lab Sample ID: Test Code:	<b>MB-R81629</b> TSS-W-2540D	Date Analyzed:	08/13/201	5 1610h										
Total Suspended	Solids	< 3.00	mg/L	SM2540D	2.83	3.00								U

Report Date: 8/14/2015 Page 35 of 40



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Jose Rocha QA Officer

## **QC SUMMARY REPORT**

		Reporting	Amount	Snike Ref.	RPD Ref.	RPD
Project:	Gold King Mine - San Juan River Sampling		QC Type:	MBLK		
Lab Set ID:	1508262		Dept:	WC		
Client:	Utah Division of Water Quality		Contact:	Lenora Sullivan		

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

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.

Report Date: 8/14/2015 Page 36 of 40



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### **QC SUMMARY REPORT** Utah Division of Water Quality **Client:** Lenora Sullivan **Contact:** Lab Set ID: 1508262 Dept: WC Gold King Mine - San Juan River Sampling QC Type: MS **Project:** Reporting Spike Ref. RPD Ref. Amount A --- -- 1--**.**....

Analyte	Result	Units	Method	MDL	Limit	Spiked	Amount	%REC	Limits	Amt	% RPD	Limit	Qual
Lab Sample ID:         1508262-001AMS           Test Code:         300.0-W	Date Analyzed:	08/13/201	15 2151h										
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           Test Code:         300.0-W	Date Analyzed:	08/13/201	15 2332h										
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:1508262-001AMSTest Code:ALK-W-2320B	Date Analyzed:	08/14/201	15 632h										
Alkalinity (as CaCO3)	204	mg/L	SM2320B	1.86	10.0	100.0	108	96.3	80 - 120				
Lab Sample ID:         1508263-001AMS           Test Code:         ALK-W-2320B	Date Analyzed:	08/14/201	15 632h										
Alkalinity (as CaCO3)	211	mg/L	SM2320B	1.86	10.0	100.0	112	99.8	80 - 120				
Lab Sample ID:         1508275-001AMS           Test Code:         ALK-W-2320B	Date Analyzed:	08/14/201	15 632h										
Alkalinity (as CaCO3)	204	mg/L	SM2320B	1.86	10.0	100.0	107	98.0	80 - 120				
Lab Sample ID:         1508263-004DMS           Test Code:         NO2/NO3-W-353.2	Date Analyzed:	08/14/201	15 015h										
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           Test Code:         NO2/NO3-W-353.2	Date Analyzed:	08/14/201	15 019h										
Nitrate/Nitrite (as N)	5.16	mg/L	E353.2	0.0417	0.0500	5.000	0.481	93.6	90 - 110				

Report Date: 8/14/2015 Page 37 of 40



Test Code:

PO4-W-4500PF

3440 South 700 West

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Jose Rocha QA Officer

### **OC SUMMARY REPORT Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan Lab Set ID: 1508262 Dept: WC **QC Type:** MS **Project:** Gold King Mine - San Juan River Sampling Reporting Spike Ref. **RPD Ref.** RPD Amount MDL %REC % RPD Result Units Method Limit Spiked Limits Limit Qual Analyte Amount Amt Lab Sample ID: 1508262-004DMS Date Analyzed: 08/13/2015 2359h Test Code: NO2/NO3-W-353.2 1.19 E353.2 0.00833 0.0100 1.000 0.307 90 - 110 Nitrate/Nitrite (as N) 88.3 mg/L Lab Sample ID: 1508263-001DMS Date Analyzed: 08/14/2015 1301h Test Code: PO4-W-4500PF Date Prepared: 08/14/2015 1020h -1.90 Phosphate, Total (as P) SM4500-P-F 0.0424 0.100 1.000 5.72 90 - 110 5.70 mg/L Lab Sample ID: 1508275-001DMS Date Analyzed: 08/14/2015 1306h Test Code: PO4-W-4500PF Date Prepared: 08/14/2015 1020h 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

1.000

3.05

49.6

90 - 110

 Phosphate, Total (as P)
 3.55
 mg/L
 SM4500-P-F
 0.0212
 0.0500

08/14/2015 1020h

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

Date Prepared:

Report Date: 8/14/2015 Page 38 of 40

1



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Jose Rocha **QA** Officer

## **QC SUMMARY REPORT**

Client: U Lab Set ID: 1	Jtah Division of Water 508262	Quality					Contact: Dept:	Lenora Su WC	ullivan					
Project: C	Gold King Mine - San J	Juan River Sampl	ing				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: Test Code:	<b>1508262-001AMSD</b> 300.0-W	Date Analyzed:	08/13/20	15 2207h										
Chloride Sulfate		58.0 208	mg/L mg/L	E300.0 E300.0	0.0751 0.211	1.00 7.50	50.00 50.00	8.7 157	98.5 102	90 - 110 90 - 110	58.4 208	0.721 0.324	20 20	
Lab Sample ID: Test Code:	<b>1508263-001AMSD</b> 300.0-W	Date Analyzed:	08/13/20	15 2349h										
Chloride Sulfate		59.0 193	mg/L mg/L	E300.0 E300.0	0.0751 0.211	1.00 7.50	50.00 50.00	9.83 143	98.4 99.8	90 - 110 90 - 110	59.4 195	0.605 0.758	20 20	
Lab Sample ID: Test Code:	1508262-001AMSD ALK-W-2320B	Date Analyzed:	08/14/20	15 632h										
Alkalinity (as Ca	aCO3)	203	mg/L	SM2320B	1.86	10.0	100.0	108	94.6	80 - 120	205	0.835	10	
Lab Sample ID: Test Code:	<b>1508263-001AMSD</b> ALK-W-2320B	Date Analyzed:	08/14/20	15 632h										
Alkalinity (as Ca	aCO3)	208	mg/L	SM2320B	1.86	10.0	100.0	112	96.4	80 - 120	211	1.62	10	
Lab Sample ID: Test Code:	1508275-001AMSD ALK-W-2320B	Date Analyzed:	08/14/20	15 632h										
Alkalinity (as Ca	aCO3)	204	mg/L	SM2320B	1.86	10.0	100.0	107	98.0	80 - 120	205	0	10	

### ty (a JS) ıg Lab Sample ID: 1508263-004DMSD 08/14/2015 016h Date Analyzed: Test Code: NO2/NO3-W-353.2 4.86 mg/L E353.2 0.0417 0.0500 5.000 0.317 90.8 90 - 110 4.91 1.15 10 Nitrate/Nitrite (as N) Lab Sample ID: 1508275-001DMSD Date Analyzed: 08/14/2015 021h Test Code: NO2/NO3-W-353.2 5.00 E353.2 0.0417 0.0500 5.000 0.481 10 Nitrate/Nitrite (as N) mg/L 90.4 90 - 110 5.16 3.17

Report Date: 8/14/2015 Page 39 of 40



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Jose Rocha QA Officer

90 - 110

6.13

42.6

10

@

-53.6

## **QC SUMMARY REPORT**

Client:	Jtah Division of Water	r Quality					Contact:	Lenora Su	ıllıvan					
Lab Set ID: 1	508262						Dept:	WC						
Project: (	Gold King Mine - San .	Juan River Sampl	ing				<b>QC Туре</b>	e: 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: Test Code:	<b>1508262-004DMSD</b> NO2/NO3-W-353.2	Date Analyzed:	08/14/20	15 000h										
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: Test Code:	<b>1508262-001DMSD</b> PO4-W-4500PF	Date Analyzed: Date Prepared:		15 1237h 15 1020h										
Phosphate, Tota	l (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: Test Code:	<b>1508263-001DMSD</b> PO4-W-4500PF	Date Analyzed: Date Prepared:		15 1245h 15 1020h										
Phosphate, Tota	l (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

0.0500

1.000

4.51

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

Lab Sample ID: 1508275-001DMSD

PO4-W-4500PF

Test Code:

Phosphate, Total (as P)

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

Date Analyzed:

Date Prepared:

3.98

08/14/2015 1249h

08/14/2015 1020h

mg/L

SM4500-P-F

0.0212

Report Date: 8/14/2015 Page 40 of 40

American West Analytical Laboratories Next Day Rush

Collection Times revised -RW

GenericEDD\_QC

WORK O	<b>RDER Summary</b>				Wo	rk Order: 1	508262	Page 1 of 4
Client:	Utah Division of Water Quality				Γ	Due Date: 8/1	4/2015	
Client ID:	UTD200		Contact	: Lenora Sullivan				
Project:	Gold King Mine - San Juan River Sa	mnling	QC Lev			/O Type: Sta	ndard	
Comments:	Next Day Rush $QC2+$ / dissolved me		•					th a I
comments.	flag. Include EDD Use sparingly, do no							
Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1508262-001A	San Juan R @ Mexican Hat US163 Xing (4953000)	8/12/2015 1706h	8/13/2015 1450h	300.0-W	Aqueous	$\checkmark$	df - wc	1
				2 SEL Analytes: CL	SO4			
				ALK-W-2320B		$\checkmark$	df - wc	
				3 SEL Analytes: ALK	X ALKB ALKC			
				COND-W-2510B			df - wc	
				PH-4500H+B			df - wc	
				TDS-W-2540C			df - wc	
				TSS-W-2540D			df - wc	
1508262-001B				200.7-W 6 SEL Analytes: AL (	CA FF MG K NA	$\checkmark$	df - total metals	
				200.7-W-PR			df - total metals	
				200.8-W			df - total metals	
					AS BA BE CD CR CO CU PI			
				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	
1508262-001C				200.7-DIS		$\checkmark$	df - dis metals	
				6 SEL Analytes: AL	CA FE MG K NA			
				200.7-DIS-PR			df - dis metals	
				200.8-DIS		$\checkmark$	df - dis metals	
				17 SEL Analytes: SB AG TL V ZN	AS BA BE CD CR CO CU PI	3 MN MO NI SE		
				200.8-DIS-PR			df - dis metals	
				HARD-2340B			df - dis metals	
				1 SEL Analytes: HAP	RD			
				HG-DW-DIS-245.1			df - dis metals	
				HG-DW-DIS-PR			df - dis metals	

# **REVISED:** 8/26/2015

			Wo	rk Order: 15	508262 Page 2 of
			Γ	Due Date: 8/1	4/2015
Collected Da	ate Received Date	Test Code	Matrix	Sel	Storage
ing 8/12/2015 170	8/13/2015 1450h	NO2/NO3-W-353.2	Aqueous		df - po4 / no2/no3
		PO4-W-4500PF			df - po4 / no2/no3
		PO4-W-PR			df - po4 / no2/no3
) 12/30/1899 14	57h 8/13/2015 1450h	300.0-W	Aqueous	$\checkmark$	df - wc
		2 SEL Analytes: CL SO4			
		ALK-W-2320B		$\checkmark$	df - wc
		3 SEL Analytes: ALK AL	KB ALKC		
		COND-W-2510B			df - wc
		PH-4500H+B			df - wc
		TDS-W-2540C			df - wc
		TSS-W-2540D			df - wc
		200.7-W		$\checkmark$	df - total metals
		6 SEL Analytes: AL CA	FE MG K NA		
		200.7-W-PR			df - total metals
		200.8-W		$\checkmark$	df - total metals
		17 SEL Analytes: SB AS AG TL V ZN	BA BE CD CR CO CU PI	3 MN MO NI SE	
		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		$\checkmark$	df - dis metals
		6 SEL Analytes: AL CA	FE MG K NA		
		200.7-DIS-PR			df - dis metals
		200.8-DIS		$\checkmark$	df - dis metals
		17 SEL Analytes: SB AS AG TL V ZN	BA BE CD CR CO CU PI	3 MN MO NI SE	
		200.8-DIS-PR			df - dis metals
		HARD-2340B		$\checkmark$	df - dis metals
		1 SEL Analytes: HARD			
		HG-DW-DIS-245.1			df - dis metals
		HG-DW-DIS-PR			df - dis metals
		NO2/NO3-W-353.2			df - po4 / no2/no3
		PO4-W-4500PF			df - po4 / no2/no3
		PO4-W-PR			df - po4 / no2/no3
na 12/30/1899 14	04h 8/13/2015 1450h	300.0-W	Aqueous	$\checkmark$	df - wc
		2 SEL Analytes: CL SO4			
			12/30/1899 1404h 8/13/2015 1450h <b>300.0-W</b> 2 SEL Analytes: CL SO4	12/30/1899 1404h       8/13/2015 1450h <b>300.0-W</b> Aqueous         2 SEL Analytes: CL SO4	12/30/1899 1404h       8/13/2015 1450h       300.0-W       Aqueous         2 SEL Analytes: CL SO4

WORK O	RDER Summary	Work Order: 1	508262	Page 3 of 4					
Client:	Utah Division of Water Quality	Due Date: 8/14/2015							
Sample ID	Client Sample ID	Collected Date	<b>Received Date</b>	Test Code	Matrix	Sel	el Storage		
1508262-003A	San Juan River @ Town of Montezuma (4953990)	12/30/1899 1404h	8/13/2015 1450h	ALK-W-2320B	Aqueous	$\checkmark$	df - wc	1	
				3 SEL Analytes: ALF	X ALKB ALKC				
				COND-W-2510B			df - wc		
				PH-4500H+B			df - wc		
				TDS-W-2540C			df - wc		
				TSS-W-2540D			df - wc		
1508262-003B				200.7-W		$\checkmark$	df - total meta	ls	
				6 SEL Analytes: AL	CA FE MG K NA				
				200.7-W-PR			df - total meta	ls	
				200.8-W		$\checkmark$	df - total meta	ls	
				17 SEL Analytes: SB AG TL V ZN	AS BA BE CD CR CC	O CU PB MN MO NI SE			
				200.8-W-PR			df - total meta	ls	
				HARD-2340B			df - total meta	ls	
				HG-DW-245.1			df - total meta	ls	
				HG-DW-PR			df - total meta	ls	
1508262-003C				200.7-DIS		$\checkmark$	df - dis metals		
				6 SEL Analytes: AL	CA FE MG K NA				
				200.7-DIS-PR			df - dis metals		
				200.8-DIS		$\checkmark$	df - dis metals		
				17 SEL Analytes: SB AG TL V ZN	AS BA BE CD CR CC	O CU PB MN MO NI SE			
				200.8-DIS-PR			df - dis metals		
				HARD-2340B		$\checkmark$	df - dis metals		
				1 SEL Analytes: HA	RD				
				HG-DW-DIS-245.1			df - dis metals		
				HG-DW-DIS-PR			df - dis metals		
1508262-003D				NO2/NO3-W-353.2			df - po4 / no2/	/no3	
				PO4-W-4500PF			df - po4 / no2/	/no3	
				PO4-W-PR			df - po4 / no2/	/no3	
1508262-004A	San Juan R @ US160 Xing in CO (4954000)	8/12/2015 1209h	8/13/2015 1450h	300.0-W	Aqueous		df - wc	1	
				2 SEL Analytes: CL	-	Ŀ			
				ALK-W-2320B			df - wc		
				3 SEL Analytes: ALK	X ALKB ALKC	•			
				COND-W-2510B			df - wc		
				PH-4500H+B			df - wc		
				TDS-W-2540C			df - wc		
				TSS-W-2540D			df - wc		

 Printed: 8/26/2015
 FOR LABORATORY USE ONLY [fill out on page 1]:
 % M
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 TAT
 QC
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 HOK\_\_\_\_\_
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WORK O	RDER Summary	Work	Corder: 15	508262	Page 4 of 4			
Client:	Utah Division of Water Quality	Dı	Due Date: 8/14/2015					
Sample ID	Client Sample ID	Collected Date	<b>Received Date</b>	Test Code	Matrix	Sel	Storage	
1508262-004B	San Juan R @ US160 Xing in CO (4954000)	8/12/2015 1209h	8/13/2015 1450h	<b>200.7-W</b> 6 SEL Analytes: A	Aqueous AL CA FE MG K NA		df - total metals	1
				200.7-W-PR			df - total metals	
				200.8-W		$\checkmark$	df - total metals	
				17 SEL Analytes: AG TL V ZN	SB AS BA BE CD CR CO CU PB	MN MO NI SE		
				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	
1508262-004C				200.7-DIS		$\checkmark$	df - dis metals	
				6 SEL Analytes: A	AL CA FE MG K NA			
				200.7-DIS-PR			df - dis metals	
				200.8-DIS		$\checkmark$	df - dis metals	
				17 SEL Analytes: AG TL V ZN	SB AS BA BE CD CR CO CU PB	MN MO NI SE		
				200.8-DIS-PR			df - dis metals	
				HARD-2340B		$\checkmark$	df - dis metals	
				1 SEL Analytes: H	HARD			
				HG-DW-DIS-245.1			df - dis metals	
				HG-DW-DIS-PR			df - dis metals	
1508262-004D				NO2/NO3-W-353.2			df - po4 / no2/no	3
				PO4-W-4500PF			df - po4 / no2/no	3
				PO4-W-PR			df - po4 / no2/no	3

Addro	ess:	Utah Division PO Box 1448 Salt Lake City Gold King Mi	70 y, UT 8411	- 14-4	- 1870	) .		ontact: Phone: Fax : Email:	801-5 801-5	a Sulliv: 36-4367 36-4301 s@utah	- -	Page 1 of 1 QC Level: <b>2+</b> <b>TAT - ASAP</b>			
-	°O#:										h.gov (please copy on results)				
San Juan River at Town of Montezuma U95 369	14:57 ) 14:0 12:09	468/12/15	r e-mail fro		Sample Matrix	Total Chemistry: pH, Alkalinity, Anions,       TDS, TSS, Conductivity My	Total TAL Metals + Mo + Hardness (200.7:           N         N; Ca, Fe, K, Mg, Na, 200.8: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Mo, N, Ag, Se, Tl, V, Zn, 287.1: Hg	Dissolved TAL Met	ug, na, <b>200.0</b> . 00, 1, Pb, Mn, Mo, N, Ag Ig)		 Comments Dissolved Metals samples have been field filtered. Samples collected om river monitoring following a mine veate dump release. Please flag any concentrations etected less than RL and at or greater han the MDL with a J qualifier. Please include EDD.	Datocrators/U.S. Only         Samples Were:         1         Shipped or Infid deliveration         2         Ambient Chiller         3         Temperature         4         Received Broken/Leaking         (improperty Stelled)         Y         F         Property Preserved         Y         N         6         Received Within         Bolding Times         Y         N         COC Tape Was:         1         Present on Outer Pactage         Y         N         2         Unbroken on Outer Pactage         Y         N         3         Present on Sample         Y         N         Y         N			
· · · ·	,			╀	$\square$				·			Y S			
Special Instructions:		•						-		-		A.			

Date:

Time:

Received by: Signature

Print Name

Date:

lime:

Relinquished by: Signature

Print Name

Lab Set ID: 1506262

### **Preservation Check Sheet**

### Sample Set Extension and pH

Analysis	Preservative	-001	-002	-003	-004								
Ammonia	$pH < 2 H_2SO_4$												
COD	$pH < 2 H_2SO_4$												
Cyanide	pH >12 NaOH												
Metals	pH <2 HNO <sub>3</sub>	Ves	Ves	Ves	YES.								
NO <sub>2</sub> & NO <sub>3</sub>	$pH < 2 H_2SO_4$	1	T T	1	$l^{-1}$								
0 & G	pH <2 HCL												
Phenols	$pH < 2 H_2SO_4$												
Sulfide	pH > 9NaOH,												
	Zn Acetate						•						
TKN	$pH < 2 H_2SO_4$												
T PO <sub>4</sub>	$pH \leq 2 H_2 SO_4$												

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.