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LABORATORY IDENTIFICATION NUMBER: 1508586

### SECTION 1.

3440 South 700 West  
Salt Lake City, UT 84119

CASE NARRATIVE  
CHAIN-OF-CUSTODIES

### SECTION 2.

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ANALYTICAL REPORTS

### SECTION 3.

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BATCH QC REPORTS

### SECTION 4.

Kyle F. Gross  
Laboratory Director

INSTRUMENT QC SUMMARIES

Jose Rocha  
QA Officer

### SECTION 5.

LOGBOOKS, RUNLOGS AND RAW DATA PER  
ANALYSIS

Assembled by:

Reviewed by:

<b>Melissa Connolly</b>	Digitally signed by Melissa Connolly DN: cn=Melissa Connolly, o=American West Analytical Laboratories, ou, email=melissa@awa-labs.com, c=US Date: 2015.12.09 15:59:50 -07'00'	<b>Kyle F. Gross</b>	Digitally signed by Kyle F. Gross Date: 2015.12.10 07:25:28 -07'00'
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## SECTION 1.

- ❑ CASE NARRATIVE
- ❑ AWAL CHAIN-OF-CUSTODY
- ❑ CLIENT CHAIN-OF-CUSTODY

3440 South 700 West  
Salt Lake City, UT 84119

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

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

RE: Gold King Mine Spill - San Juan River

Dear Lenora Sullivan:

Lab Set ID: 1508586

American West Analytical Laboratories received sample(s) on 8/29/2015 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 9/15/2015. The report has been updated to a QC 3+ data package. The Date Prepared for Calcium (Total) on samples 1508586-001 and 1508586-007 has been corrected.

Thank You,

**Kyle F. Gross**  
Digitally signed  
by Kyle F. Gross  
Date:  
2015.12.10  
07:25:52 -07'00'

Approved by:

Laboratory Director or designee

# American West Analytical Laboratories

D

## WORK ORDER SUMMARY

Client: Utah Division of Water Quality

Client ID: UTD200

Project: Gold King Mine Spill - San Juan River

Comments: QC 2+, Flag any concentrations detected less than RL and at or greater than the MDL with a J flag. Include EDD. Samples for Dissolved Metals were field filtered. Cc: jamesharris@utah.gov and Trisha Johnson, also Brad Martin and Amanda Rohrbaugh with Techlaw. Footnote report, pH received outside of hold.;

Work Order: 1508586

Due Date: 9/15/2015

Contact: Lenora Sullivan

QC Level: II+ MDL

WO Type: Standard

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Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508586-001A	GK-SW-17	8/27/2015 1035h	8/29/2015 1535h	300.0-W 2 SEL Analytes: CL SO4	Aqueous		df - wc
				ALK-W-2320B 3 SEL Analytes: ALK ALKB ALKC			df - wc
				COND-W-2510B			df - wc
				PH-4500H+B			df - wc
				TDS-W-2540C			df - wc
				TSS-W-2540D			df - wc
				200.7-W 6 SEL Analytes: AL CA FE MG K NA			df - metals
				200.7-W-PR			df - metals
				200.8-W 17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			df - metals
				200.8-W-PR			df - metals
				HARD-2340B			df - metals
				HG-DW-245.1			df - metals
				HG-DW-PR			df - metals
				200.7-DIS 6 SEL Analytes: AL CA FE MG K NA			df - dis met
				200.7-DIS-PR			df - dis met
				200.8-DIS 17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			df - dis met
				200.8-DIS-PR			df - dis met
				HARD-2340B 1 SEL Analytes: HARD			df - dis met
				HG-DW-DIS-245.1			df - dis met
				HG-DW-DIS-PR			df - dis met
				NO2/NO3-W-353.2			df - no2/no3
				PO4-W-4500PF			df - no2/no3

1508586-001C

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# WORK ORDER SUMMARY

Work Order: **1508586** Page 2 of 11

Client: Utah Division of Water Quality

Due Date: 9/15/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-002A	GK-SW-18	8/27/2015 1315h	8/29/2015 1535h	300.0-W 2 SEL Analytes: CL SO4	Aqueous	df - wc
				ALK-W-2320B		df - wc
				3 SEL Analytes: ALK ALKB ALKC		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				200.7-W		df - metals
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-W-PR		df - metals
				200.8-W		df - metals
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-W-PR		df - metals
				HARD-2340B		df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				1 SEL Analytes: HARD		
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
				NO2/NO3-W-353.2		df - no2/no3
				PO4-W-4500PF		df - no2/no3
				PO4-W-PR		df - no2/no3
				300.0-W	Aqueous	df - wc
				2 SEL Analytes: CL SO4		
				ALK-W-2320B		df - wc
				3 SEL Analytes: ALK ALKB ALKC		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
1508586-002B						
1508586-002C						
1508586-002D						
1508586-003A	GK-SW-19	8/27/2015 1355h	8/29/2015 1535h	300.0-W 2 SEL Analytes: CL SO4	Aqueous	df - wc
				ALK-W-2320B		df - wc
				3 SEL Analytes: ALK ALKB ALKC		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc

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**WORK ORDER Summary**

Client: Utah Division of Water Quality

Work Order: **1508586**

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Due Date: 9/15/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-003A	GK-SW-19	8/27/2015 1355h	8/29/2015 1535h	TSS-W-2540D	Aqueous	df - wc
1508586-003B				200.7-W 6 SEL Analytes: AL CA FE MG K NA		df - metals
				200.7-W-PR		df - metals
				200.8-W		df - metals
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-W-PR		df - metals
				HARD-2340B		df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				1 SEL Analytes: HARD		
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
				N02/N03-W-353.2		df - no2/no3
				P04-W-450PF		df - no2/no3
				P04-W-PR		df - no2/no3
				300.0-W	Aqueous	df - wc
				2 SEL Analytes: CL SO4		
				ALK-W-2320B		df - wc
				3 SEL Analytes: ALK ALKB ALKC		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				200.7-W		df - metals
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-W-PR		df - metals
				200.8-W		df - metals
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		

1508586-004A

1508586-004B

1508586-003D

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# WORK ORDER SUMMARY

Client: Utah Division of Water Quality

Work Order: **1508586** Page 4 of 11

Due Date: 9/15/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-004B	GK-SW-20	8/27/2015 1450h	8/29/2015 1535h	200.8-W-PR HARD-2340B	Aqueous	df - metals df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				1 SEL Analytes: HARD		
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
				NO2/NO3-W-353.2		df - no2/no3
				PO4-W-4500PF		df - no2/no3
				PO4-W-PR		df - no2/no3
				300.0-W	Aqueous	df - wc
				2 SEL Analytes: CL SO4		
				ALK-W-2320B		df - wc
				3 SEL Analytes: ALK ALKB ALKC		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				200.7-W		df - metals
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-W-PR		df - metals
				200.8-W		df - metals
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-W-PR		df - metals
				HARD-2340B		df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-DIS-PR		df - dis met

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1508586-005A

1508586-005B

1508586-005C

Due Date: 9/15/2015

# WORK ORDER SUMMARY

Client: Utah Division of Water Quality

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Storage
1508586-005C	GK-SW-21	8/27/2015 1450h	8/29/2015 1535h	200.8-DIS <i>17 SEL Analytes: SB AS BA BE CD CR CU PB MN MO NI SE AG TL V ZN</i>	Aqueous	df - dis met
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				<i>1 SEL Analytes: HARD</i>		
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
				NO2/NO3-W-353.2		df - no2/no3
				PO4-W-4500PF		df - no2/no3
				PO4-W-PR		df - no2/no3
1508586-006A	GK-SW-22	8/27/2015 1540h	8/29/2015 1535h	300.0-W <i>2 SEL Analytes: CL SO4</i>	Aqueous	df - wc
				ALK-W-2320B		df - wc
				<i>3 SEL Analytes: ALK ALKB ALKC</i>		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				200.7-W		df - metals
				<i>6 SEL Analytes: AL CA FE MG K NA</i>		
				200.7-W-PR		df - metals
				200.8-W		df - metals
				<i>17 SEL Analytes: SB AS BA BE CD CR CU PB MN MO NI SE AG TL V ZN</i>		
				200.8-W-PR		df - metals
				HARD-2340B		df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				<i>6 SEL Analytes: AL CA FE MG K NA</i>		
				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
				<i>17 SEL Analytes: SB AS BA BE CD CR CU PB MN MO NI SE AG TL V ZN</i>		
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				<i>1 SEL Analytes: HARD</i>		
				HG-DW-DIS-245.1		df - dis met

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Work Order: **1508586**  
 Due Date: 9/15/2015

**WORK ORDER Summary**

Client: Utah Division of Water Quality

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-006C	GK-SW-22	8/27/2015 1540h	8/29/2015 1535h	HG-DW-DIS-PR	Aqueous	df - dis met
1508586-006D				NO2/NO3-W-353.2		df - no2/no3
				PO4-W-4500PF		df - no2/no3
				PO4-W-PR		df - no2/no3
1508586-007A	GK-SW-23	8/28/2015 1025h	8/29/2015 1535h	300.0-W	Aqueous	df - wc
				2 SEL Analytes: CL SO4		
				ALK-W-2320B		df - wc
				3 SEL Analytes: ALK ALKB ALKC		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				200.7-W		df - metals
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-W-PR		df - metals
				200.8-W		df - metals
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE		
				AG TL V ZN		
				200.8-W-PR		df - metals
				HARD-2340B		df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE		
				AG TL V ZN		
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				1 SEL Analytes: HARD		
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
				NO2/NO3-W-353.2		df - no2/no3
				PO4-W-4500PF		df - no2/no3
				PO4-W-PR		df - no2/no3
1508586-008A	GK-SW-24	8/28/2015 1400h	8/29/2015 1535h	300.0-W	Aqueous	df - wc
				2 SEL Analytes: CL SO4		

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# WORK ORDER SUMMARY

Client: Utah Division of Water Quality

Work Order: **1508586**

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Due Date: 9/15/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508586-008A	GK-SW-24	8/28/2015 1400h	8/29/2015 1535h	ALK-W-2320B 3 SEL Analytes: ALK ALKB ALKC	Aqueous		df - wc
1508586-008B				COND-W-2510B PH-4500H+B TDS-W-2540C TSS-W-2540D			df - wc df - wc df - wc df - wc
				200.7-W 6 SEL Analytes: AL CA FE MG K NA			df - metals
				200.7-W-PR 200.8-W			df - metals df - metals
				17 SEL Analytes: SB AS BA BE CD CR CU PB MN MO NI SE AG TL V ZN			df - metals df - metals df - metals df - metals df - dis met
1508586-008C				200.7-DIS 6 SEL Analytes: AL CA FE MG K NA			df - dis met
				200.7-DIS-PR 200.8-DIS			df - dis met df - dis met
				17 SEL Analytes: SB AS BA BE CD CR CU PB MN MO NI SE AG TL V ZN			df - dis met df - dis met
				200.8-DIS-PR HARD-2340B			df - dis met df - dis met
				1 SEL Analytes: HARD HG-DW-DIS-245.1			df - dis met df - dis met
				HG-DW-DIS-PR NO2/NO3-W-353.2			df - no2/no3 df - no2/no3
1508586-008D				PO4-W-4500PF PO4-W-PR			df - no2/no3 df - no2/no3
1508586-009A	GK-SW-25	8/28/2015 1400h	8/29/2015 1535h	300.0-W 2 SEL Analytes: CL SO4	Aqueous		df - wc
				ALK-W-2320B 3 SEL Analytes: ALK ALKB ALKC			df - wc
				COND-W-2510B PH-4500H+B TDS-W-2540C TSS-W-2540D			df - wc df - wc df - wc df - wc

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# WORK ORDER SUMMARY

Client: Utah Division of Water Quality

Work Order: **1508586** Page 8 of 11

Due Date: 9/15/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-009B	GK-SW-25	8/28/2015 1400h	8/29/2015 1535h	200.7-W 6 SEL Analytes: AL CA FE MG K NA	Aqueous	df - metals
				200.7-W-PR		df - metals
				200.8-W		df - metals
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-W-PR		df - metals
				HARD-2340B		df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				1 SEL Analytes: HARD		
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
				NO2/NO3-W-353.2		df - no2/no3
				P04-W-4500PF		df - no2/no3
				P04-W-PR		df - no2/no3
				300.0-W		df - wc
				2 SEL Analytes: CL SO4	Aqueous	
				ALK-W-2320B		df - wc
				3 SEL Analytes: ALK ALKB ALKC		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				200.7-W		df - metals
				6 SEL Analytes: AL CA FE MG K NA		
				200.7-W-PR		df - metals
				200.8-W		df - metals
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN		
				200.8-W-PR		df - metals

1508586-010A

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# WORK ORDER SUMMARY

Work Order: **1508586** Page 9 of 11

Client: Utah Division of Water Quality

Due Date: 9/15/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-010B	GK-SW-26	8/28/2015 1445h	8/29/2015 1535h	HARD-2340B HG-DW-245.1	Aqueous	df - metals df - metals
1508586-010C				HG-DW-PR 200.7-DIS 6 SEL Analytes: AL CA FE MG K NA 200.7-DIS-PR 200.8-DIS		df - metals df - dis met df - dis met
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN HARD-2340B 1 SEL Analytes: HARD		df - dis met df - dis met
				HG-DW-DIS-245.1 HG-DW-DIS-PR NO2/NO3-W-353.2 PO4-W-4500PF PO4-W-PR		df - dis met df - dis met df - no2/no3 df - no2/no3 df - no2/no3
1508586-010D				300.0-W 2 SEL Analytes: CL SO4 ALK-W-2320B 3 SEL Analytes: ALK ALKB ALKC COND-W-2510B PH-4500H+B TDS-W-2540C TSS-W-2540D 200.7-W 6 SEL Analytes: AL CA FE MG K NA 200.7-W-PR 200.8-W	Aqueous	df - wc df - wc df - wc df - wc df - wc df - metals df - metals df - metals
1508586-011A	GK-SW-27	8/28/2015 1535h	8/29/2015 1535h	200.8-W-PR 200.8-W 17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN 200.8-W-PR HARD-2340B HG-DW-245.1 HG-DW-PR 200.7-DIS 6 SEL Analytes: AL CA FE MG K NA 200.7-DIS-PR		df - metals df - metals df - metals df - metals df - dis met df - dis met
1508586-011B						
1508586-011C						

Work Order: **1508586** Page 10 of 11  
 Due Date: 9/15/2015

**WORK ORDER Summary**

Client: Utah Division of Water Quality

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-011C	GK-SW-27	8/28/2015 1535h	8/29/2015 1535h	200.8-DIS <i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>	Aqueous	df - dis met
				200.8-DIS-PR		df - dis met
				HARD-2340B <i>1 SEL Analytes: HARD</i>		df - dis met
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
				NO2/NO3-W-353.2		df - no2/no3
				PO4-W-4500PF		df - no2/no3
				PO4-W-PR		df - no2/no3
1508586-011D				300.0-W <i>2 SEL Analytes: CL SO4</i>	Aqueous	df - wc
				ALK-W-2320B		df - wc
				<i>3 SEL Analytes: ALK ALKB ALKC</i>		
				COND-W-2510B		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				200.7-W		df - metals
				<i>6 SEL Analytes: AL CA FE MG K NA</i>		
1508586-012A		8/28/2015 1625h	8/29/2015 1535h	200.7-W-PR		df - metals
				200.8-W		df - metals
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>		
				200.8-W-PR		df - metals
				HARD-2340B		df - metals
				HG-DW-245.1		df - metals
				HG-DW-PR		df - metals
				200.7-DIS		df - dis met
				<i>6 SEL Analytes: AL CA FE MG K NA</i>		
1508586-012B				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>		
				200.8-DIS-PR		df - dis met
				HARD-2340B		df - dis met
				<i>1 SEL Analytes: HARD</i>		
				HG-DW-DIS-245.1		df - dis met

Printed: 8/31/2015 FOR LABORATORY USE ONLY [fill out on page 1]: %M  RT  CN  TAT  QC  HOK \_\_\_\_\_ HOK \_\_\_\_\_ HOK \_\_\_\_\_ COC Emailed \_\_\_\_\_

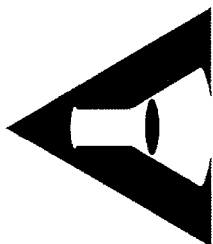
Due Date: 9/15/2015

**WORK ORDER SUMMARY**

Client: Utah Division of Water Quality

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508586-012C	GK-SW-28	8/23/2015 1625h	8/29/2015 1535h	HG-DW-DIS-PR	Aqueous	df - dis met
1508586-012D				NO2/NO3-W-353.2		df - no2,no3
				PO4-W-4500PF		df - no2,no3
				PO4-W-PR		df - no2,no3

801 591 1



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

www.awal-labs.com

**Client:** State of Utah  
**Address:** 195 North 1950 West  
 Salt Lake City, UT 84116  
**Contact:** Jim Harris (Utah) / Amanda Rohrbaugh (Techlab)  
**Phone #:** (801) 530-4300 Cell # (916) 698-8019  
**Email:** james.harris@utah.gov / arohrbaugh@techlabinc.com  
**Project Name:** Gold King Mine Spill - San Juan River  
**Project #:**  
**PO #:**  
**Sampler Name:** Techlab Inc. (S. Pinner)

**CHAIN OF CUSTODY**

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

QC Level:	Turn Around Time:					Laboratory Use Only
	1	2	3	3+		
1	2	3	3+			Due Date: 9-13-2015
Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.						
<input checked="" type="checkbox"/> Report down to the MDL <input checked="" type="checkbox"/> Include EDD: <input type="checkbox"/> Lab Filler for: <input checked="" type="checkbox"/> Field Filtered For: Dissolved Metals						
For Compliance With: <input type="checkbox"/> NELAP <input type="checkbox"/> RCRA <input type="checkbox"/> CWA <input type="checkbox"/> SDWA <input type="checkbox"/> ELAP / AQLA <input type="checkbox"/> NLLAP <input type="checkbox"/> Non-Compliance <input type="checkbox"/> Other:						
Samples Were: 1 Shipped (hand delivered) <input checked="" type="checkbox"/> 2 Ambient or Chilled <input checked="" type="checkbox"/> 3 Temperature 0.7 °C 4 Recycled Broken/Leaking (improperly sealed) <input checked="" type="checkbox"/> 5 Properly Preserved <input checked="" type="checkbox"/> 6 Checked at bench <input checked="" type="checkbox"/> 7 Received Within Holding Times <input checked="" type="checkbox"/>						
Known Hazards & Sample Comments pH 9.040C TDS 5m2540C / 55.2 Phosphorus total 4500-PF Nitrate Nitrite 353.2 Anions 390.0 Alkalinity 5m2320B Conductivity 5m2510B Hardness 7340B Dissolved Metals (Field Filtered) 200.8 + 245.1 Total Metals 700.7/200.8 + 245.1						
Samples: 1 Present on Outer Packaging (MA) <input checked="" type="checkbox"/> 2 Unbroken on Outer Packaging (MA) <input checked="" type="checkbox"/> 3 Present on Sample (MA) <input checked="" type="checkbox"/> 4 Unbroken on Sample (MA) <input checked="" type="checkbox"/> Discrepancies Between Sample Labels and COC Record? Y N						

Sample ID	Date Sampled	Time Sampled	# of Containers	Sample Matrix	QC Level	Turn Around Time	Special Instructions
GK-SW-17	8/27/2015	1035	4	W	X	5 (Snd)	
GK-SW-18	8/27/2015	1315	4	W	X		
GK-SW-19	8/27/2015	1355	4	W	X		
GK-SW-20	8/27/2015	1450	4	W	X		
GK-SW-21	8/27/2015	1450	4	W	X		
GK-SW-22	8/27/2015	1540	4	W	X		
GK-SW-23	8/28/2015	1025	4	W	X		
GK-SW-24	8/28/2015	1400	4	W	X		
GK-SW-25	8/28/2015	1400	4	W	X		
GK-SW-26	8/28/2015	1445	4	W	X		
GK-SW-27	8/28/2015	1535	4	W	X		
GK-SW-28	8/28/2015	1625	4	W	X		
Received by: Amanda Rohrbaugh Signature: [Signature] Date: 8/29/2015 Time: 1535 Received by: Kyle F. Gross Signature: [Signature] Date: [ ] Time: [ ] Received by: [ ] Signature: [ ] Date: [ ] Time: [ ] Received by: [ ] Signature: [ ] Date: [ ] Time: [ ] Received by: [ ] Signature: [ ] Date: [ ] Time: [ ] Received by: [ ] Signature: [ ] Date: [ ] Time: [ ] Received by: [ ] Signature: [ ] Date: [ ] Time: [ ]							

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	1	2	3	4	5	6	7	8	9	10	11	12
Ammonia	pH < 2 H <sub>2</sub> SO <sub>4</sub>												
COD	pH < 2 H <sub>2</sub> SO <sub>4</sub>												
Cyanide	pH > 12 NaOH												
Metals	pH < 2 HNO <sub>3</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NO <sub>2</sub> & NO <sub>3</sub>	pH < 2 H <sub>2</sub> SO <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
O & G	pH < 2 HCL												
Phenols	pH < 2 H <sub>2</sub> SO <sub>4</sub>												
Sulfide	pH > 9 NaOH, Zn Acetate												
TKN	pH < 2 H <sub>2</sub> SO <sub>4</sub>												
T PO <sub>4</sub>	pH < 2 H <sub>2</sub> SO <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- 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.



## Elona Hayward

---

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

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

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

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

Thanks, Brad

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

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

>  
> Thanks!

> \_\_\_\_\_  
> **From:** Rebekah Winkler [[Rebekah@awal-labs.com](mailto:Rebekah@awal-labs.com)]  
> **Sent:** Friday, August 28, 2015 6:27 AM  
> **To:** Rohrbaugh, Amanda  
> **Cc:** Kyle Gross; Denise Bruun; Elona Hayward; Katie Merenda; Lynn Turner  
> **Subject:** RE: San Juan River Sample Delivery

> Amanda,

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

>     Aluminum  
>     Calcium  
>     Iron  
>     Potassium  
>     Magnesium  
>     Sodium  
>  
>     Mercury  
>  
>     Antimony  
>     Arsenic  
>     Barium  
>     Beryllium

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

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

> Let us know.

> Thank you,  
> -Rebekah Winkler  
> Reporting Coordinator

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

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

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

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

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

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

> Hi Kyle,

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

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

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

> To: Kyle Gross  
> Subject: RE: San Juan River Sample Delivery  
>  
> Great. I'll work out the time and let you know as soon as possible.  
>  
> From: Kyle Gross [kyle@awal-labs.com]  
> Sent: Thursday, August 27, 2015 8:17 PM  
> To: Rohrbaugh, Amanda  
> Subject: RE: San Juan River Sample Delivery  
>  
> We can accept them as long as we have a delivery time.  
>  
> Kyle  
>  
>  
>  
> Sent from my Verizon Wireless 4G LTE smartphone  
>  
>  
> ----- Original message -----  
> From: "Rohrbaugh, Amanda" <ARohrbaugh@TechLawInc.com>  
> Date: 08/27/2015 21:03 (GMT-07:00)  
> To: Kyle Gross <kyle@awal-labs.com>  
> Subject: San Juan River Sample Delivery  
>  
> Hi Kyle,  
> We shipped samples from 8/24 through 8/26 this morning for standard overnight delivery, so hopefully they will arrive at the lab tomorrow. We will be returning to Salt Lake City this Saturday 8/29 with samples from 8/27 and 8/28. I was wondering if the lab will accept the delivery of the samples from us directly on Saturday or if we need to ship them via FedEx on Saturday for Monday delivery since the field team will be flying home Saturday night. Please let me know the lab's preferred method so we can make arrangements accordingly. Thanks!  
>  
> Amanda Rohrbaugh  
>



## Inorganic Case Narrative

**Client:** Utah Division of Water Quality  
**Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Set ID:** 1508586

---

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

### Sample Receipt Information:

**Date of Receipt:** 8/29/2015  
**Date of Collection:** 8/27-8/28/2015  
**Sample Condition:** Intact  
**C-O-C Discrepancies:** None

**Holding Time and Preservation Requirements:** The analysis and preparation of all samples were performed within the method holding times, with the following exceptions: the analyses for test code PH-4500H+B were received outside of the holding time. All samples were properly preserved.

**Preparation and Analysis Requirements:** The samples were analyzed following the methods stated on the analytical reports. The requested method of 9040C is equivalent to the reported method of SM4500-H+B for pH analysis. The laboratory reported method SM4500-H+B as it is a method applicable to the CWA (Clean Water Act).

**Analytical QC Requirements:** All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

**Batch QC Requirements:** MB, LCS, MS, MSD, RPD, DUP, PDS, SD:

**Method Blanks (MBs):** No target analytes were detected above the reporting limits, indicating that the procedure was free from contamination. Copper and Antimony on sample MB-38967 and Antimony on MB-39049 were observed between the MDL and reporting limit.

**Laboratory Control Sample (LCSs):** All LCS recoveries were within control limits, indicating that the preparation and analysis were in control.

**Matrix Spike / Matrix Spike Duplicate (MS/MSD):** All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, with the following exceptions:

Sample ID	Analyte	QC	Explanation
1508586-001C	Aluminum	MS/MSD	Sample matrix interference
1508586-001D	Nitrate-Nitrite	MS/MSD	Sample matrix interference
1508586-003B	Aluminum	MS/MSD	Sample matrix interference
1508586-003B	Iron	MSD	Sample matrix interference
1508583-003B	Zinc	MSD	Sample matrix interference
1508586-003D	Phosphate, Total	MSD	Sample matrix interference



1508586-012C	Aluminum	MS/MSD	High analyte concentration
1508586-012C	Antimony	MS/MSD	Sample matrix interference
1508586-012C	Iron	MS/MSD	High analyte concentration

**Duplicate (DUP):** The parameters that require a duplicate analysis had RPDs within the control limits, with the following exceptions: the RPDs were outside of the control limits on sample 1508586-011A for Total Dissolved Solids and Total Suspended Solids due to suspected sample non-homogeneity or matrix interference.

**Post Digestion Spike (PDS):** The client request for QC 3+ data packages occurred after the analyses for these samples had already been completed. The PDS may not have been analyzed on the clients sample and/or may not have been analyzed for all reported analytes. The PDS percent recoveries were within the control limits.

**Serial Dilution (SD):** The client request for QC 3+ data packages occurred after the analyses for these samples had already been completed. The SD may not have been analyzed on the clients sample and/or may not have been analyzed for all reported analytes. The serial dilution RPDs were within the control limits, with the following exceptions: The analyte concentrations for Antimony, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Nickel, Thallium and Zinc on sample 1508586-001C5X and for Antimony, Beryllium, Cadmium, Chromium, Cobalt, Lead Molybdenum, Selenium, Silver, Thallium, Vanadium, and Zinc on sample 158586-003B5X were too low for serial dilution evaluation.

**Corrective Action:** None required.

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web: [www.awal-labs.com](http://www.awal-labs.com)

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



## SAMPLE SUMMARY

**Client:** Utah Division of Water Quality                                      **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Set ID:** 1508586  
**Date Received:** 8/29/2015 1535h

		<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date Collected</b>	<b>Matrix</b>	<b>Analysis</b>
3440 South 700 West Salt Lake City, UT 84119		1508586-001A	GK-SW-17	8/27/2015 1035h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
		1508586-001A	GK-SW-17	8/27/2015 1035h	Aqueous	Conductivity (Specific Conductance)
Phone: (801) 263-8686 Toll Free: (888) 263-8686 Fax: (801) 263-8687		1508586-001A	GK-SW-17	8/27/2015 1035h	Aqueous	pH
		1508586-001A	GK-SW-17	8/27/2015 1035h	Aqueous	Total Dissolved Solids, A2540C
		1508586-001A	GK-SW-17	8/27/2015 1035h	Aqueous	TSS
e-mail: <a href="mailto:awal@awal-labs.com">awal@awal-labs.com</a>		1508586-001A	GK-SW-17	8/27/2015 1035h	Aqueous	Anions, E300.0
		1508586-001B	GK-SW-17	8/27/2015 1035h	Aqueous	ICP Metals, Total
web: <a href="http://www.awal-labs.com">www.awal-labs.com</a>		1508586-001B	GK-SW-17	8/27/2015 1035h	Aqueous	ICPMS Metals, Total
		1508586-001B	GK-SW-17	8/27/2015 1035h	Aqueous	Hardness
		1508586-001B	GK-SW-17	8/27/2015 1035h	Aqueous	Mercury, Drinking Water
Kyle F. Gross Laboratory Director		1508586-001C	GK-SW-17	8/27/2015 1035h	Aqueous	ICPMS Metals, Dissolved
		1508586-001C	GK-SW-17	8/27/2015 1035h	Aqueous	Hardness
		1508586-001C	GK-SW-17	8/27/2015 1035h	Aqueous	ICP Metals, Dissolved
		1508586-001C	GK-SW-17	8/27/2015 1035h	Aqueous	Mercury, Drinking Water Dissolved
Jose Rocha QA Officer		1508586-001D	GK-SW-17	8/27/2015 1035h	Aqueous	Nitrite/Nitrate (as N), E353.2
		1508586-001D	GK-SW-17	8/27/2015 1035h	Aqueous	Total Phosphate, Aqueous
		1508586-002A	GK-SW-18	8/27/2015 1315h	Aqueous	Anions, E300.0
		1508586-002A	GK-SW-18	8/27/2015 1315h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
		1508586-002A	GK-SW-18	8/27/2015 1315h	Aqueous	Conductivity (Specific Conductance)
		1508586-002A	GK-SW-18	8/27/2015 1315h	Aqueous	pH
		1508586-002A	GK-SW-18	8/27/2015 1315h	Aqueous	Total Dissolved Solids, A2540C
		1508586-002A	GK-SW-18	8/27/2015 1315h	Aqueous	TSS
		1508586-002B	GK-SW-18	8/27/2015 1315h	Aqueous	Hardness
		1508586-002B	GK-SW-18	8/27/2015 1315h	Aqueous	Mercury, Drinking Water
		1508586-002B	GK-SW-18	8/27/2015 1315h	Aqueous	ICPMS Metals, Total
		1508586-002B	GK-SW-18	8/27/2015 1315h	Aqueous	ICP Metals, Total
		1508586-002C	GK-SW-18	8/27/2015 1315h	Aqueous	ICPMS Metals, Dissolved
		1508586-002C	GK-SW-18	8/27/2015 1315h	Aqueous	Hardness
		1508586-002C	GK-SW-18	8/27/2015 1315h	Aqueous	Mercury, Drinking Water Dissolved
	1508586-002C	GK-SW-18	8/27/2015 1315h	Aqueous	ICP Metals, Dissolved	
	1508586-002D	GK-SW-18	8/27/2015 1315h	Aqueous	Nitrite/Nitrate (as N), E353.2	

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.



**Client:** Utah Division of Water Quality  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Set ID:** 1508586  
**Date Received:** 8/29/2015 1535h

**Contact:** Lenora Sullivan

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Kyle F. Gross  
 Laboratory Director

Jose Rocha  
 QA Officer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1508586-002D	GK-SW-18	8/27/2015 1315h	Aqueous	Total Phosphate, Aqueous
1508586-003A	GK-SW-19	8/27/2015 1355h	Aqueous	Total Dissolved Solids, A2540C
1508586-003A	GK-SW-19	8/27/2015 1355h	Aqueous	TSS
1508586-003A	GK-SW-19	8/27/2015 1355h	Aqueous	pH
1508586-003A	GK-SW-19	8/27/2015 1355h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-003A	GK-SW-19	8/27/2015 1355h	Aqueous	Anions, E300.0
1508586-003A	GK-SW-19	8/27/2015 1355h	Aqueous	Conductivity (Specific Conductance)
1508586-003B	GK-SW-19	8/27/2015 1355h	Aqueous	ICPMS Metals, Total
1508586-003B	GK-SW-19	8/27/2015 1355h	Aqueous	Hardness
1508586-003B	GK-SW-19	8/27/2015 1355h	Aqueous	Mercury, Drinking Water
1508586-003B	GK-SW-19	8/27/2015 1355h	Aqueous	ICP Metals, Total
1508586-003C	GK-SW-19	8/27/2015 1355h	Aqueous	ICP Metals, Dissolved
1508586-003C	GK-SW-19	8/27/2015 1355h	Aqueous	Mercury, Drinking Water Dissolved
1508586-003C	GK-SW-19	8/27/2015 1355h	Aqueous	ICPMS Metals, Dissolved
1508586-003C	GK-SW-19	8/27/2015 1355h	Aqueous	Hardness
1508586-003D	GK-SW-19	8/27/2015 1355h	Aqueous	Total Phosphate, Aqueous
1508586-003D	GK-SW-19	8/27/2015 1355h	Aqueous	Nitrite/Nitrate (as N), E353.2
1508586-004A	GK-SW-20	8/27/2015 1450h	Aqueous	pH
1508586-004A	GK-SW-20	8/27/2015 1450h	Aqueous	TSS
1508586-004A	GK-SW-20	8/27/2015 1450h	Aqueous	Total Dissolved Solids, A2540C
1508586-004A	GK-SW-20	8/27/2015 1450h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-004A	GK-SW-20	8/27/2015 1450h	Aqueous	Anions, E300.0
1508586-004A	GK-SW-20	8/27/2015 1450h	Aqueous	Conductivity (Specific Conductance)
1508586-004B	GK-SW-20	8/27/2015 1450h	Aqueous	ICP Metals, Total
1508586-004B	GK-SW-20	8/27/2015 1450h	Aqueous	ICPMS Metals, Total
1508586-004B	GK-SW-20	8/27/2015 1450h	Aqueous	Hardness
1508586-004B	GK-SW-20	8/27/2015 1450h	Aqueous	Mercury, Drinking Water
1508586-004C	GK-SW-20	8/27/2015 1450h	Aqueous	Hardness
1508586-004C	GK-SW-20	8/27/2015 1450h	Aqueous	Mercury, Drinking Water Dissolved
1508586-004C	GK-SW-20	8/27/2015 1450h	Aqueous	ICPMS Metals, Dissolved
1508586-004C	GK-SW-20	8/27/2015 1450h	Aqueous	ICP Metals, Dissolved
1508586-004D	GK-SW-20	8/27/2015 1450h	Aqueous	Total Phosphate, Aqueous
1508586-004D	GK-SW-20	8/27/2015 1450h	Aqueous	Nitrite/Nitrate (as N), E353.2

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**Client:** Utah Division of Water Quality  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Set ID:** 1508586  
**Date Received:** 8/29/2015 1535h

**Contact:** Lenora Sullivan

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis	
1508586-005A	GK-SW-21	8/27/2015 1450h	Aqueous	Anions, E300.0	
3440 South 700 West Salt Lake City, UT 84119	1508586-005A	GK-SW-21	8/27/2015 1450h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
	1508586-005A	GK-SW-21	8/27/2015 1450h	Aqueous	Conductivity (Specific Conductance)
	1508586-005A	GK-SW-21	8/27/2015 1450h	Aqueous	pH
Phone: (801) 263-8686	1508586-005A	GK-SW-21	8/27/2015 1450h	Aqueous	Total Dissolved Solids, A2540C
Toll Free: (888) 263-8686	1508586-005A	GK-SW-21	8/27/2015 1450h	Aqueous	TSS
Fax: (801) 263-8687	1508586-005B	GK-SW-21	8/27/2015 1450h	Aqueous	Hardness
e-mail: <a href="mailto:awal@awal-labs.com">awal@awal-labs.com</a>	1508586-005B	GK-SW-21	8/27/2015 1450h	Aqueous	Mercury, Drinking Water
	1508586-005B	GK-SW-21	8/27/2015 1450h	Aqueous	ICP Metals, Total
web: <a href="http://www.awal-labs.com">www.awal-labs.com</a>	1508586-005B	GK-SW-21	8/27/2015 1450h	Aqueous	ICPMS Metals, Total
	1508586-005C	GK-SW-21	8/27/2015 1450h	Aqueous	ICP Metals, Dissolved
	1508586-005C	GK-SW-21	8/27/2015 1450h	Aqueous	ICPMS Metals, Dissolved
	1508586-005C	GK-SW-21	8/27/2015 1450h	Aqueous	Hardness
Kyle F. Gross Laboratory Director	1508586-005C	GK-SW-21	8/27/2015 1450h	Aqueous	Mercury, Drinking Water Dissolved
	1508586-005D	GK-SW-21	8/27/2015 1450h	Aqueous	Nitrite/Nitrate (as N), E353.2
Jose Rocha QA Officer	1508586-005D	GK-SW-21	8/27/2015 1450h	Aqueous	Total Phosphate, Aqueous
	1508586-006A	GK-SW-22	8/27/2015 1540h	Aqueous	pH
	1508586-006A	GK-SW-22	8/27/2015 1540h	Aqueous	Total Dissolved Solids, A2540C
	1508586-006A	GK-SW-22	8/27/2015 1540h	Aqueous	Conductivity (Specific Conductance)
	1508586-006A	GK-SW-22	8/27/2015 1540h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
	1508586-006A	GK-SW-22	8/27/2015 1540h	Aqueous	Anions, E300.0
	1508586-006A	GK-SW-22	8/27/2015 1540h	Aqueous	TSS
	1508586-006B	GK-SW-22	8/27/2015 1540h	Aqueous	ICP Metals, Total
	1508586-006B	GK-SW-22	8/27/2015 1540h	Aqueous	ICPMS Metals, Total
	1508586-006B	GK-SW-22	8/27/2015 1540h	Aqueous	Hardness
	1508586-006B	GK-SW-22	8/27/2015 1540h	Aqueous	Mercury, Drinking Water
	1508586-006C	GK-SW-22	8/27/2015 1540h	Aqueous	ICP Metals, Dissolved
	1508586-006C	GK-SW-22	8/27/2015 1540h	Aqueous	ICPMS Metals, Dissolved
	1508586-006C	GK-SW-22	8/27/2015 1540h	Aqueous	Hardness
	1508586-006C	GK-SW-22	8/27/2015 1540h	Aqueous	Mercury, Drinking Water Dissolved
	1508586-006D	GK-SW-22	8/27/2015 1540h	Aqueous	Nitrite/Nitrate (as N), E353.2
	1508586-006D	GK-SW-22	8/27/2015 1540h	Aqueous	Total Phosphate, Aqueous

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**Client:** Utah Division of Water Quality  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Set ID:** 1508586  
**Date Received:** 8/29/2015 1535h

**Contact:** Lenora Sullivan

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Kyle F. Gross  
 Laboratory Director

Jose Rocha  
 QA Officer

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1508586-007A	GK-SW-23	8/28/2015 1025h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-007A	GK-SW-23	8/28/2015 1025h	Aqueous	Conductivity (Specific Conductance)
1508586-007A	GK-SW-23	8/28/2015 1025h	Aqueous	pH
1508586-007A	GK-SW-23	8/28/2015 1025h	Aqueous	Total Dissolved Solids, A2540C
1508586-007A	GK-SW-23	8/28/2015 1025h	Aqueous	TSS
1508586-007A	GK-SW-23	8/28/2015 1025h	Aqueous	Anions, E300.0
1508586-007B	GK-SW-23	8/28/2015 1025h	Aqueous	ICP Metals, Total
1508586-007B	GK-SW-23	8/28/2015 1025h	Aqueous	ICPMS Metals, Total
1508586-007B	GK-SW-23	8/28/2015 1025h	Aqueous	Hardness
1508586-007B	GK-SW-23	8/28/2015 1025h	Aqueous	Mercury, Drinking Water
1508586-007C	GK-SW-23	8/28/2015 1025h	Aqueous	ICPMS Metals, Dissolved
1508586-007C	GK-SW-23	8/28/2015 1025h	Aqueous	Hardness
1508586-007C	GK-SW-23	8/28/2015 1025h	Aqueous	ICP Metals, Dissolved
1508586-007C	GK-SW-23	8/28/2015 1025h	Aqueous	Mercury, Drinking Water Dissolved
1508586-007D	GK-SW-23	8/28/2015 1025h	Aqueous	Nitrite/Nitrate (as N), E353.2
1508586-007D	GK-SW-23	8/28/2015 1025h	Aqueous	Total Phosphate, Aqueous
1508586-008A	GK-SW-24	8/28/2015 1400h	Aqueous	Anions, E300.0
1508586-008A	GK-SW-24	8/28/2015 1400h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-008A	GK-SW-24	8/28/2015 1400h	Aqueous	Conductivity (Specific Conductance)
1508586-008A	GK-SW-24	8/28/2015 1400h	Aqueous	pH
1508586-008A	GK-SW-24	8/28/2015 1400h	Aqueous	Total Dissolved Solids, A2540C
1508586-008A	GK-SW-24	8/28/2015 1400h	Aqueous	TSS
1508586-008B	GK-SW-24	8/28/2015 1400h	Aqueous	Hardness
1508586-008B	GK-SW-24	8/28/2015 1400h	Aqueous	Mercury, Drinking Water
1508586-008B	GK-SW-24	8/28/2015 1400h	Aqueous	ICPMS Metals, Total
1508586-008B	GK-SW-24	8/28/2015 1400h	Aqueous	ICP Metals, Total
1508586-008C	GK-SW-24	8/28/2015 1400h	Aqueous	ICPMS Metals, Dissolved
1508586-008C	GK-SW-24	8/28/2015 1400h	Aqueous	Hardness
1508586-008C	GK-SW-24	8/28/2015 1400h	Aqueous	Mercury, Drinking Water Dissolved
1508586-008C	GK-SW-24	8/28/2015 1400h	Aqueous	ICP Metals, Dissolved
1508586-008D	GK-SW-24	8/28/2015 1400h	Aqueous	Nitrite/Nitrate (as N), E353.2
1508586-008D	GK-SW-24	8/28/2015 1400h	Aqueous	Total Phosphate, Aqueous
1508586-009A	GK-SW-25	8/28/2015 1400h	Aqueous	Total Dissolved Solids, A2540C

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**Client:** Utah Division of Water Quality  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Set ID:** 1508586  
**Date Received:** 8/29/2015 1535h

**Contact:** Lenora Sullivan

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1508586-009A	GK-SW-25	8/28/2015 1400h	Aqueous	TSS
1508586-009A	GK-SW-25	8/28/2015 1400h	Aqueous	pH
1508586-009A	GK-SW-25	8/28/2015 1400h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-009A	GK-SW-25	8/28/2015 1400h	Aqueous	Anions, E300.0
1508586-009A	GK-SW-25	8/28/2015 1400h	Aqueous	Conductivity (Specific Conductance)
1508586-009B	GK-SW-25	8/28/2015 1400h	Aqueous	ICPMS Metals, Total
1508586-009B	GK-SW-25	8/28/2015 1400h	Aqueous	Hardness
1508586-009B	GK-SW-25	8/28/2015 1400h	Aqueous	Mercury, Drinking Water
1508586-009B	GK-SW-25	8/28/2015 1400h	Aqueous	ICP Metals, Total
1508586-009C	GK-SW-25	8/28/2015 1400h	Aqueous	ICP Metals, Dissolved
1508586-009C	GK-SW-25	8/28/2015 1400h	Aqueous	Mercury, Drinking Water Dissolved
1508586-009C	GK-SW-25	8/28/2015 1400h	Aqueous	ICPMS Metals, Dissolved
1508586-009C	GK-SW-25	8/28/2015 1400h	Aqueous	Hardness
1508586-009D	GK-SW-25	8/28/2015 1400h	Aqueous	Total Phosphate, Aqueous
1508586-009D	GK-SW-25	8/28/2015 1400h	Aqueous	Nitrite/Nitrate (as N), E353.2
1508586-010A	GK-SW-26	8/28/2015 1445h	Aqueous	TSS
1508586-010A	GK-SW-26	8/28/2015 1445h	Aqueous	Total Dissolved Solids, A2540C
1508586-010A	GK-SW-26	8/28/2015 1445h	Aqueous	pH
1508586-010A	GK-SW-26	8/28/2015 1445h	Aqueous	Anions, E300.0
1508586-010A	GK-SW-26	8/28/2015 1445h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-010A	GK-SW-26	8/28/2015 1445h	Aqueous	Conductivity (Specific Conductance)
1508586-010B	GK-SW-26	8/28/2015 1445h	Aqueous	ICP Metals, Total
1508586-010B	GK-SW-26	8/28/2015 1445h	Aqueous	ICPMS Metals, Total
1508586-010B	GK-SW-26	8/28/2015 1445h	Aqueous	Hardness
1508586-010B	GK-SW-26	8/28/2015 1445h	Aqueous	Mercury, Drinking Water
1508586-010C	GK-SW-26	8/28/2015 1445h	Aqueous	Hardness
1508586-010C	GK-SW-26	8/28/2015 1445h	Aqueous	Mercury, Drinking Water Dissolved
1508586-010C	GK-SW-26	8/28/2015 1445h	Aqueous	ICPMS Metals, Dissolved
1508586-010C	GK-SW-26	8/28/2015 1445h	Aqueous	ICP Metals, Dissolved
1508586-010D	GK-SW-26	8/28/2015 1445h	Aqueous	Total Phosphate, Aqueous
1508586-010D	GK-SW-26	8/28/2015 1445h	Aqueous	Nitrite/Nitrate (as N), E353.2
1508586-011A	GK-SW-27	8/28/2015 1535h	Aqueous	Anions, E300.0

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



**Client:** Utah Division of Water Quality  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Set ID:** 1508586  
**Date Received:** 8/29/2015 1535h

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Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1508586-011A	GK-SW-27	8/28/2015 1535h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-011A	GK-SW-27	8/28/2015 1535h	Aqueous	Conductivity (Specific Conductance)
1508586-011A	GK-SW-27	8/28/2015 1535h	Aqueous	pH
1508586-011A	GK-SW-27	8/28/2015 1535h	Aqueous	Total Dissolved Solids, A2540C
1508586-011A	GK-SW-27	8/28/2015 1535h	Aqueous	TSS
1508586-011B	GK-SW-27	8/28/2015 1535h	Aqueous	Hardness
1508586-011B	GK-SW-27	8/28/2015 1535h	Aqueous	Mercury, Drinking Water
1508586-011B	GK-SW-27	8/28/2015 1535h	Aqueous	ICP Metals, Total
1508586-011B	GK-SW-27	8/28/2015 1535h	Aqueous	ICPMS Metals, Total
1508586-011C	GK-SW-27	8/28/2015 1535h	Aqueous	ICP Metals, Dissolved
1508586-011C	GK-SW-27	8/28/2015 1535h	Aqueous	ICPMS Metals, Dissolved
1508586-011C	GK-SW-27	8/28/2015 1535h	Aqueous	Hardness
1508586-011C	GK-SW-27	8/28/2015 1535h	Aqueous	Mercury, Drinking Water Dissolved
1508586-011D	GK-SW-27	8/28/2015 1535h	Aqueous	Nitrite/Nitrate (as N), E353.2
1508586-011D	GK-SW-27	8/28/2015 1535h	Aqueous	Total Phosphate, Aqueous
1508586-012A	GK-SW-28	8/28/2015 1625h	Aqueous	pH
1508586-012A	GK-SW-28	8/28/2015 1625h	Aqueous	Total Dissolved Solids, A2540C
1508586-012A	GK-SW-28	8/28/2015 1625h	Aqueous	Conductivity (Specific Conductance)
1508586-012A	GK-SW-28	8/28/2015 1625h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, A2320B
1508586-012A	GK-SW-28	8/28/2015 1625h	Aqueous	Anions, E300.0
1508586-012A	GK-SW-28	8/28/2015 1625h	Aqueous	TSS
1508586-012B	GK-SW-28	8/28/2015 1625h	Aqueous	ICP Metals, Total
1508586-012B	GK-SW-28	8/28/2015 1625h	Aqueous	ICPMS Metals, Total
1508586-012B	GK-SW-28	8/28/2015 1625h	Aqueous	Hardness
1508586-012B	GK-SW-28	8/28/2015 1625h	Aqueous	Mercury, Drinking Water
1508586-012C	GK-SW-28	8/28/2015 1625h	Aqueous	ICP Metals, Dissolved
1508586-012C	GK-SW-28	8/28/2015 1625h	Aqueous	ICPMS Metals, Dissolved
1508586-012C	GK-SW-28	8/28/2015 1625h	Aqueous	Hardness
1508586-012C	GK-SW-28	8/28/2015 1625h	Aqueous	Mercury, Drinking Water Dissolved
1508586-012D	GK-SW-28	8/28/2015 1625h	Aqueous	Total Phosphate, Aqueous
1508586-012D	GK-SW-28	8/28/2015 1625h	Aqueous	Nitrite/Nitrate (as N), E353.2

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## SECTION 2.

### □ ANALYTICAL REPORTS

- The contract required detection limits (CRDL's) were met.
- There is an analytical report for each sample on the chain-of-custody.
- The results and dates on the analytical reports match the raw data.
- The information on the header of the analytical reports including the field ID's, the sample dates, and the received date match the chain-of-custody.

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Kyle F. Gross  
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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-001  
**Client Sample ID:** GK-SW-17  
**Collection Date:** 8/27/2015 1035h  
**Received Date:** 8/29/2015 1535h

**Contact:** Lenora Sullivan

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1453h	E200.7	0.237	1.00	61.3	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.0000366	0.00200	0.0000946	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.0000920	0.00200	0.0209	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/10/2015 1145h	E200.8	0.00269	0.0100	2.11	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.0000288	0.00200	0.00734	
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.000193	0.000500	0.00171	
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/15/2015 908h	E200.7	0.802	20.0	652	^
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.00154	0.00200	0.0363	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.0000434	0.00400	0.0405	
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.000692	0.00200	0.0387	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1549h	E200.7	0.0767	0.100	24.1	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.000264	0.00200	0.0667	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1453h	E200.7	0.294	10.0	115	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/10/2015 1145h	E200.8	0.00764	0.0100	3.31	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 832h	E245.1	0.0000892	0.000150	0.000143	J
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.000206	0.00200	< 0.00200	U
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.000754	0.00200	0.0819	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1549h	E200.7	0.247	1.00	22.8	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.0000634	0.00200	0.00133	J
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.0000244	0.00200	0.000229	J
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1453h	E200.7	0.330	10.0	50.5	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.0000242	0.00200	0.000212	J
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.000438	0.00440	0.0993	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1857h	E200.8	0.00476	0.00500	0.159	

^ - Reissue of a previously generated report. The Date Prepared has been updated. Information herein supersedes that of the previously issued reports.

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

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

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



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Kyle F. Gross  
 Laboratory Director

Jose Rocha  
 QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-002  
**Client Sample ID:** GK-SW-18  
**Collection Date:** 8/27/2015 1315h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1552h	E200.7	0.0237	0.100	<b>2.86</b>	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.0000366	0.00200	0.000129	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.0000920	0.00200	<b>0.00235</b>	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.000538	0.00200	<b>0.117</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.0000288	0.00200	0.000223	J
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/11/2015 1456h	E200.7	0.401	10.0	<b>70.4</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.00154	0.00200	<b>0.00249</b>	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.0000434	0.00400	0.00146	J
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.000692	0.00200	<b>0.00407</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1552h	E200.7	0.0767	0.100	<b>2.04</b>	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.000264	0.00200	<b>0.00227</b>	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1552h	E200.7	0.0294	1.00	<b>15.7</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.00153	0.00200	<b>0.102</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 838h	E245.1	0.0000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.000206	0.00200	0.00157	J
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.000754	0.00200	<b>0.00334</b>	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1552h	E200.7	0.247	1.00	<b>3.67</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.0000634	0.00200	0.000488	J
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1552h	E200.7	0.0330	1.00	<b>37.9</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.000438	0.00440	<b>0.00911</b>	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1900h	E200.8	0.00476	0.00500	<b>0.0110</b>	

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

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

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



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Kyle F. Gross  
 Laboratory Director

Jose Rocha  
 QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-003  
**Client Sample ID:** GK-SW-19  
**Collection Date:** 8/27/2015 1355h  
**Received Date:** 8/29/2015 1535h

### Analytical Results TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1554h	E200.7	0.0237	0.100	<b>1.25</b>	1
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.0000366	0.00200	0.000898	JSB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.0000920	0.00200	0.00181	J
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.000538	0.00200	<b>0.0936</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.0000288	0.00200	0.000119	JS
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.000193	0.000500	< 0.000500	US
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/11/2015 1458h	E200.7	0.401	10.0	<b>54.0</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.00154	0.00200	< 0.00200	US
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.0000434	0.00400	0.000647	JS
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.000692	0.00200	<b>0.00301</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1554h	E200.7	0.0767	0.100	<b>1.10</b>	1
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.000264	0.00200	0.00128	JS
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1554h	E200.7	0.0294	1.00	<b>13.7</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.00153	0.00200	<b>0.0479</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 839h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.000206	0.00200	0.00175	JS
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.000754	0.00200	0.00143	J
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1554h	E200.7	0.247	1.00	<b>2.99</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.0000634	0.00200	0.000476	JS
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.0000244	0.00200	0.0000536	JS
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1458h	E200.7	0.330	10.0	<b>36.4</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.0000242	0.00200	< 0.00200	US
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.000438	0.00440	<b>0.00568</b>	S
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1500h	E200.8	0.00476	0.00500	<b>0.00779</b>	\$1

1 - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.  
 B - This analyte was also detected in the method blank below the PQL.  
 J - Estimated value between the MDL and the reporting limit (PQL).  
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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-004  
**Client Sample ID:** GK-SW-20  
**Collection Date:** 8/27/2015 1450h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1600h	E200.7	0.0237	0.100	<b>22.2</b>	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.0000366	0.00200	0.000147	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.0000920	0.00200	<b>0.00839</b>	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.000538	0.00200	<b>0.474</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.0000288	0.00200	<b>0.00206</b>	
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.000193	0.000500	<b>0.000624</b>	
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/11/2015 1509h	E200.7	0.401	10.0	<b>90.0</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.00154	0.00200	<b>0.00966</b>	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.0000434	0.00400	<b>0.0118</b>	
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.000692	0.00200	<b>0.0317</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1600h	E200.7	0.0767	0.100	<b>19.2</b>	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.000264	0.00200	<b>0.0278</b>	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1600h	E200.7	0.0294	1.00	<b>22.3</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.00153	0.00200	<b>1.15</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 845h	E245.1	0.0000892	0.000150	0.0000483	J
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.000206	0.00200	0.000817	J
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.000754	0.00200	<b>0.0152</b>	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1600h	E200.7	0.247	1.00	<b>7.16</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.0000634	0.00200	0.000731	J
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.0000244	0.00200	0.000190	J
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1600h	E200.7	0.0330	1.00	<b>37.9</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.0000242	0.00200	0.0000846	J
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.000438	0.00440	<b>0.0307</b>	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1903h	E200.8	0.00476	0.00500	<b>0.102</b>	

*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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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-006  
**Client Sample ID:** GK-SW-22  
**Collection Date:** 8/27/2015 1540h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1521h	E200.7	0.237	1.00	<b>117</b>	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.0000366	0.00200	0.0000727	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.0000920	0.00200	<b>0.0316</b>	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/10/2015 1148h	E200.8	0.00269	0.0100	<b>3.01</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.0000288	0.00200	<b>0.0163</b>	
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.000193	0.000500	<b>0.00349</b>	
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/11/2015 1521h	E200.7	0.401	10.0	<b>307</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.00154	0.00200	<b>0.0657</b>	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.0000434	0.00400	<b>0.0786</b>	
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.000692	0.00200	<b>0.164</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1521h	E200.7	0.767	1.00	<b>116</b>	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.000264	0.00200	<b>0.185</b>	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1521h	E200.7	0.294	10.0	<b>71.6</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/10/2015 1148h	E200.8	0.00764	0.0100	<b>5.57</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 848h	E245.1	0.0000892	0.000150	<b>0.000468</b>	
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.000206	0.00200	0.00108	J
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.000754	0.00200	<b>0.105</b>	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1605h	E200.7	0.247	1.00	<b>22.9</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.0000634	0.00200	<b>0.00224</b>	
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.0000244	0.00200	0.00114	J
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1521h	E200.7	0.330	10.0	<b>53.4</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.0000242	0.00200	0.00116	J
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.000438	0.00440	<b>0.124</b>	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1909h	E200.8	0.00476	0.00500	<b>0.564</b>	

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

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





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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-008  
**Client Sample ID:** GK-SW-24  
**Collection Date:** 8/28/2015 1400h  
**Received Date:** 8/29/2015 1535h

### Analytical Results TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1525h	E200.7	0.237	1.00	<b>163</b>	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.0000366	0.00200	0.000203	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.0000920	0.00200	<b>0.0450</b>	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/10/2015 1155h	E200.8	0.00269	0.0100	<b>4.61</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.0000288	0.00200	<b>0.0140</b>	
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.000193	0.000500	<b>0.00626</b>	
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/14/2015 934h	E200.7	0.802	20.0	<b>1,070</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.00154	0.00200	<b>0.104</b>	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.0000434	0.00400	<b>0.0845</b>	
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.000692	0.00200	<b>0.138</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1525h	E200.7	0.767	1.00	<b>110</b>	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.000264	0.00200	<b>0.200</b>	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1525h	E200.7	0.294	10.0	<b>188</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/10/2015 1155h	E200.8	0.00764	0.0100	<b>7.39</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 852h	E245.1	0.0000892	0.000150	<b>0.000368</b>	
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.000206	0.00200	0.000841	J
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.000754	0.00200	<b>0.184</b>	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1617h	E200.7	0.247	1.00	<b>36.2</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.0000634	0.00200	<b>0.00566</b>	
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.0000244	0.00200	0.00151	J
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1525h	E200.7	0.330	10.0	<b>82.3</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.0000242	0.00200	0.00156	J
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.000438	0.00440	<b>0.141</b>	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1916h	E200.8	0.00476	0.00500	<b>0.588</b>	

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

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

<b>Client:</b>	Utah Division of Water Quality	<b>Contact:</b>	Lenora Sullivan
<b>Project:</b>	Gold King Mine Spill - San Juan River		
<b>Lab Sample ID:</b>	1508586-009		
<b>Client Sample ID:</b>	GK-SW-25		
<b>Collection Date:</b>	8/28/2015 1400h		
<b>Received Date:</b>	8/29/2015 1535h		

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1527h	E200.7	0.237	1.00	<b>141</b>	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.0000366	0.00200	0.000221	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.0000920	0.00200	<b>0.0419</b>	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/10/2015 1158h	E200.8	0.00269	0.0100	<b>4.29</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.0000288	0.00200	<b>0.0143</b>	
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.000193	0.000500	<b>0.00624</b>	
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/14/2015 936h	E200.7	0.802	20.0	<b>1.030</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.00154	0.00200	<b>0.0879</b>	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.0000434	0.00400	<b>0.0767</b>	
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.000692	0.00200	<b>0.119</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1527h	E200.7	0.767	1.00	<b>93.4</b>	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.000264	0.00200	<b>0.197</b>	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1527h	E200.7	0.294	10.0	<b>172</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/10/2015 1158h	E200.8	0.00764	0.0100	<b>6.98</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 854h	E245.1	0.0000892	0.000150	<b>0.000473</b>	
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.000206	0.00200	0.000769	J
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.000754	0.00200	<b>0.166</b>	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1619h	E200.7	0.247	1.00	<b>31.1</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.0000634	0.00200	<b>0.00530</b>	
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.0000244	0.00200	0.00150	J
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1527h	E200.7	0.330	10.0	<b>81.3</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.0000242	0.00200	0.00134	J
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.000438	0.00440	<b>0.128</b>	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1919h	E200.8	0.00476	0.00500	<b>0.520</b>	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-010  
**Client Sample ID:** GK-SW-26  
**Collection Date:** 8/28/2015 1445h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1529h	E200.7	0.237	1.00	<b>125</b>	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.0000366	0.00200	0.000111	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.0000920	0.00200	<b>0.0318</b>	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/10/2015 1201h	E200.8	0.00269	0.0100	<b>3.63</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.0000288	0.00200	<b>0.0171</b>	
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.000193	0.000500	<b>0.00450</b>	
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/11/2015 1529h	E200.7	0.401	10.0	<b>391</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.00154	0.00200	<b>0.0695</b>	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.0000434	0.00400	<b>0.0838</b>	
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.000692	0.00200	<b>0.180</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1529h	E200.7	0.767	1.00	<b>115</b>	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.000264	0.00200	<b>0.238</b>	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1529h	E200.7	0.294	10.0	<b>85.4</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/10/2015 1201h	E200.8	0.00764	0.0100	<b>6.80</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 855h	E245.1	0.0000892	0.000150	<b>0.000560</b>	
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.000206	0.00200	0.000924	J
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.000754	0.00200	<b>0.114</b>	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1621h	E200.7	0.247	1.00	<b>23.5</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.0000634	0.00200	<b>0.00221</b>	
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.0000244	0.00200	0.00159	J
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1529h	E200.7	0.330	10.0	<b>55.6</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.0000242	0.00200	0.00103	J
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.000438	0.00440	<b>0.131</b>	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1922h	E200.8	0.00476	0.00500	<b>0.738</b>	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-011  
**Client Sample ID:** GK-SW-27  
**Collection Date:** 8/28/2015 1535h  
**Received Date:** 8/29/2015 1535h

### Analytical Results TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/9/2015 1119h	9/11/2015 1531h	E200.7	0.237	1.00	<b>191</b>	
Antimony	7440-36-0	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.0000366	0.00200	0.000121	JB
Arsenic	7440-38-2	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.0000920	0.00200	<b>0.0401</b>	
Barium	7440-39-3	mg/L	9/9/2015 1119h	9/10/2015 1204h	E200.8	0.00269	0.0100	<b>4.52</b>	
Beryllium	7440-41-7	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.0000288	0.00200	<b>0.0220</b>	
Cadmium	7440-43-9	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.000193	0.000500	<b>0.00459</b>	
Calcium	7440-70-2	mg/L	9/9/2015 1119h	9/11/2015 1531h	E200.7	0.401	10.0	<b>389</b>	
Chromium	7440-47-3	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.00154	0.00200	<b>0.0938</b>	
Cobalt	7440-48-4	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.0000434	0.00400	<b>0.119</b>	
Copper	7440-50-8	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.000692	0.00200	<b>0.232</b>	
Iron	7439-89-6	mg/L	9/9/2015 1119h	9/11/2015 1531h	E200.7	0.767	1.00	<b>173</b>	
Lead	7439-92-1	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.000264	0.00200	<b>0.281</b>	
Magnesium	7439-95-4	mg/L	9/9/2015 1119h	9/11/2015 1531h	E200.7	0.294	10.0	<b>86.3</b>	
Manganese	7439-96-5	mg/L	9/9/2015 1119h	9/10/2015 1204h	E200.8	0.00764	0.0100	<b>8.39</b>	
Mercury	7439-97-6	mg/L	9/1/2015 1600h	9/2/2015 857h	E245.1	0.0000892	0.000150	<b>0.000678</b>	
Molybdenum	7439-98-7	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.000206	0.00200	0.000656	J
Nickel	7440-02-0	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.000754	0.00200	<b>0.141</b>	
Potassium	7440-09-7	mg/L	9/9/2015 1119h	9/11/2015 1623h	E200.7	0.247	1.00	<b>31.9</b>	
Selenium	7782-49-2	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.0000634	0.00200	<b>0.00248</b>	
Silver	7440-22-4	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.0000244	0.00200	0.00184	J
Sodium	7440-23-5	mg/L	9/9/2015 1119h	9/11/2015 1531h	E200.7	0.330	10.0	<b>64.0</b>	
Thallium	7440-28-0	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.0000242	0.00200	0.00142	J
Vanadium	7440-62-2	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.000438	0.00440	<b>0.167</b>	
Zinc	7440-66-6	mg/L	9/9/2015 1119h	9/9/2015 1935h	E200.8	0.00476	0.00500	<b>1.01</b>	

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

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QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-001  
**Client Sample ID:** GK-SW-17  
**Collection Date:** 8/27/2015 1035h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1359h	E200.7	0.0237	0.100	<b>0.707</b>	<sup>1</sup>
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.0000366	0.00200	0.000666	JSB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.0000920	0.00200	<b>0.00289</b>	
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.000538	0.00200	<b>0.165</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.0000288	0.00200	0.0000536	JS
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.000193	0.000500	< 0.000500	US
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1306h	E200.7	0.401	10.0	<b>44.2</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.00154	0.00200	< 0.00200	US
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.0000434	0.00400	0.000360	JS
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.000692	0.00200	<b>0.00256</b>	SB
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1359h	E200.7	0.0767	0.100	<b>0.296</b>	
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.000264	0.00200	0.000332	JS
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1359h	E200.7	0.0294	1.00	<b>11.7</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.00153	0.00200	<b>0.0101</b>	
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1119h	E245.1	0.0000892	0.000150	< 0.000150	US
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.000206	0.00200	<b>0.00238</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.000754	0.00200	0.00151	JS
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1359h	E200.7	0.247	1.00	<b>4.89</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.0000634	0.00200	0.00119	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.0000244	0.00200	0.0000607	JS
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1306h	E200.7	0.330	10.0	<b>45.4</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.0000242	0.00200	0.0000471	JS
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1744h	E200.8	0.000438	0.00440	<b>0.0126</b>	
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/11/2015 630h	E200.8	0.00476	0.00500	<b>0.00678</b>	S

\$ - Sample concentration too low for serial dilution evaluation.

<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.

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

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





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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-003  
**Client Sample ID:** GK-SW-19  
**Collection Date:** 8/27/2015 1355h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1408h	E200.7	0.0237	0.100	<b>0.293</b>	
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.0000366	0.00200	0.000400	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.0000920	0.00200	0.00137	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.000538	0.00200	<b>0.0815</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1326h	E200.7	0.401	10.0	<b>52.4</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.0000434	0.00400	0.000173	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.000692	0.00200	<b>0.00257</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1408h	E200.7	0.0767	0.100	<b>0.199</b>	
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1408h	E200.7	0.0294	1.00	<b>13.3</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.00153	0.00200	<b>0.00835</b>	
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1126h	E245.1	0.0000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.000206	0.00200	0.00188	J
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.000754	0.00200	0.000916	J
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1408h	E200.7	0.247	1.00	<b>2.85</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.0000634	0.00200	0.000579	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.0000244	0.00200	0.0000249	J
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1408h	E200.7	0.0330	1.00	<b>36.4</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1803h	E200.8	0.000438	0.00440	0.00310	J
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/11/2015 636h	E200.8	0.00476	0.00500	< 0.00500	U

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

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

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-004  
**Client Sample ID:** GK-SW-20  
**Collection Date:** 8/27/2015 1450h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1410h	E200.7	0.0237	0.100	<b>0.139</b>	
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.0000366	0.00200	0.000355	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.0000920	0.00200	0.00140	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.000538	0.00200	<b>0.0711</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1328h	E200.7	0.401	10.0	<b>47.9</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.0000434	0.00400	0.000188	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.000692	0.00200	<b>0.00206</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1410h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1410h	E200.7	0.0294	1.00	<b>10.4</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.00153	0.00200	<b>0.00395</b>	
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1131h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.000206	0.00200	<b>0.00209</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1410h	E200.7	0.247	1.00	<b>2.76</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.0000634	0.00200	0.000711	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1410h	E200.7	0.0330	1.00	<b>36.6</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.000438	0.00440	0.00267	J
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/10/2015 1806h	E200.8	0.00476	0.00500	< 0.00500	U

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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-005  
**Client Sample ID:** GK-SW-21  
**Collection Date:** 8/27/2015 1450h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1412h	E200.7	0.0237	0.100	0.0442	J
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.0000366	0.00200	0.000313	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.0000920	0.00200	0.00139	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.000538	0.00200	<b>0.0702</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.000193	0.000500	0.000303	J
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1330h	E200.7	0.401	10.0	<b>48.2</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.0000434	0.00400	0.000161	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.000692	0.00200	<b>0.00239</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1412h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1412h	E200.7	0.0294	1.00	<b>10.5</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.00153	0.00200	0.00199	J
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1133h	E245.1	0.0000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.000206	0.00200	<b>0.00207</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1412h	E200.7	0.247	1.00	<b>2.75</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.0000634	0.00200	0.000725	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1412h	E200.7	0.0330	1.00	<b>36.8</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.000438	0.00440	0.00257	J
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/10/2015 1818h	E200.8	0.00476	0.00500	< 0.00500	U

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## **INORGANIC ANALYTICAL REPORT**

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-006  
**Client Sample ID:** GK-SW-22  
**Collection Date:** 8/27/2015 1540h  
**Received Date:** 8/29/2015 1535h

### **Analytical Results**

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1414h	E200.7	0.0237	0.100	<b>0.798</b>	
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.0000366	0.00200	0.000335	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.0000920	0.00200	0.00101	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.000538	0.00200	<b>0.121</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.0000288	0.00200	0.0000635	J
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1332h	E200.7	0.401	10.0	<b>65.9</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.0000434	0.00400	0.000383	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.000692	0.00200	<b>0.00330</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1414h	E200.7	0.0767	0.100	<b>0.605</b>	
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.000264	0.00200	0.000527	J
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1414h	E200.7	0.0294	1.00	<b>10.2</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.00153	0.00200	<b>0.0114</b>	
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1135h	E245.1	0.0000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.000206	0.00200	<b>0.00332</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.000754	0.00200	<b>0.00204</b>	
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1414h	E200.7	0.247	1.00	<b>4.58</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.0000634	0.00200	0.000943	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1332h	E200.7	0.330	10.0	<b>49.2</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1822h	E200.8	0.000438	0.00440	0.00341	J
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/11/2015 639h	E200.8	0.00476	0.00500	<b>0.00622</b>	

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-007  
**Client Sample ID:** GK-SW-23  
**Collection Date:** 8/28/2015 1025h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1424h	E200.7	0.0237	0.100	<b>0.493</b>	
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.0000366	0.00200	0.000493	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.0000920	0.00200	0.00156	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.000538	0.00200	<b>0.338</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1335h	E200.7	0.401	10.0	<b>239</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.0000434	0.00400	0.000266	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.000692	0.00200	<b>0.00282</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1424h	E200.7	0.0767	0.100	<b>0.216</b>	
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1424h	E200.7	0.0294	1.00	<b>35.5</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.00153	0.00200	<b>0.00782</b>	
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1137h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.000206	0.00200	<b>0.00311</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.000754	0.00200	0.00120	J
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1424h	E200.7	0.247	1.00	<b>7.19</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.0000634	0.00200	0.00130	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1335h	E200.7	0.330	10.0	<b>65.9</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.000438	0.00440	<b>0.00608</b>	
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/10/2015 1825h	E200.8	0.00476	0.00500	< 0.00500	U

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality      **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-008  
**Client Sample ID:** GK-SW-24  
**Collection Date:** 8/28/2015 1400h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1426h	E200.7	0.0237	0.100	< 0.100	U
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.0000366	0.00200	0.000635	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.0000920	0.00200	0.00120	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.000538	0.00200	<b>0.186</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1337h	E200.7	0.401	10.0	<b>73.3</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.0000434	0.00400	0.000103	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.000692	0.00200	<b>0.00286</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1426h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1426h	E200.7	0.0294	1.00	<b>15.9</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1139h	E245.1	0.0000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.000206	0.00200	<b>0.00412</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.000754	0.00200	0.00196	J
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1426h	E200.7	0.247	1.00	<b>5.10</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.0000634	0.00200	<b>0.00291</b>	
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1337h	E200.7	0.330	10.0	<b>70.9</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.000438	0.00440	<b>0.00445</b>	
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/10/2015 1828h	E200.8	0.00476	0.00500	< 0.00500	U

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-009  
**Client Sample ID:** GK-SW-25  
**Collection Date:** 8/28/2015 1400h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

<u>Compound</u>	<u>CAS</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method Used</u>	<u>MDL</u>	<u>Reporting Limit</u>	<u>Analytical Result</u>	<u>Qual</u>
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1428h	E200.7	0.0237	0.100	< 0.100	U
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.0000366	0.00200	0.000360	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.0000920	0.00200	0.00119	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.000538	0.00200	<b>0.185</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1339h	E200.7	0.401	10.0	<b>74.3</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.0000434	0.00400	0.0000969	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.000692	0.00200	<b>0.00294</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1428h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1428h	E200.7	0.0294	1.00	<b>15.9</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1140h	E245.1	0.0000892	0.000150	0.0000100	J
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.000206	0.00200	<b>0.00411</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.000754	0.00200	0.00141	J
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1428h	E200.7	0.247	1.00	<b>5.14</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.0000634	0.00200	<b>0.00297</b>	
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1339h	E200.7	0.330	10.0	<b>71.7</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.000438	0.00440	<b>0.00445</b>	
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/10/2015 1831h	E200.8	0.00476	0.00500	< 0.00500	U

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-010  
**Client Sample ID:** GK-SW-26  
**Collection Date:** 8/28/2015 1445h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1430h	E200.7	0.0237	0.100	< 0.100	U
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.0000366	0.00200	0.000370	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.0000920	0.00200	0.000797	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.000538	0.00200	<b>0.151</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1341h	E200.7	0.401	10.0	<b>85.6</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.0000434	0.00400	0.000114	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.000692	0.00200	<b>0.00328</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1430h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1430h	E200.7	0.0294	1.00	<b>14.3</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1142h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.000206	0.00200	<b>0.00305</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.000754	0.00200	0.00121	J
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1430h	E200.7	0.247	1.00	<b>5.25</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.0000634	0.00200	0.000864	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1341h	E200.7	0.330	10.0	<b>51.3</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.000438	0.00440	0.00202	J
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/10/2015 1834h	E200.8	0.00476	0.00500	< 0.00500	U

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality      **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-011  
**Client Sample ID:** GK-SW-27  
**Collection Date:** 8/28/2015 1535h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	9/2/2015 1304h	9/11/2015 1433h	E200.7	0.0237	0.100	<b>0.487</b>	
Antimony	7440-36-0	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.0000366	0.00200	0.000321	JB
Arsenic	7440-38-2	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.0000920	0.00200	0.00109	J
Barium	7440-39-3	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.000538	0.00200	<b>0.161</b>	
Beryllium	7440-41-7	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.0000288	0.00200	0.0000427	J
Cadmium	7440-43-9	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	9/2/2015 1304h	9/11/2015 1343h	E200.7	0.401	10.0	<b>95.0</b>	
Chromium	7440-47-3	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.0000434	0.00400	0.000316	J
Copper	7440-50-8	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.000692	0.00200	<b>0.00404</b>	B
Iron	7439-89-6	mg/L	9/2/2015 1304h	9/11/2015 1433h	E200.7	0.0767	0.100	<b>0.414</b>	
Lead	7439-92-1	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.000264	0.00200	0.000368	J
Magnesium	7439-95-4	mg/L	9/2/2015 1304h	9/11/2015 1433h	E200.7	0.0294	1.00	<b>11.4</b>	
Manganese	7439-96-5	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.00153	0.00200	<b>0.0115</b>	
Mercury	7439-97-6	mg/L	9/4/2015 1500h	9/8/2015 1144h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.000206	0.00200	<b>0.00267</b>	
Nickel	7440-02-0	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.000754	0.00200	0.00162	J
Potassium	7440-09-7	mg/L	9/2/2015 1304h	9/11/2015 1433h	E200.7	0.247	1.00	<b>6.46</b>	
Selenium	7782-49-2	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.0000634	0.00200	0.000793	J
Silver	7440-22-4	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	9/2/2015 1304h	9/11/2015 1343h	E200.7	0.330	10.0	<b>60.3</b>	
Thallium	7440-28-0	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	9/2/2015 1304h	9/10/2015 1837h	E200.8	0.000438	0.00440	0.00278	J
Zinc	7440-66-6	mg/L	9/2/2015 1304h	9/11/2015 642h	E200.8	0.00476	0.00500	<b>0.191</b>	

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Kyle F. Gross  
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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-001  
**Client Sample ID:** GK-SW-17  
**Collection Date:** 8/27/2015 1035h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>125</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>125</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		9/8/2015 1430h	E300.0	0.0751	1.00	<b>14.4</b>	
Conductivity		µmhos/cm		9/2/2015 902h	SM2510B	0.436	2.00	<b>723</b>	
Hardness (as CaCO <sub>3</sub> )		mg/L		9/14/2015 1100h	SM2340B	10.0	10.0	<b>2,100</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		9/14/2015 728h	SM2340B	10.0	10.0	<b>158</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		9/9/2015 1405h	E353.2	0.00833	0.0100	< 0.0100	U <sup>1</sup>
pH @ 25° C		pH Units		8/31/2015 2031h	SM4500-H+B	1.00	1.00	<b>8.56</b>	H
Phosphate, Total (as P)	7723-14-0	mg/L	9/4/2015 1140h	9/9/2015 1213h	SM4500-P-F	0.0212	0.0500	<b>3.31</b>	
Sulfate	14808-79-8	mg/L		9/8/2015 1430h	E300.0	0.211	7.50	<b>132</b>	
Total Dissolved Solids		mg/L		9/1/2015 1220h	SM2540C	30.6	50.0	<b>570</b>	
Total Suspended Solids	TSS	mg/L		9/1/2015 1420h	SM2540D	142	150	<b>8,360</b>	

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

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-003  
**Client Sample ID:** GK-SW-19  
**Collection Date:** 8/27/2015 1355h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>117</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>117</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		9/8/2015 1538h	E300.0	0.0751	1.00	<b>13.3</b>	
Conductivity		µmhos/cm		9/2/2015 902h	SM2510B	0.436	2.00	<b>716</b>	
Hardness (as CaCO <sub>3</sub> )		mg/L		9/14/2015 1100h	SM2340B	10.0	10.0	<b>191</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		9/14/2015 728h	SM2340B	10.0	10.0	<b>186</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		9/9/2015 1415h	E353.2	0.00833	0.0100	<b>0.0945</b>	
pH @ 25° C		pH Units		8/31/2015 2031h	SM4500-H+B	1.00	1.00	<b>8.86</b>	H
Phosphate, Total (as P)	7723-14-0	mg/L	9/4/2015 1140h	9/9/2015 1218h	SM4500-P-F	0.0212	0.0500	0.0396	J <sup>1</sup>
Sulfate	14808-79-8	mg/L		9/8/2015 1538h	E300.0	0.211	7.50	<b>133</b>	
Total Dissolved Solids		mg/L		9/1/2015 1220h	SM2540C	12.3	20.0	<b>344</b>	
Total Suspended Solids	TSS	mg/L		9/1/2015 1420h	SM2540D	7.08	7.50	<b>133</b>	

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

H - Sample was received outside of the holding time.

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

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









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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-006  
**Client Sample ID:** GK-SW-22  
**Collection Date:** 8/27/2015 1540h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>108</b>	
Bicarbonate (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>108</b>	
Carbonate (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		9/8/2015 1628h	E300.0	0.0751	1.00	<b>14.3</b>	
Conductivity		µmhos/cm		9/2/2015 902h	SM2510B	0.436	2.00	<b>884</b>	
Hardness (as CaCO3)		mg/L		9/14/2015 1100h	SM2340B	10.0	10.0	<b>1,060</b>	
Hardness, Dissolved (as CaCO3)		mg/L		9/14/2015 728h	SM2340B	10.0	10.0	<b>207</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		9/9/2015 1419h	E353.2	0.00833	0.0100	< 0.0100	U
pH @ 25° C		pH Units		8/31/2015 2031h	SM4500-H+B	1.00	1.00	<b>8.06</b>	H
Phosphate, Total (as P)	7723-14-0	mg/L	9/4/2015 1140h	9/9/2015 1222h	SM4500-P-F	0.0212	0.0500	<b>4.65</b>	
Sulfate	14808-79-8	mg/L		9/8/2015 1628h	E300.0	0.211	7.50	<b>181</b>	
Total Dissolved Solids		mg/L		9/1/2015 1220h	SM2540C	30.6	50.0	<b>440</b>	
Total Suspended Solids	TSS	mg/L		9/1/2015 1420h	SM2540D	142	150	<b>18,300</b>	

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QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-007  
**Client Sample ID:** GK-SW-23  
**Collection Date:** 8/28/2015 1025h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>93.0</b>	
Bicarbonate (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>93.0</b>	
Carbonate (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		9/8/2015 1719h	E300.0	0.0751	1.00	<b>18.9</b>	
Conductivity		µmhos/cm		9/2/2015 902h	SM2510B	0.436	2.00	<b>2,150</b>	
Hardness (as CaCO3)		mg/L		9/14/2015 1100h	SM2340B	10.0	10.0	<b>2,910</b>	
Hardness, Dissolved (as CaCO3)		mg/L		9/14/2015 728h	SM2340B	10.0	10.0	<b>744</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		9/9/2015 1420h	E353.2	0.00833	0.0100	< 0.0100	U
pH @ 25° C		pH Units		8/31/2015 2031h	SM4500-H+B	1.00	1.00	<b>8.27</b>	H
Phosphate, Total (as P)	7723-14-0	mg/L	9/4/2015 1140h	9/9/2015 1222h	SM4500-P-F	0.0212	0.0500	<b>3.07</b>	
Sulfate	14808-79-8	mg/L		9/9/2015 1310h	E300.0	2.11	75.0	<b>795</b>	
Total Dissolved Solids		mg/L		9/1/2015 1220h	SM2540C	30.6	50.0	<b>1,310</b>	
Total Suspended Solids	TSS	mg/L		9/1/2015 1420h	SM2540D	142	150	<b>7,180</b>	

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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-008  
**Client Sample ID:** GK-SW-24  
**Collection Date:** 8/28/2015 1400h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>122</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>122</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		9/8/2015 1736h	E300.0	0.0751	1.00	<b>24.7</b>	
Conductivity		µmhos/cm		9/2/2015 902h	SM2510B	0.436	2.00	<b>1,100</b>	
Hardness (as CaCO <sub>3</sub> )		mg/L		9/14/2015 1100h	SM2340B	10.0	10.0	<b>3,460</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		9/14/2015 728h	SM2340B	10.0	10.0	<b>249</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		9/9/2015 1421h	E353.2	0.00833	0.0100	<b>0.136</b>	
pH @ 25° C		pH Units		8/31/2015 2031h	SM4500-H+B	1.00	1.00	<b>8.19</b>	H
Phosphate, Total (as P)	7723-14-0	mg/L	9/4/2015 1140h	9/9/2015 1235h	SM4500-P-F	0.212	0.500	<b>11.5</b>	
Sulfate	14808-79-8	mg/L		9/9/2015 1401h	E300.0	2.11	75.0	<b>262</b>	
Total Dissolved Solids		mg/L		9/1/2015 1220h	SM2540C	30.6	50.0	<b>730</b>	
Total Suspended Solids	TSS	mg/L		9/1/2015 1420h	SM2540D	142	150	<b>17,700</b>	

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QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality      **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-009  
**Client Sample ID:** GK-SW-25  
**Collection Date:** 8/28/2015 1400h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	120	
Bicarbonate (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	120	
Carbonate (as CaCO3)		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		9/8/2015 1753h	E300.0	0.0751	1.00	21.7	
Conductivity		µmhos/cm		9/2/2015 902h	SM2510B	0.436	2.00	1,120	
Hardness (as CaCO3)		mg/L		9/14/2015 1100h	SM2340B	10.0	10.0	3,280	
Hardness, Dissolved (as CaCO3)		mg/L		9/14/2015 728h	SM2340B	10.0	10.0	251	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		9/9/2015 1423h	E353.2	0.00833	0.0100	0.308	
pH @ 25° C		pH Units		8/31/2015 2031h	SM4500-H+B	1.00	1.00	8.17	H
Phosphate, Total (as P)	7723-14-0	mg/L	9/4/2015 1140h	9/9/2015 1236h	SM4500-P-F	0.212	0.500	11.1	
Sulfate	14808-79-8	mg/L		9/9/2015 1417h	E300.0	2.11	75.0	259	
Total Dissolved Solids		mg/L		9/1/2015 1220h	SM2540C	30.6	50.0	710	
Total Suspended Solids	TSS	mg/L		9/1/2015 1420h	SM2540D	142	150	19,500	

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine Spill - San Juan River  
**Lab Sample ID:** 1508586-010  
**Client Sample ID:** GK-SW-26  
**Collection Date:** 8/28/2015 1445h  
**Received Date:** 8/29/2015 1535h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>108</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	<b>108</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		9/2/2015 757h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		9/8/2015 1809h	E300.0	0.0751	1.00	<b>18.0</b>	
Conductivity		µmhos/cm		9/2/2015 902h	SM2510B	0.436	2.00	<b>1,030</b>	
Hardness (as CaCO <sub>3</sub> )		mg/L		9/14/2015 1100h	SM2340B	10.0	10.0	<b>1,330</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		9/14/2015 728h	SM2340B	10.0	10.0	<b>273</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		9/9/2015 1424h	E353.2	0.00833	0.0100	< 0.0100	U
pH @ 25° C		pH Units		8/31/2015 2031h	SM4500-H+B	1.00	1.00	<b>8.06</b>	H
Phosphate, Total (as P)	7723-14-0	mg/L	9/4/2015 1140h	9/9/2015 1237h	SM4500-P-F	0.212	0.500	<b>5.70</b>	
Sulfate	14808-79-8	mg/L		9/9/2015 1434h	E300.0	2.11	75.0	<b>264</b>	
Total Dissolved Solids		mg/L		9/1/2015 1220h	SM2540C	30.6	50.0	<b>580</b>	
Total Suspended Solids	TSS	mg/L		9/1/2015 1420h	SM2540D	142	150	<b>13,900</b>	

H - Sample was received outside of the holding time.

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









## SECTION 3.

### ❑ BATCH QC REPORTS

#### ❑ METHOD BLANK (MB) REPORTS

- ❑ Raw data matches method blank reports.
- ❑ Any results greater than the contract required detection limit are flagged.

#### ❑ LABORATORY CONTROL SAMPLE (LCS) REPORTS

- ❑ Raw data matches LCS reports.
- ❑ Any results outside the control limits are flagged.

#### ❑ MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD) REPORTS

- ❑ Raw data matches MS/MSD reports.
- ❑ Any results outside the control limits are flagged and qualified.

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: LCS-38966</b>													
Date Analyzed: 09/11/2015 1304h													
Test Code: 200.7-DIS													
Date Prepared: 09/02/2015 1304h													
Aluminum	0.996	mg/L	E200.7	0.0237	0.100	1.000	0	99.6	85 - 115				
Calcium	9.13	mg/L	E200.7	0.0401	1.00	10.00	0	91.3	85 - 115				
Iron	1.02	mg/L	E200.7	0.0767	0.100	1.000	0	102	85 - 115				
Magnesium	10.2	mg/L	E200.7	0.0294	1.00	10.00	0	102	85 - 115				
Potassium	10.2	mg/L	E200.7	0.247	1.00	10.00	0	102	85 - 115				
Sodium	10.1	mg/L	E200.7	0.0330	1.00	10.00	0	101	85 - 115				
<b>Lab Sample ID: LCS-39048</b>													
Date Analyzed: 09/11/2015 1451h													
Test Code: 200.7-W													
Date Prepared: 09/09/2015 1119h													
Aluminum	1.02	mg/L	E200.7	0.0237	0.100	1.000	0	102	85 - 115				
Calcium	9.23	mg/L	E200.7	0.0401	1.00	10.00	0	92.3	85 - 115				
Iron	1.00	mg/L	E200.7	0.0767	0.100	1.000	0	100	85 - 115				
Magnesium	10.2	mg/L	E200.7	0.0294	1.00	10.00	0	102	85 - 115				
Potassium	10.5	mg/L	E200.7	0.247	1.00	10.00	0	105	85 - 115				
Sodium	10.4	mg/L	E200.7	0.0330	1.00	10.00	0	104	85 - 115				
<b>Lab Sample ID: LCS-38967</b>													
Date Analyzed: 09/10/2015 1741h													
Test Code: 200.8-DIS													
Date Prepared: 09/02/2015 1304h													
Antimony	0.197	mg/L	E200.8	0.0000366	0.00200	0.2000	0	98.6	85 - 115				
Arsenic	0.202	mg/L	E200.8	0.0000920	0.00200	0.2000	0	101	85 - 115				
Barium	0.199	mg/L	E200.8	0.000538	0.00200	0.2000	0	99.5	85 - 115				
Beryllium	0.203	mg/L	E200.8	0.0000288	0.00200	0.2000	0	102	85 - 115				
Cadmium	0.198	mg/L	E200.8	0.000193	0.000500	0.2000	0	99.2	85 - 115				
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0	99.4	85 - 115				
Cobalt	0.197	mg/L	E200.8	0.0000434	0.00400	0.2000	0	98.4	85 - 115				
Copper	0.201	mg/L	E200.8	0.000692	0.00200	0.2000	0	101	85 - 115				
Lead	0.201	mg/L	E200.8	0.000264	0.00200	0.2000	0	100	85 - 115				
Manganese	0.198	mg/L	E200.8	0.00153	0.00200	0.2000	0	98.9	85 - 115				
Molybdenum	0.201	mg/L	E200.8	0.000206	0.00200	0.2000	0	101	85 - 115				
Nickel	0.198	mg/L	E200.8	0.000754	0.00200	0.2000	0	98.9	85 - 115				

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.



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Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: LCS-38967</b>													
Date Analyzed: 09/10/2015 1741h													
Test Code: 200.8-DIS													
Date Prepared: 09/02/2015 1304h													
Selenium	0.198	mg/L	E200.8	0.0000634	0.00200	0.2000	0	99.1	85 - 115				
Silver	0.197	mg/L	E200.8	0.0000244	0.00200	0.2000	0	98.3	85 - 115				
Thallium	0.194	mg/L	E200.8	0.0000242	0.00200	0.2000	0	97.0	85 - 115				
Vanadium	0.200	mg/L	E200.8	0.000438	0.00440	0.2000	0	100	85 - 115				
Zinc	0.996	mg/L	E200.8	0.00476	0.00500	1.000	0	99.6	85 - 115				
<b>Lab Sample ID: LCS-39049</b>													
Date Analyzed: 09/09/2015 1457h													
Test Code: 200.8-W													
Date Prepared: 09/09/2015 1119h													
Antimony	0.197	mg/L	E200.8	0.0000366	0.00200	0.2000	0	98.4	85 - 115				
Arsenic	0.217	mg/L	E200.8	0.0000920	0.00200	0.2000	0	108	85 - 115				
Barium	0.206	mg/L	E200.8	0.000538	0.00200	0.2000	0	103	85 - 115				
Beryllium	0.228	mg/L	E200.8	0.0000288	0.00200	0.2000	0	114	85 - 115				
Cadmium	0.206	mg/L	E200.8	0.000193	0.000500	0.2000	0	103	85 - 115				
Chromium	0.217	mg/L	E200.8	0.00154	0.00200	0.2000	0	109	85 - 115				
Cobalt	0.215	mg/L	E200.8	0.0000434	0.00400	0.2000	0	107	85 - 115				
Copper	0.215	mg/L	E200.8	0.000692	0.00200	0.2000	0	108	85 - 115				
Lead	0.208	mg/L	E200.8	0.000264	0.00200	0.2000	0	104	85 - 115				
Manganese	0.218	mg/L	E200.8	0.00153	0.00200	0.2000	0	109	85 - 115				
Molybdenum	0.219	mg/L	E200.8	0.000206	0.00200	0.2000	0	110	85 - 115				
Nickel	0.211	mg/L	E200.8	0.000754	0.00200	0.2000	0	105	85 - 115				
Selenium	0.216	mg/L	E200.8	0.0000634	0.00200	0.2000	0	108	85 - 115				
Silver	0.204	mg/L	E200.8	0.0000244	0.00200	0.2000	0	102	85 - 115				
Thallium	0.201	mg/L	E200.8	0.0000242	0.00200	0.2000	0	101	85 - 115				
Vanadium	0.219	mg/L	E200.8	0.000438	0.00440	0.2000	0	110	85 - 115				
Zinc	1.07	mg/L	E200.8	0.00476	0.00500	1.000	0	107	85 - 115				
<b>Lab Sample ID: LCS-38950</b>													
Date Analyzed: 09/02/2015 827h													
Test Code: HG-DW-245.1													
Date Prepared: 09/01/2015 1600h													
Mercury	0.00356	mg/L	E245.1	0.00000892	0.000150	0.003330	0	107	85 - 115				

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.



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-39015	Date Analyzed:	09/08/2015	1114h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	09/04/2015	1500h										
Mercury	0.00347	mg/L	E245.1	0.00000892	0.000150	0.003330	0	104	85 - 115				

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: MB-38966</b>													
Date Analyzed: 09/11/2015 1301h													
Test Code: 200.7-DIS													
Date Prepared: 09/02/2015 1304h													
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
<b>Lab Sample ID: MB-39048</b>													
Date Analyzed: 09/11/2015 1449h													
Test Code: 200.7-W													
Date Prepared: 09/09/2015 1119h													
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
<b>Lab Sample ID: MB-38967</b>													
Date Analyzed: 09/10/2015 1738h													
Test Code: 200.8-DIS													
Date Prepared: 09/02/2015 1304h													
Antimony	0.000132	mg/L	E200.8	0.0000366	0.00200								JB
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
Barium	< 0.00200	mg/L	E200.8	0.000538	0.00200								U
Beryllium	< 0.00200	mg/L	E200.8	0.0000288	0.00200								U
Cadmium	< 0.000500	mg/L	E200.8	0.000193	0.000500								U
Chromium	< 0.00200	mg/L	E200.8	0.00154	0.00200								U
Cobalt	< 0.00400	mg/L	E200.8	0.0000434	0.00400								U
Copper	0.00144	mg/L	E200.8	0.000692	0.00200								JB
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

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508586  
**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: MB-38967</b>													
Date Analyzed: 09/10/2015 1738h													
Test Code: 200.8-DIS													
Date Prepared: 09/02/2015 1304h													
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
<b>Lab Sample ID: MB-38967</b>													
Date Analyzed: 09/11/2015 627h													
Test Code: 200.8-DIS													
Date Prepared: 09/02/2015 1304h													
Zinc	< 0.00500	mg/L	E200.8	0.00476	0.00500								U
<b>Lab Sample ID: MB-39049</b>													
Date Analyzed: 09/09/2015 1454h													
Test Code: 200.8-W													
Date Prepared: 09/09/2015 1119h													
Antimony	0.000371	mg/L	E200.8	0.0000366	0.00200								JB
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
Barium	< 0.00200	mg/L	E200.8	0.000538	0.00200								U
Beryllium	< 0.00200	mg/L	E200.8	0.0000288	0.00200								U
Cadmium	< 0.000500	mg/L	E200.8	0.000193	0.000500								U
Chromium	< 0.00200	mg/L	E200.8	0.00154	0.00200								U
Cobalt	< 0.00400	mg/L	E200.8	0.0000434	0.00400								U
Copper	< 0.00200	mg/L	E200.8	0.000692	0.00200								U
Lead	< 0.00200	mg/L	E200.8	0.000264	0.00200								U
Manganese	< 0.00200	mg/L	E200.8	0.00153	0.00200								U
Molybdenum	< 0.00200	mg/L	E200.8	0.000206	0.00200								U
Nickel	< 0.00200	mg/L	E200.8	0.000754	0.00200								U
Selenium	< 0.00200	mg/L	E200.8	0.0000634	0.00200								U
Silver	< 0.00200	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

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508586  
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**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-38950	Date Analyzed:	09/02/2015	825h										
Test Code:	HG-DW-245.1	Date Prepared:	09/01/2015	1600h									
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U
<b>Lab Sample ID:</b> MB-39015	Date Analyzed:	09/08/2015	1112h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	09/04/2015	1500h									
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U

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

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

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



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-001CMS</b>													
Date Analyzed:		09/11/2015 1312h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Calcium	54.3	mg/L	E200.7	0.401	10.0	10.00	44.2	101	70 - 130				
Sodium	56.1	mg/L	E200.7	0.330	10.0	10.00	45.4	107	70 - 130				
<b>Lab Sample ID: 1508586-012CMS</b>													
Date Analyzed:		09/11/2015 1355h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Calcium	69.4	mg/L	E200.7	0.401	10.0	10.00	59.4	100	70 - 130				
Sodium	101	mg/L	E200.7	0.330	10.0	10.00	89.6	113	70 - 130				
<b>Lab Sample ID: 1508586-001CMS</b>													
Date Analyzed:		09/11/2015 1401h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Aluminum	2.25	mg/L	E200.7	0.0237	0.100	1.000	0.707	155	70 - 130				1
Iron	1.37	mg/L	E200.7	0.0767	0.100	1.000	0.296	107	70 - 130				
Magnesium	21.9	mg/L	E200.7	0.0294	1.00	10.00	11.7	103	70 - 130				
Potassium	15.2	mg/L	E200.7	0.247	1.00	10.00	4.89	103	70 - 130				
<b>Lab Sample ID: 1508586-012CMS</b>													
Date Analyzed:		09/11/2015 1437h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Aluminum	29.5	mg/L	E200.7	0.0237	0.100	1.000	20.7	879	70 - 130				2
Iron	20.1	mg/L	E200.7	0.0767	0.100	1.000	16.7	345	70 - 130				2
Magnesium	21.4	mg/L	E200.7	0.0294	1.00	10.00	10	114	70 - 130				
Potassium	18.8	mg/L	E200.7	0.247	1.00	10.00	7.89	109	70 - 130				
<b>Lab Sample ID: 1508586-003BMS</b>													
Date Analyzed:		09/11/2015 1505h											
Test Code:		200.7-W											
Date Prepared:		09/09/2015 1119h											
Calcium	63.4	mg/L	E200.7	0.401	10.0	10.00	54	94.4	70 - 130				
Sodium	46.3	mg/L	E200.7	0.330	10.0	10.00	36.4	98.4	70 - 130				
<b>Lab Sample ID: 1508586-003BMS</b>													
Date Analyzed:		09/11/2015 1556h											
Test Code:		200.7-W											
Date Prepared:		09/09/2015 1119h											
Aluminum	3.29	mg/L	E200.7	0.0237	0.100	1.000	1.25	204	70 - 130				1

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**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-003BMS</b>													
Date Analyzed:		09/11/2015 1556h											
Test Code:		200.7-W											
Date Prepared:		09/09/2015 1119h											
Iron	2.39	mg/L	E200.7	0.0767	0.100	1.000	1.1	129	70 - 130				
Magnesium	23.6	mg/L	E200.7	0.0294	1.00	10.00	13.7	99.7	70 - 130				
Potassium	13.3	mg/L	E200.7	0.247	1.00	10.00	2.99	103	70 - 130				
<b>Lab Sample ID: 1508586-001CMS</b>													
Date Analyzed:		09/10/2015 1753h											
Test Code:		200.8-DIS											
Date Prepared:		09/02/2015 1304h											
Antimony	0.186	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000666	92.6	75 - 125				
Arsenic	0.201	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00289	99.2	75 - 125				
Barium	0.356	mg/L	E200.8	0.000538	0.00200	0.2000	0.165	95.4	75 - 125				
Beryllium	0.198	mg/L	E200.8	0.0000288	0.00200	0.2000	0.0000536	98.9	75 - 125				
Cadmium	0.191	mg/L	E200.8	0.000193	0.000500	0.2000	0	95.5	75 - 125				
Chromium	0.194	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.9	75 - 125				
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00036	95.0	75 - 125				
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0.00256	96.7	75 - 125				
Lead	0.192	mg/L	E200.8	0.000264	0.00200	0.2000	0.000332	95.9	75 - 125				
Manganese	0.203	mg/L	E200.8	0.00153	0.00200	0.2000	0.0101	96.7	75 - 125				
Molybdenum	0.199	mg/L	E200.8	0.000206	0.00200	0.2000	0.00238	98.5	75 - 125				
Nickel	0.191	mg/L	E200.8	0.000754	0.00200	0.2000	0.00151	94.5	75 - 125				
Selenium	0.191	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00119	95.0	75 - 125				
Silver	0.192	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000607	95.7	75 - 125				
Thallium	0.188	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000471	93.8	75 - 125				
Vanadium	0.207	mg/L	E200.8	0.000438	0.00440	0.2000	0.0126	97.4	75 - 125				
Zinc	0.972	mg/L	E200.8	0.00476	0.00500	1.000	0.00678	96.5	75 - 125				
<b>Lab Sample ID: 1508586-012CMS</b>													
Date Analyzed:		09/10/2015 1843h											
Test Code:		200.8-DIS											
Date Prepared:		09/02/2015 1304h											
Antimony	0.0409	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000249	20.3	75 - 125				1
Arsenic	0.198	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00555	96.4	75 - 125				
Barium	0.541	mg/L	E200.8	0.000538	0.00200	0.2000	0.34	101	75 - 125				
Beryllium	0.194	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00158	96.1	75 - 125				

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-012CMS</b>		Date Analyzed:	09/10/2015 1843h										
Test Code: 200.8-DIS		Date Prepared:	09/02/2015 1304h										
Cadmium	0.197	mg/L	E200.8	0.000193	0.000500	0.2000	0.000261	98.4	75 - 125				
Chromium	0.212	mg/L	E200.8	0.00154	0.00200	0.2000	0.012	99.8	75 - 125				
Cobalt	0.205	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00901	97.9	75 - 125				
Copper	0.225	mg/L	E200.8	0.000692	0.00200	0.2000	0.0277	98.9	75 - 125				
Lead	0.211	mg/L	E200.8	0.000264	0.00200	0.2000	0.0157	97.5	75 - 125				
Manganese	0.621	mg/L	E200.8	0.00153	0.00200	0.2000	0.413	104	75 - 125				
Molybdenum	0.172	mg/L	E200.8	0.000206	0.00200	0.2000	0.00145	85.2	75 - 125				
Nickel	0.210	mg/L	E200.8	0.000754	0.00200	0.2000	0.0127	98.5	75 - 125				
Selenium	0.183	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000821	91.0	75 - 125				
Silver	0.193	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000852	96.7	75 - 125				
Thallium	0.190	mg/L	E200.8	0.0000242	0.00200	0.2000	0.00018	94.7	75 - 125				
Vanadium	0.227	mg/L	E200.8	0.000438	0.00440	0.2000	0.0262	100	75 - 125				
Zinc	1.06	mg/L	E200.8	0.00476	0.00500	1.000	0.0728	98.7	75 - 125				
<b>Lab Sample ID: 1508586-003BMS</b>		Date Analyzed:	09/09/2015 1509h										
Test Code: 200.8-W		Date Prepared:	09/09/2015 1119h										
Antimony	0.193	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000898	96.0	75 - 125				
Arsenic	0.217	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00181	108	75 - 125				
Barium	0.302	mg/L	E200.8	0.000538	0.00200	0.2000	0.0936	104	75 - 125				
Beryllium	0.223	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000119	111	75 - 125				
Cadmium	0.200	mg/L	E200.8	0.000193	0.000500	0.2000	0	99.8	75 - 125				
Chromium	0.213	mg/L	E200.8	0.00154	0.00200	0.2000	0	107	75 - 125				
Cobalt	0.210	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000647	105	75 - 125				
Copper	0.213	mg/L	E200.8	0.000692	0.00200	0.2000	0.00301	105	75 - 125				
Lead	0.204	mg/L	E200.8	0.000264	0.00200	0.2000	0.00128	101	75 - 125				
Manganese	0.265	mg/L	E200.8	0.00153	0.00200	0.2000	0.0479	108	75 - 125				
Molybdenum	0.219	mg/L	E200.8	0.000206	0.00200	0.2000	0.00175	109	75 - 125				
Nickel	0.207	mg/L	E200.8	0.000754	0.00200	0.2000	0.00143	103	75 - 125				
Selenium	0.211	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000476	105	75 - 125				

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Kyle F. Gross  
 Laboratory Director

Jose Rocha  
 QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508586  
**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508586-003BMS	Date Analyzed: 09/09/2015 1509h												
Test Code: 200.8-W	Date Prepared: 09/09/2015 1119h												
Silver	0.196	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000536	98.1	75 - 125				
Thallium	0.195	mg/L	E200.8	0.0000242	0.00200	0.2000	0	97.7	75 - 125				
Vanadium	0.223	mg/L	E200.8	0.000438	0.00440	0.2000	0.00568	109	75 - 125				
Zinc	1.07	mg/L	E200.8	0.00476	0.00500	1.000	0.00779	106	75 - 125				
<b>Lab Sample ID:</b> 1508586-001BMS	Date Analyzed: 09/02/2015 834h												
Test Code: HG-DW-245.1	Date Prepared: 09/01/2015 1600h												
Mercury	0.00373	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000143	108	80 - 120				
<b>Lab Sample ID:</b> 1508586-001CMS	Date Analyzed: 09/08/2015 1121h												
Test Code: HG-DW-DIS-245.1	Date Prepared: 09/04/2015 1500h												
Mercury	0.00343	mg/L	E245.1	0.00000892	0.000150	0.003330	0	103	85 - 115				

<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.



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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-001CMSD</b>													
Date Analyzed:		09/11/2015 1314h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Calcium	54.9	mg/L	E200.7	0.401	10.0	10.00	44.2	107	70 - 130	54.3	1.16	20	
Sodium	57.1	mg/L	E200.7	0.330	10.0	10.00	45.4	117	70 - 130	56.1	1.73	20	
<b>Lab Sample ID: 1508586-012CMSD</b>													
Date Analyzed:		09/11/2015 1357h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Calcium	68.3	mg/L	E200.7	0.401	10.0	10.00	59.4	88.6	70 - 130	69.4	1.71	20	
Sodium	99.1	mg/L	E200.7	0.330	10.0	10.00	89.6	95.0	70 - 130	101	1.77	20	
<b>Lab Sample ID: 1508586-001CMSD</b>													
Date Analyzed:		09/11/2015 1403h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Aluminum	2.28	mg/L	E200.7	0.0237	0.100	1.000	0.707	158	70 - 130	2.25	1.23	20	1
Iron	1.41	mg/L	E200.7	0.0767	0.100	1.000	0.296	111	70 - 130	1.37	2.83	20	
Magnesium	22.0	mg/L	E200.7	0.0294	1.00	10.00	11.7	103	70 - 130	21.9	0.322	20	
Potassium	15.6	mg/L	E200.7	0.247	1.00	10.00	4.89	107	70 - 130	15.2	2.88	20	
<b>Lab Sample ID: 1508586-012CMSD</b>													
Date Analyzed:		09/11/2015 1439h											
Test Code:		200.7-DIS											
Date Prepared:		09/02/2015 1304h											
Aluminum	35.5	mg/L	E200.7	0.0237	0.100	1.000	20.7	1,480	70 - 130	29.5	18.4	20	2
Iron	23.6	mg/L	E200.7	0.0767	0.100	1.000	16.7	694	70 - 130	20.1	15.9	20	2
Magnesium	21.8	mg/L	E200.7	0.0294	1.00	10.00	10	118	70 - 130	21.4	1.85	20	
Potassium	19.8	mg/L	E200.7	0.247	1.00	10.00	7.89	119	70 - 130	18.8	5.23	20	
<b>Lab Sample ID: 1508586-003BMSD</b>													
Date Analyzed:		09/11/2015 1507h											
Test Code:		200.7-W											
Date Prepared:		09/09/2015 1119h											
Calcium	63.0	mg/L	E200.7	0.401	10.0	10.00	54	90.2	70 - 130	63.4	0.668	20	
Sodium	46.4	mg/L	E200.7	0.330	10.0	10.00	36.4	100	70 - 130	46.3	0.357	20	
<b>Lab Sample ID: 1508586-003BMSD</b>													
Date Analyzed:		09/11/2015 1558h											
Test Code:		200.7-W											
Date Prepared:		09/09/2015 1119h											
Aluminum	3.41	mg/L	E200.7	0.0237	0.100	1.000	1.25	216	70 - 130	3.29	3.68	20	1

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Kyle F. Gross

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-003BMSD</b>													
Date Analyzed:	09/11/2015 1558h												
Test Code:	200.7-W												
Date Prepared:	09/09/2015 1119h												
Iron	2.49	mg/L	E200.7	0.0767	0.100	1.000	1.1	139	70 - 130	2.39	3.99	20	1
Magnesium	24.3	mg/L	E200.7	0.0294	1.00	10.00	13.7	107	70 - 130	23.6	2.86	20	
Potassium	13.8	mg/L	E200.7	0.247	1.00	10.00	2.99	108	70 - 130	13.3	4.24	20	
<b>Lab Sample ID: 1508586-001CMSD</b>													
Date Analyzed:	09/10/2015 1756h												
Test Code:	200.8-DIS												
Date Prepared:	09/02/2015 1304h												
Antimony	0.192	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000666	95.7	75 - 125	0.186	3.34	20	
Arsenic	0.209	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00289	103	75 - 125	0.201	3.79	20	
Barium	0.363	mg/L	E200.8	0.000538	0.00200	0.2000	0.165	99.0	75 - 125	0.356	2.00	20	
Beryllium	0.205	mg/L	E200.8	0.0000288	0.00200	0.2000	0.0000536	102	75 - 125	0.198	3.35	20	
Cadmium	0.198	mg/L	E200.8	0.000193	0.000500	0.2000	0	98.9	75 - 125	0.191	3.45	20	
Chromium	0.201	mg/L	E200.8	0.00154	0.00200	0.2000	0	101	75 - 125	0.194	3.73	20	
Cobalt	0.197	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00036	98.1	75 - 125	0.19	3.22	20	
Copper	0.202	mg/L	E200.8	0.000692	0.00200	0.2000	0.00256	99.9	75 - 125	0.196	3.16	20	
Lead	0.199	mg/L	E200.8	0.000264	0.00200	0.2000	0.000332	99.4	75 - 125	0.192	3.60	20	
Manganese	0.211	mg/L	E200.8	0.00153	0.00200	0.2000	0.0101	100	75 - 125	0.203	3.51	20	
Molybdenum	0.208	mg/L	E200.8	0.000206	0.00200	0.2000	0.00238	103	75 - 125	0.199	4.39	20	
Nickel	0.197	mg/L	E200.8	0.000754	0.00200	0.2000	0.00151	97.7	75 - 125	0.191	3.33	20	
Selenium	0.199	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00119	99.0	75 - 125	0.191	4.01	20	
Silver	0.197	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000607	98.6	75 - 125	0.192	2.98	20	
Thallium	0.195	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000471	97.3	75 - 125	0.188	3.68	20	
Vanadium	0.216	mg/L	E200.8	0.000438	0.00440	0.2000	0.0126	102	75 - 125	0.207	3.91	20	
Zinc	1.00	mg/L	E200.8	0.00476	0.00500	1.000	0.00678	99.4	75 - 125	0.972	2.97	20	
<b>Lab Sample ID: 1508586-012CMSD</b>													
Date Analyzed:	09/10/2015 1847h												
Test Code:	200.8-DIS												
Date Prepared:	09/02/2015 1304h												
Antimony	0.0462	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000249	23.0	75 - 125	0.0409	12.1	20	1
Arsenic	0.205	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00555	99.5	75 - 125	0.198	3.04	20	
Barium	0.546	mg/L	E200.8	0.000538	0.00200	0.2000	0.34	103	75 - 125	0.541	1.00	20	
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00158	97.1	75 - 125	0.194	0.966	20	

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-012CMSD</b>		Date Analyzed:	09/10/2015 1847h										
Test Code: 200.8-DIS		Date Prepared:	09/02/2015 1304h										
Cadmium	0.199	mg/L	E200.8	0.000193	0.000500	0.2000	0.000261	99.2	75 - 125	0.197	0.885	20	
Chromium	0.216	mg/L	E200.8	0.00154	0.00200	0.2000	0.012	102	75 - 125	0.212	2.08	20	
Cobalt	0.205	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00901	97.9	75 - 125	0.205	0.0177	20	
Copper	0.227	mg/L	E200.8	0.000692	0.00200	0.2000	0.0277	99.4	75 - 125	0.225	0.489	20	
Lead	0.214	mg/L	E200.8	0.000264	0.00200	0.2000	0.0157	99.1	75 - 125	0.211	1.46	20	
Manganese	0.620	mg/L	E200.8	0.00153	0.00200	0.2000	0.413	104	75 - 125	0.621	0.166	20	
Molybdenum	0.177	mg/L	E200.8	0.000206	0.00200	0.2000	0.00145	87.9	75 - 125	0.172	3.02	20	
Nickel	0.212	mg/L	E200.8	0.000754	0.00200	0.2000	0.0127	99.7	75 - 125	0.21	1.19	20	
Selenium	0.190	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000821	94.7	75 - 125	0.183	4.05	20	
Silver	0.191	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000852	95.4	75 - 125	0.193	1.31	20	
Thallium	0.191	mg/L	E200.8	0.0000242	0.00200	0.2000	0.00018	95.6	75 - 125	0.19	1.01	20	
Vanadium	0.235	mg/L	E200.8	0.000438	0.00440	0.2000	0.0262	104	75 - 125	0.227	3.51	20	
Zinc	1.07	mg/L	E200.8	0.00476	0.00500	1.000	0.0728	100	75 - 125	1.06	1.35	20	
<b>Lab Sample ID: 1508586-003BMSD</b>		Date Analyzed:	09/09/2015 1513h										
Test Code: 200.8-W		Date Prepared:	09/09/2015 1119h										
Antimony	0.202	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000898	101	75 - 125	0.193	4.88	20	
Arsenic	0.235	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00181	117	75 - 125	0.217	7.76	20	
Barium	0.311	mg/L	E200.8	0.000538	0.00200	0.2000	0.0936	109	75 - 125	0.302	2.89	20	
Beryllium	0.232	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000119	116	75 - 125	0.223	4.11	20	
Cadmium	0.209	mg/L	E200.8	0.000193	0.000500	0.2000	0	104	75 - 125	0.2	4.58	20	
Chromium	0.229	mg/L	E200.8	0.00154	0.00200	0.2000	0	114	75 - 125	0.213	6.98	20	
Cobalt	0.226	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000647	113	75 - 125	0.21	7.42	20	
Copper	0.229	mg/L	E200.8	0.000692	0.00200	0.2000	0.00301	113	75 - 125	0.213	7.21	20	
Lead	0.211	mg/L	E200.8	0.000264	0.00200	0.2000	0.00128	105	75 - 125	0.204	3.69	20	
Manganese	0.285	mg/L	E200.8	0.00153	0.00200	0.2000	0.0479	119	75 - 125	0.265	7.55	20	
Molybdenum	0.227	mg/L	E200.8	0.000206	0.00200	0.2000	0.00175	113	75 - 125	0.219	3.70	20	
Nickel	0.222	mg/L	E200.8	0.000754	0.00200	0.2000	0.00143	111	75 - 125	0.207	6.97	20	
Selenium	0.220	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000476	110	75 - 125	0.211	4.12	20	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508586  
**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-003BMSD</b>													
Date Analyzed:	09/09/2015 1513h												
Test Code:	200.8-W												
Date Prepared:	09/09/2015 1119h												
Silver	0.206	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000536	103	75 - 125	0.196	4.60	20	
Thallium	0.203	mg/L	E200.8	0.0000242	0.00200	0.2000	0	101	75 - 125	0.195	3.75	20	
Vanadium	0.239	mg/L	E200.8	0.000438	0.00440	0.2000	0.00568	117	75 - 125	0.223	6.97	20	
Zinc	1.28	mg/L	E200.8	0.00476	0.00500	1.000	0.00779	127	75 - 125	1.07	17.7	20	1
<b>Lab Sample ID: 1508586-001BMSD</b>													
Date Analyzed:	09/02/2015 836h												
Test Code:	HG-DW-245.1												
Date Prepared:	09/01/2015 1600h												
Mercury	0.00364	mg/L	E245.1	0.0000892	0.000150	0.003330	0.000143	105	80 - 120	0.00373	2.58	20	
<b>Lab Sample ID: 1508586-001CMSD</b>													
Date Analyzed:	09/08/2015 1123h												
Test Code:	HG-DW-DIS-245.1												
Date Prepared:	09/04/2015 1500h												
Mercury	0.00338	mg/L	E245.1	0.0000892	0.000150	0.003330	0	101	85 - 115	0.00343	1.57	20	

<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.



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-001ADUP</b>													
Date Analyzed: 09/02/2015 902h													
Test Code: COND-W-2510B													
Conductivity	720	µmhos/cm	SM2510B	0.436	2.00					723	0.416	5	
<b>Lab Sample ID: 1508586-011ADUP</b>													
Date Analyzed: 09/02/2015 902h													
Test Code: COND-W-2510B													
Conductivity	1,140	µmhos/cm	SM2510B	0.436	2.00					1150	0.175	5	
<b>Lab Sample ID: 1508586-009ADUP</b>													
Date Analyzed: 08/31/2015 2031h													
Test Code: PH-4500H+B													
pH @ 25° C	8.15	pH Units	SM4500-H+B	1.00	1.00					8.17	0.245	5	H
<b>Lab Sample ID: 1508586-012ADUP</b>													
Date Analyzed: 08/31/2015 2031h													
Test Code: PH-4500H+B													
pH @ 25° C	8.23	pH Units	SM4500-H+B	1.00	1.00					8.23	0	5	H
<b>Lab Sample ID: 1508586-001ADUP</b>													
Date Analyzed: 09/01/2015 1220h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	560	mg/L	SM2540C	30.6	50.0					570	1.77	5	
<b>Lab Sample ID: 1508586-011ADUP</b>													
Date Analyzed: 09/01/2015 1220h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	360	mg/L	SM2540C	30.6	50.0					610	51.5	5	@
<b>Lab Sample ID: 1508586-001ADUP</b>													
Date Analyzed: 09/01/2015 1420h													
Test Code: TSS-W-2540D													
Total Suspended Solids	8,580	mg/L	SM2540D	142	150					8360	2.60	5	
<b>Lab Sample ID: 1508586-011ADUP</b>													
Date Analyzed: 09/01/2015 1420h													
Test Code: TSS-W-2540D													
Total Suspended Solids	17,000	mg/L	SM2540D	142	150					16000	6.06	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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Laboratory Director

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508586  
**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: LCS-R82635</b> Date Analyzed: 09/08/2015 1129h													
Test Code: 300.0-W													
Chloride	5.21	mg/L	E300.0	0.00751	0.100	5.000	0	104	90 - 110				
Sulfate	4.98	mg/L	E300.0	0.0211	0.750	5.000	0	99.5	90 - 110				
<b>Lab Sample ID: LCS-R82673</b> Date Analyzed: 09/09/2015 1253h													
Test Code: 300.0-W													
Sulfate	5.10	mg/L	E300.0	0.0211	0.750	5.000	0	102	90 - 110				
<b>Lab Sample ID: LCS-R82399</b> Date Analyzed: 09/02/2015 757h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	49,900	mg/L	SM2320B	1.86	10.0	50,000	0	99.7	90 - 110				
<b>Lab Sample ID: LCS-R82401</b> Date Analyzed: 09/02/2015 902h													
Test Code: COND-W-2510B													
Conductivity	991	µmhos/cm	SM2510B	0.436	2.00	1,000	0	99.1	98 - 102				
<b>Lab Sample ID: LCS-R82650</b> Date Analyzed: 09/09/2015 1356h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.02	mg/L	E353.2	0.00833	0.0100	1.000	0	102	90 - 110				
<b>Lab Sample ID: LCS-R82331</b> Date Analyzed: 08/31/2015 2031h													
Test Code: PH-4500H+B													
pH @ 25° C	9.01	pH Units	SM4500-H+B	1.00	1.00	9.000	0	100	98 - 102				
<b>Lab Sample ID: LCS-39007</b> Date Analyzed: 09/09/2015 1208h													
Test Code: PO4-W-4500PF      Date Prepared: 09/04/2015 1140h													
Phosphate, Total (as P)	0.944	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0	94.4	90 - 110				
<b>Lab Sample ID: LCS-R82409</b> Date Analyzed: 09/01/2015 1220h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	220	mg/L	SM2540C	6.13	10.0	205.0	0	107	80 - 120				

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-R82411	Date Analyzed: 09/01/2015 1420h												
Test Code: TSS-W-2540D													
Total Suspended Solids	91.0	mg/L	SM2540D	2.83	3.00	100.0	0	91.0	80 - 120				

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: MB-R82635</b>													
Date Analyzed: 09/08/2015 1113h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.00751	0.100								U
Sulfate	< 0.750	mg/L	E300.0	0.0211	0.750								U
<b>Lab Sample ID: MB-R82673</b>													
Date Analyzed: 09/09/2015 1236h													
Test Code: 300.0-W													
Sulfate	< 0.750	mg/L	E300.0	0.0211	0.750								U
<b>Lab Sample ID: MB-R82399</b>													
Date Analyzed: 09/02/2015 757h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Bicarbonate (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Carbonate (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
<b>Lab Sample ID: MB-R82401</b>													
Date Analyzed: 09/02/2015 902h													
Test Code: COND-W-2510B													
Conductivity	< 2.00	µmhos/cm	SM2510B	0.436	2.00								U
<b>Lab Sample ID: MB-R82650</b>													
Date Analyzed: 09/09/2015 1354h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00833	0.0100								U
<b>Lab Sample ID: MB-39007</b>													
Date Analyzed: 09/09/2015 1207h													
Test Code: PO4-W-4500PF													
Date Prepared: 09/04/2015 1140h													
Phosphate, Total (as P)	< 0.0500	mg/L	SM4500-P-F	0.0212	0.0500								U
<b>Lab Sample ID: MB-R82409</b>													
Date Analyzed: 09/01/2015 1220h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	< 10.0	mg/L	SM2540C	6.13	10.0								U

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-R82411	Date Analyzed: 09/01/2015 1420h												
Test Code:	TSS-W-2540D												
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.83	3.00								U

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

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508586

**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-006AMS</b>													
Date Analyzed: 09/08/2015 1645h													
Test Code: 300.0-W													
Chloride	64.8	mg/L	E300.0	0.0751	1.00	50.00	14.3	101	90 - 110				
<b>Lab Sample ID: 1508586-005AMS</b>													
Date Analyzed: 09/08/2015 2205h													
Test Code: 300.0-W													
Chloride	62.8	mg/L	E300.0	0.0751	1.00	50.00	12.8	100	90 - 110				
Sulfate	167	mg/L	E300.0	0.211	7.50	50.00	118	99.2	90 - 110				
<b>Lab Sample ID: 1508586-007AMS</b>													
Date Analyzed: 09/09/2015 1327h													
Test Code: 300.0-W													
Sulfate	1,270	mg/L	E300.0	2.11	75.0	500.0	795	95.3	90 - 110				
<b>Lab Sample ID: 1508586-001AMS</b>													
Date Analyzed: 09/02/2015 757h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	223	mg/L	SM2320B	1.86	10.0	100.0	125	98.0	80 - 120				
<b>Lab Sample ID: 1508586-011AMS</b>													
Date Analyzed: 09/02/2015 757h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	201	mg/L	SM2320B	1.86	10.0	100.0	105	96.3	80 - 120				
<b>Lab Sample ID: 1508574-013DMS</b>													
Date Analyzed: 09/09/2015 1358h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.03	mg/L	E353.2	0.00833	0.0100	1.000	0	103	90 - 110				
<b>Lab Sample ID: 1508586-001DMS</b>													
Date Analyzed: 09/09/2015 1406h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.678	mg/L	E353.2	0.00833	0.0100	1.000	0	67.8	90 - 110				<sup>1</sup>
<b>Lab Sample ID: 1508586-003DMS</b>													
Date Analyzed: 09/09/2015 1219h													
Test Code: PO4-W-4500PF													
Date Prepared: 09/04/2015 1140h													
Phosphate, Total (as P)	0.960	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.0396	92.1	90 - 110				

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

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508586  
**Project:** Gold King Mine Spill - San Juan River

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508586-006AMSD</b>													
Date Analyzed: 09/08/2015 1702h													
Test Code: 300.0-W													
Chloride	65.1	mg/L	E300.0	0.0751	1.00	50.00	14.3	102	90 - 110	64.8	0.455	20	
<b>Lab Sample ID: 1508586-005AMSD</b>													
Date Analyzed: 09/08/2015 2223h													
Test Code: 300.0-W													
Chloride	62.6	mg/L	E300.0	0.0751	1.00	50.00	12.8	99.6	90 - 110	62.8	0.324	20	
Sulfate	166	mg/L	E300.0	0.211	7.50	50.00	118	96.8	90 - 110	167	0.731	20	
<b>Lab Sample ID: 1508586-007AMSD</b>													
Date Analyzed: 09/09/2015 1344h													
Test Code: 300.0-W													
Sulfate	1,270	mg/L	E300.0	2.11	75.0	500.0	795	95.9	90 - 110	1270	0.219	20	
<b>Lab Sample ID: 1508586-001AMSD</b>													
Date Analyzed: 09/02/2015 757h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO <sub>3</sub> )	221	mg/L	SM2320B	1.86	10.0	100.0	125	96.3	80 - 120	223	0.765	10	
<b>Lab Sample ID: 1508586-011AMSD</b>													
Date Analyzed: 09/02/2015 757h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO <sub>3</sub> )	203	mg/L	SM2320B	1.86	10.0	100.0	105	98.0	80 - 120	201	0.842	10	
<b>Lab Sample ID: 1508574-013DMSD</b>													
Date Analyzed: 09/09/2015 1400h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.01	mg/L	E353.2	0.00833	0.0100	1.000	0	101	90 - 110	1.03	2.06	10	
<b>Lab Sample ID: 1508586-001DMSD</b>													
Date Analyzed: 09/09/2015 1412h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.672	mg/L	E353.2	0.00833	0.0100	1.000	0	67.2	90 - 110	0.678	0.918	10	<sup>1</sup>
<b>Lab Sample ID: 1508586-003DMSD</b>													
Date Analyzed: 09/09/2015 1220h													
Test Code: PO4-W-4500PF													
Date Prepared: 09/04/2015 1140h													
Phosphate, Total (as P)	0.924	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.0396	88.5	90 - 110	0.96	3.82	10	<sup>1</sup>

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

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