

Kevin Okleberry Utah Division of Water Quality PO Box 144870 SLC, UT 84114

TEL: (801) 538-6329

RE: Tibble Fork Dam

3440 South 700 West Salt Lake City, UT 84119 Dear Kevin Okleberry: Lab Set ID: 1608508

American West Analytical Laboratories (AWAL) is accredited by The National

state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

American West Analytical Laboratories received sample(s) on 8/24/2016 for the analyses presented in the following report.

Phone: (801) 263-8686
Toll Free: (888) 263-8686

Fax: (801) 263-8687

e-mail: awal@awal-labs.com

web: www.awal-labs.com

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.

Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is

Kyle F. Gross Laboratory Director

Jose Rocha

QA Officer

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

Thank You,	
Approved by:	
	Laboratory Director or designee



# **Inorganic Case Narrative**

Client: Utah Division of Water Quality
Contact: Kevin Okleberry

Project: Tibble Fork Dam

**Lab Set ID:** 1608508

#### **Sample Receipt Information:**

methods stated on the analytical reports.

preserved.

3440 South 700 West Salt Lake City, UT 84119 Date of Receipt:8/24/2016Date(s) of Collection:8/24/2016Sample Condition:IntactC-O-C Discrepancies:None

Phone: (801) 263-8686 Toll Free: (888) 263-8686

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web: www.awal-labs.com

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

**Holding Time and Preservation Requirements:** The analysis and preparation for the samples were performed within the method holding times. The samples were properly

Preparation and Analysis Requirements: The samples were analyzed following the

Batch QC Requirements: MB, LCS, MS, MSD, RPD, DUP:

Kyle F. Gross Laboratory Director

Jose Rocha

QA Officer

**Method Blanks (MB):** No target analytes were detected above reporting limits, with the following exception: Zinc was observed above reporting limits in MB-44667. The method blank was acceptable, as the method blank results is less than 10% of the lowest reported sample concentration.

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

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

Sample ID	Analyte	QC	Explanation
1608508-002B	Aluminum	MS/MSD	Sample matrix interference
1608508-002B	Calcium	MS	High analyte concentration
1068508-002B	Iron	MS/MSD	High analyte concentration
1608508-002B	Silicon	MS/MSD	High analyte concentration

**Duplicate (DUP):** The parameters that required a duplicate analysis had RPDs within the control limits, with the following exceptions: the RPDs for Total Volatiles Solids on sample 1608508-001B and for Total Suspended Solids on sample 1608508-002C were outside of the control limits due to suspected sample non-homogeneity or matrix interference.

**Corrective Action:** None required.



**Contact:** Kevin Okleberry

Client: Utah Division of Water Quality

Project: Tibble Fork Dam
Lab Sample ID: 1608508-001
Client Sample ID: 5912810

**Collection Date:** 8/24/2016 1625h **Received Date:** 8/24/2016 1730h

Analytical Results TOTAL METALS

3440 South 700 West	Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Salt Lake City, UT 84119	Aluminum	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	0.100	2.37	
	Antimony	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.00495	
	Arsenic	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.0139	
Phone: (801) 263-8686	Barium	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.165	
	Beryllium	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.000500	0.000946	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/25/2016 1112h	8/26/2016 955h	E200.7	5.00	83.8	
	Chromium	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.00257	
web: www.awal-labs.com	Cobalt	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.0120	
	Iron	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	0.100	3.82	
Kyle F. Gross	Lead	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.0730	
Laboratory Director	Magnesium	mg/L	8/25/2016 1112h	8/26/2016 955h	E200.7	5.00	22.4	
	Manganese	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.239	
Jose Rocha	Mercury	mg/L	8/25/2016 1500h	8/26/2016 806h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.00252	
	Nickel	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	0.00515	
	Potassium	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	1.00	1.10	
	Selenium	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	0.500	9.50	٨
	Silver	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	1.00	2.69	
	Thallium	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/25/2016 1112h	8/26/2016 1053h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	0.00500	0.0620	
	Vanadium	mg/L	8/25/2016 1112h	8/25/2016 1739h	E200.7	0.00500	< 0.00500	
	Zinc	mg/L	8/25/2016 1112h	8/26/2016 1038h	E200.8	0.00500	0.106	В

 $<sup>^{\</sup>wedge}$  - The calculated result for Silica (SiO2) is 20.3 mg/L.

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



Client: Utah Division of Water Quality Contact: Kevin Okleberry

**Project:** Tibble Fork Dam **Lab Sample ID:** 1608508-002

Client Sample ID: American Fork River @ Timp Cave Natl Monument Office

**Collection Date:** 8/24/2016 1615h **Received Date:** 8/24/2016 1730h

Analytical Results TOTAL METALS

3440 South 700 West	Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Salt Lake City, UT 84119	Aluminum	mg/L	8/25/2016 1112h	8/25/2016 1744h	E200.7	0.100	2.61	1
	Antimony	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.00384	
	Arsenic	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.0120	
Dhono. (901) 262 9696	Barium	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.138	
Phone: (801) 263-8686	Beryllium	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/25/2016 1112h	8/25/2016 1744h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.000500	0.00132	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/25/2016 1112h	8/26/2016 957h	E200.7	5.00	90.3	2
	Chromium	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.00320	
web: www.awal-labs.com	Cobalt	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.0147	
	Iron	mg/L	8/25/2016 1112h	8/25/2016 1744h	E200.7	0.100	5.31	2
Kyle F. Gross	Lead	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.0937	
Laboratory Director	Magnesium	mg/L	8/25/2016 1112h	8/26/2016 957h	E200.7	5.00	22.8	
	Manganese	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.217	
Jose Rocha	Mercury	mg/L	8/25/2016 1500h	8/26/2016 811h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	< 0.00200	
Ç	Nickel	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	0.00673	
	Potassium	mg/L	8/25/2016 1112h	8/25/2016 1744h	E200.7	1.00	1.15	
	Selenium	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/25/2016 1112h	8/26/2016 957h	E200.7	2.50	6.66	^2
	Silver	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/25/2016 1112h	8/25/2016 1744h	E200.7	1.00	4.58	
	Thallium	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/25/2016 1112h	8/26/2016 1055h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/25/2016 1112h	8/25/2016 1744h	E200.7	0.00500	0.0580	
	Vanadium	mg/L	8/25/2016 1112h	8/25/2016 1744h	E200.7	0.00500	0.00536	
	Zinc	mg/L	8/25/2016 1112h	8/26/2016 1041h	E200.8	0.00500	0.154	В

 $<sup>^{\</sup>wedge}$  - The calculated result for Silica (SiO2) is 14.3 mg/L.

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

<sup>&</sup>lt;sup>2</sup> - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

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



Client: Utah Division of Water Quality

Project: Tibble Fork Dam
Lab Sample ID: 1608508-001
Client Sample ID: 5912810

**Collection Date:** 8/24/2016 1625h **Received Date:** 8/24/2016 1730h

**Analytical Results** 

DISSOLVED METALS

**Contact:** Kevin Okleberry

3440 South 700 West	Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Salt Lake City, UT 84119	Aluminum	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	0.100	< 0.100	_
	Antimony	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	0.00415	
	Arsenic	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	0.00646	
Dharas (901) 262 9696	Barium	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	0.130	
Phone: (801) 263-8686	Beryllium	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.000500	< 0.000500	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/25/2016 1112h	8/26/2016 1015h	E200.7	5.00	70.0	
	Chromium	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
web: www.awal-labs.com	Cobalt	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
	Iron	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	0.100	< 0.100	
Kyle F. Gross	Lead	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
Laboratory Director	Magnesium	mg/L	8/25/2016 1112h	8/26/2016 1015h	E200.7	5.00	19.4	
	Manganese	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	0.121	
Jose Rocha	Mercury	mg/L	8/25/2016 1500h	8/26/2016 831h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	0.00288	
	Nickel	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
	Potassium	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	1.00	< 1.00	
	Selenium	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	0.500	4.12	^
	Silver	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	1.00	2.56	
	Thallium	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	0.00500	< 0.00500	
	Vanadium	mg/L	8/25/2016 1112h	8/26/2016 1033h	E200.7	0.00500	< 0.00500	
	Zinc	mg/L	8/25/2016 1112h	8/26/2016 1000h	E200.8	0.00500	< 0.00500	

<sup>^ -</sup> The calculated result for Silica (SiO2) is 8.81 mg/L.

Analysis performed on a portion of the sample filtered at the laboratory upon receipt.



Client: Utah Division of Water Quality Contact: Kevin Okleberry

**Project:** Tibble Fork Dam **Lab Sample ID:** 1608508-002

Client Sample ID: American Fork River @ Timp Cave Natl Monument Office

**Collection Date:** 8/24/2016 1615h **Received Date:** 8/24/2016 1730h

**Analytical Results** 

DISSOLVED METALS

3440 South 700 West	Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Salt Lake City, UT 84119	Aluminum	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	0.100	< 0.100	
	Antimony	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	0.00248	
	Arsenic	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	0.00399	
Phone: (801) 263-8686	Barium	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	0.0952	
` '	Beryllium	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.000500	< 0.000500	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/25/2016 1112h	8/26/2016 1022h	E200.7	5.00	65.5	
	Chromium	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	< 0.00200	
web: www.awal-labs.com	Cobalt	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	0.00286	
	Iron	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	0.100	< 0.100	
Kyle F. Gross	Lead	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	< 0.00200	
Laboratory Director	Magnesium	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	1.00	17.5	
	Manganese	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	0.0429	
Jose Rocha	Mercury	mg/L	8/25/2016 1500h	8/26/2016 840h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	0.00224	
	Nickel	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	< 0.00200	
	Potassium	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	1.00	< 1.00	
	Selenium	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	0.500	3.76	^
	Silver	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	1.00	4.42	
	Thallium	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	0.00500	< 0.00500	
	Vanadium	mg/L	8/25/2016 1112h	8/26/2016 1042h	E200.7	0.00500	< 0.00500	
	Zinc	mg/L	8/25/2016 1112h	8/26/2016 1025h	E200.8	0.00500	0.00608	

<sup>^ -</sup> The calculated result for Silica (SiO2) is 8.05 mg/L.



**Client:** Utah Division of Water Quality **Contact:** Kevin Okleberry

**Project:** Tibble Fork Dam Lab Sample ID: 1608508-001 Client Sample ID: 5912810

**Collection Date:** 8/24/2016 1625h **Received Date:** 8/24/2016 1730h

#### **Analytical Results**

3440 South 700 West	Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Salt Lake City, UT 84119	Alkalinity (as CaCO3)	mg/L		8/25/2016 629h	SM2320B	10.0	156	
	Bicarbonate (as CaCO3)	mg/L		8/25/2016 629h	SM2320B	10.0	156	
	Carbonate (as CaCO3)	mg/L		8/25/2016 629h	SM2320B	10.0	< 10.0	
Phone: (801) 263-8686	Chloride	mg/L		8/25/2016 1221h	E300.0	0.100	2.05	
Toll Free: (888) 263-8686	Sulfate	mg/L		8/25/2016 1255h	E300.0	7.50	113	
Fax: (801) 263-8687	Total Suspended Solids	mg/L		8/25/2016 1426h	SM2540D	7.50	145	
e-mail: awal@awal-labs.com	Total Volatile Solids	% of TS		8/25/2016 1019h	E160.4	0.0100	9.29	@
	Turbidity	NTU		8/25/2016 1027h	E180.1	0.100	88.8	

Kyle F. Gross **Laboratory Director** 

> Jose Rocha **QA** Officer

web: www.awal-labs.com @ - High RPD due to suspected sample non-homogeneity or matrix interference.



Client: Utah Division of Water Quality Contact: Kevin Okleberry

**Project:** Tibble Fork Dam **Lab Sample ID:** 1608508-002

Client Sample ID: American Fork River @ Timp Cave Natl Monument Office

**Collection Date:** 8/24/2016 1615h **Received Date:** 8/24/2016 1730h

**Analytical Results** 

3440 South 700 West Salt Lake City, UT 84119

Phone: (801) 263-8686

Fax: (801) 263-8687

Toll Free: (888) 263-8686

Method Reporting Date Date Analytical Compound Units Prepared **Analyzed** Used Limit Result **Oual** Alkalinity (as CaCO3) mg/L 8/25/2016 629h SM2320B 10.0 156 Bicarbonate (as 10.0 mg/L 8/25/2016 629h SM2320B 156 CaCO3) Carbonate (as CaCO3) 10.0 < 10.0 mg/L 8/25/2016 629h SM2320B Chloride 0.100 6.04 mg/L8/25/2016 1238h E300.0 Sulfate mg/L 8/25/2016 1345h E300.0 7.50 93.2 307 **Total Suspended Solids** mg/L 8/25/2016 1426h SM2540D 7.50 @ Total Volatile Solids 0.0100 % of TS 8/25/2016 1019h E160.4 11.1 0.100 90.4 Turbidity NTU 8/25/2016 1027h E180.1

web: www.awal-labs.com

e-mail: awal@awal-labs.com

Kyle F. Gross Laboratory Director

> Jose Rocha QA Officer

<sup>@ -</sup> High RPD due to suspected sample non-homogeneity or matrix interference.



Salt Lake City, UT 84119

Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**Dept:** ME **QC Type:** LCS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	LCS-44663	Date Analyzed:	08/26/201	l6 1013h										
Test Code:	200.7-DIS	Date Prepared:	08/25/201	6 1112h										
Aluminum		1.02	mg/L	E200.7	0.0153	0.100	1.000	0	102	85 - 115				
Boron		1.02	mg/L	E200.7	0.0163	0.500	1.000	0	102	85 - 115				
Calcium		10.2	mg/L	E200.7	0.0579	1.00	10.00	0	102	85 - 115				
Iron		1.01	mg/L	E200.7	0.00640	0.100	1.000	0	101	85 - 115				
Magnesium		10.3	mg/L	E200.7	0.0495	1.00	10.00	0	103	85 - 115				
Potassium		10.1	mg/L	E200.7	0.121	1.00	10.00	0	101	85 - 115				
Silicon		1.07	mg/L	E200.7	0.0589	0.500	1.000	0	107	85 - 115				
Sodium		10.2	mg/L	E200.7	0.0125	1.00	10.00	0	102	85 - 115				
Tin		1.05	mg/L	E200.7	0.0129	0.500	1.000	0	105	85 - 115				
Titanium		0.979	mg/L	E200.7	0.000586	0.00500	1.000	0	97.9	85 - 115				
Vanadium		0.195	mg/L	E200.7	0.000750	0.00500	0.2000	0	97.3	85 - 115				
Lab Sample ID:	LCS-44666	Date Analyzed:	08/25/201	l6 1737h										
Test Code:	200.7-W	Date Prepared:	08/25/201	6 1112h										
Aluminum		1.01	mg/L	E200.7	0.0153	0.100	1.000	0	101	85 - 115				
Boron		1.05	mg/L	E200.7	0.0163	0.500	1.000	0	105	85 - 115				
Calcium		10.2	mg/L	E200.7	0.0579	1.00	10.00	0	102	85 - 115				
Iron		1.00	mg/L	E200.7	0.00640	0.100	1.000	0	100	85 - 115				
Magnesium		10.5	mg/L	E200.7	0.0495	1.00	10.00	0	105	85 - 115				
Potassium		10.1	mg/L	E200.7	0.121	1.00	10.00	0	101	85 - 115				
Silicon		1.12	mg/L	E200.7	0.0589	0.500	1.000	0	112	85 - 115				
Sodium		10.2	mg/L	E200.7	0.0125	1.00	10.00	0	102	85 - 115				
Titanium		1.05	mg/L	E200.7	0.000586	0.00500	1.000	0	105	85 - 115				
Vanadium		0.201	mg/L	E200.7	0.000750	0.00500	0.2000	0	100	85 - 115				
Lab Sample ID:	LCS-44666	Date Analyzed:	08/26/201	16 953h										
Test Code:	200.7-W	Date Prepared:	08/25/201	6 1112h										
Tin		1.05	mg/L	E200.7	0.0129	0.500	1.000	0	105	85 - 115				

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**Lab Set ID:** 1608508

Utah Division of Water Quality

Tibble Fork Dam

**Client:** 

**Project:** 

Salt Lake City, UT 84119

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

### **QC SUMMARY REPORT**

Contact: Kevin Okleberry

**Dept:** ME **QC Type:** LCS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	LCS-44664	Date Analyzed:	08/26/201	l 6 957h										
Test Code:	200.8-DIS	Date Prepared:	08/25/201	6 1112h										
Antimony		0.183	mg/L	E200.8	0.000306	0.00200	0.2000	0	91.5	85 - 115				
Arsenic		0.202	mg/L	E200.8	0.000540	0.00200	0.2000	0	101	85 - 115				
Barium		0.202	mg/L	E200.8	0.000600	0.00200	0.2000	0	101	85 - 115				
Beryllium		0.193	mg/L	E200.8	0.000177	0.00200	0.2000	0	96.7	85 - 115				
Cadmium		0.194	mg/L	E200.8	0.0000666	0.000500	0.2000	0	96.8	85 - 115				
Chromium		0.199	mg/L	E200.8	0.000998	0.00200	0.2000	0	99.6	85 - 115				
Cobalt		0.195	mg/L	E200.8	0.0000990	0.00400	0.2000	0	97.5	85 - 115				
Copper		0.196	mg/L	E200.8	0.000862	0.00200	0.2000	0	98.1	85 - 115				
Lead		0.191	mg/L	E200.8	0.000125	0.00200	0.2000	0	95.3	85 - 115				
Manganese		0.201	mg/L	E200.8	0.000560	0.00200	0.2000	0	100	85 - 115				
Molybdenum		0.198	mg/L	E200.8	0.000202	0.00200	0.2000	0	99.1	85 - 115				
Nickel		0.199	mg/L	E200.8	0.000522	0.00200	0.2000	0	99.7	85 - 115				
Selenium		0.200	mg/L	E200.8	0.000310	0.00200	0.2000	0	99.9	85 - 115				
Silver		0.201	mg/L	E200.8	0.000132	0.00200	0.2000	0	101	85 - 115				
Thallium		0.190	mg/L	E200.8	0.0000500	0.00200	0.2000	0	95.0	85 - 115				
Zinc		0.998	mg/L	E200.8	0.00452	0.00500	1.000	0	99.8	85 - 115				
Lab Sample ID:	LCS-44667	Date Analyzed:	08/26/201	l6 1035h										
Test Code:	200.8-W	Date Prepared:	08/25/201	6 1112h										
Antimony		0.184	mg/L	E200.8	0.000306	0.00200	0.2000	0	92.2	85 - 115				
Arsenic		0.199	mg/L	E200.8	0.000540	0.00200	0.2000	0	99.5	85 - 115				
Barium		0.201	mg/L	E200.8	0.000600	0.00200	0.2000	0	101	85 - 115				
Beryllium		0.196	mg/L	E200.8	0.000177	0.00200	0.2000	0	97.9	85 - 115				
Cadmium		0.194	mg/L	E200.8	0.0000666	0.000500	0.2000	0	96.9	85 - 115				
Chromium		0.201	mg/L	E200.8	0.000998	0.00200	0.2000	0	101	85 - 115				
Cobalt		0.195	mg/L	E200.8	0.0000990	0.00400	0.2000	0	97.5	85 - 115				
Copper		0.197	mg/L	E200.8	0.000862	0.00200	0.2000	0	98.3	85 - 115				
Lead		0.192	mg/L	E200.8	0.000125	0.00200	0.2000	0	95.8	85 - 115				

Report Date: 8/26/2016 Page 10 of 26



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Kyle F. Gross **Laboratory Director** 

Jose Rocha **QA** Officer

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### **OC SUMMARY REPORT**

**Client:** Utah Division of Water Quality

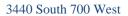
**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Kevin Okleberry **Contact:** 

Dept: ME QC Type: LCS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	LCS-44667 200.8-W	Date Analyzed: Date Prepared:	08/26/201 08/25/201											
Manganese Molybdenum Nickel Selenium Silver Thallium Zinc		0.200 0.197 0.198 0.202 0.202 0.191 1.02	mg/L mg/L mg/L mg/L mg/L mg/L	E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.000560 0.000202 0.000522 0.000310 0.000132 0.0000500 0.00452	0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00500	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 1.000	0 0 0 0 0	99.8 98.7 99.1 101 101 95.5	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115				
Lab Sample ID: Test Code: Mercury	LCS-44676 HG-DW-245.1	Date Analyzed: Date Prepared: 0.00332	08/26/201 08/25/201 mg/L		0.00000559	0.000150	0.003330	0	99.8	85 - 115				
Lab Sample ID: Test Code: Mercury	LCS-44677 HG-DW-DIS-245.1	Date Analyzed: Date Prepared: 0.00364	08/26/201 08/25/201 mg/L		0.00000559	0.000150	0.003330	0	109	85 - 115				



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Kyle F. Gross
Laboratory Director

Jose Rocha QA Officer

#### **QC SUMMARY REPORT**

Client: Utah Division of Water Quality Contact: Kevin Okleberry

Lab Set ID: 1608508

**Project:** 

Tibble Fork Dam

**Dept:** ME **QC Type:** MBLK

Reporting RPD Ref. **RPD** Amount Spike Ref. **MDL** %REC Result Units Method Limit Limits % RPD Limit Qual Analyte Spiked Amount Amt Lab Sample ID: MB-44663 Date Analyzed: 08/26/2016 1011h Test Code: 200.7-DIS Date Prepared: 08/25/2016 1112h E200.7 0.100 < 0.100 0.0153 Aluminum mg/L E200.7 Boron < 0.500 0.0163 0.500 mg/L E200.7 Calcium < 1.00 mg/L 0.0579 1.00 < 0.100 E200.7 0.00640 0.100 Iron mg/L E200.7 < 1.00 0.0495 1.00 Magnesium mg/L Potassium < 1.00 mg/L E200.7 0.121 1.00 E200.7 Silicon 0.0589 0.500 < 0.500 mg/L E200.7 Sodium < 1.00 mg/L 0.0125 1.00 Tin < 0.500 E200.7 0.0129 0.500 mg/L E200.7 Titanium < 0.00500 0.000586 0.00500mg/L E200.7 Vanadium < 0.00500 mg/L 0.000750 0.00500 Lab Sample ID: MB-FILTER-44654 Date Analyzed: 08/26/2016 1051h 200.7-DIS Test Code: Date Prepared: 08/25/2016 1112h E200.7 0.100 Aluminum < 0.100 mg/L 0.0153 < 0.500 E200.7 0.0163 0.500 Boron mg/L Calcium < 1.00 mg/L E200.7 0.0579 1.00 Iron < 0.100 mg/L E200.7 0.00640 0.100 E200.7 Magnesium < 1.00 mg/L 0.0495 1.00 E200.7 Potassium < 1.00 0.121 1.00 mg/L E200.7 Silicon < 0.500 mg/L 0.0589 0.500 Sodium < 1.00 E200.7 0.0125 1.00 mg/L Tin < 0.500 mg/L E200.7 0.0129 0.500 < 0.00500 E200.7 0.000586 0.00500 Titanium mg/L Vanadium < 0.00500 E200.7 0.000750 0.00500 mg/L



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Kyle F. Gross Laboratory Director

Jose Rocha **QA** Officer

#### **OC SUMMARY REPORT**

Kevin Okleberry **Contact:** 

> Dept: ME

**Lab Set ID:** 1608508 QC Type: MBLK **Project:** Tibble Fork Dam

**Client:** 

Utah Division of Water Quality

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	<b>MB-44666</b> 200.7-W	Date Analyzed: Date Prepared:	08/25/20 08/25/20											
Aluminum		< 0.100	mg/L	E200.7	0.0153	0.100								
Boron		< 0.500	mg/L	E200.7	0.0163	0.500								
Calcium		< 1.00	mg/L	E200.7	0.0579	1.00								
Iron		< 0.100	mg/L	E200.7	0.00640	0.100								
Magnesium		< 1.00	mg/L	E200.7	0.0495	1.00								
Potassium		< 1.00	mg/L	E200.7	0.121	1.00								
Silicon		< 0.500	mg/L	E200.7	0.0589	0.500								
Sodium		< 1.00	mg/L	E200.7	0.0125	1.00								
Titanium		< 0.00500	mg/L	E200.7	0.000586	0.00500								
Vanadium		< 0.00500	mg/L	E200.7	0.000750	0.00500								
Lab Sample ID:	MB-44666	Date Analyzed:	08/26/20	16 950h										
Test Code:	200.7-W	Date Prepared:	08/25/20	16 1112h										
Tin		< 0.500	mg/L	E200.7	0.0129	0.500								
Lab Sample ID:	MB-44664	Date Analyzed:	08/26/20	16 954h										
Test Code:	200.8-DIS	Date Prepared:	08/25/20	16 1112h										
Antimony		< 0.00200	mg/L	E200.8	0.000306	0.00200								
Arsenic		< 0.00200	mg/L	E200.8	0.000540	0.00200								
Barium		< 0.00200	mg/L	E200.8	0.000600	0.00200								
Beryllium		< 0.00200	mg/L	E200.8	0.000177	0.00200								
Cadmium		< 0.000500	mg/L	E200.8	0.0000666	0.000500								
Chromium		< 0.00200	mg/L	E200.8	0.000998	0.00200								
Cobalt		< 0.00400	mg/L	E200.8	0.0000990	0.00400								
Copper		< 0.00200	mg/L	E200.8	0.000862	0.00200								
Lead		< 0.00200	mg/L	E200.8	0.000125	0.00200								
Manganese		< 0.00200	mg/L	E200.8	0.000560	0.00200								
Molybdenum		< 0.00200	mg/L	E200.8	0.000202	0.00200								



**Lab Set ID:** 1608508

Tibble Fork Dam

**Project:** 

Salt Lake City, UT 84119

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

### **QC SUMMARY REPORT**

Client: Utah Division of Water Quality

**Contact:** Kevin Okleberry **Dept:** ME

**Dept:** ME **QC Type:** MBLK

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	MB-44664	Date Analyzed:	08/26/201	6 954h										
Test Code:	200.8-DIS	Date Prepared:	08/25/201	6 1112h										
Nickel		< 0.00200	mg/L	E200.8	0.000522	0.00200								
Selenium		< 0.00200	mg/L	E200.8	0.000310	0.00200								
Silver		< 0.00200	mg/L	E200.8	0.000132	0.00200								
Thallium		< 0.00200	mg/L	E200.8	0.0000500	0.00200								
Zinc		< 0.00500	mg/L	E200.8	0.00452	0.00500								
Lab Sample ID:	MB-FILTER-44654	Date Analyzed:	08/26/201	6 1029h										
Test Code:	200.8-DIS	Date Prepared:	08/25/201	6 1112h										
Antimony		< 0.00200	mg/L	E200.8	0.000306	0.00200								
Arsenic		< 0.00200	mg/L	E200.8	0.000540	0.00200								
Barium		< 0.00200	mg/L	E200.8	0.000600	0.00200								
Beryllium		< 0.00200	mg/L	E200.8	0.000177	0.00200								
Cadmium		< 0.000500	mg/L	E200.8	0.0000666	0.000500								
Chromium		< 0.00200	mg/L	E200.8	0.000998	0.00200								
Cobalt		< 0.00400	mg/L	E200.8	0.0000990	0.00400								
Copper		< 0.00200	mg/L	E200.8	0.000862	0.00200								
Lead		< 0.00200	mg/L	E200.8	0.000125	0.00200								
Manganese		< 0.00200	mg/L	E200.8	0.000560	0.00200								
Molybdenum		< 0.00200	mg/L	E200.8	0.000202	0.00200								
Nickel		< 0.00200	mg/L	E200.8	0.000522	0.00200								
Selenium		< 0.00200	mg/L	E200.8	0.000310	0.00200								
Silver		< 0.00200	mg/L	E200.8	0.000132	0.00200								
Thallium		< 0.00200	mg/L	E200.8	0.0000500	0.00200								
Zinc		< 0.00500	mg/L	E200.8	0.00452	0.00500								
Lab Sample ID:	MB-44667	Date Analyzed:	08/26/201	6 1032h										
Test Code:	200.8-W	Date Prepared:	08/25/201	6 1112h										
Antimony		< 0.00200	mg/L	E200.8	0.000306	0.00200								



A

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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:** 1608508

**Project:** Tibble Fork Dam

**Contact:** Kevin Okleberry

**Dept:** ME **QC Type:** MBLK

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	MB-44667	Date Analyzed:	08/26/201	6 1032h										
Test Code:	200.8-W	Date Prepared:	08/25/201	6 1112h										
Arsenic		< 0.00200	mg/L	E200.8	0.000540	0.00200								
Barium		< 0.00200	mg/L	E200.8	0.000600	0.00200								
Beryllium		< 0.00200	mg/L	E200.8	0.000177	0.00200								
Cadmium		< 0.000500	mg/L	E200.8	0.0000666	0.000500								
Chromium		< 0.00200	mg/L	E200.8	0.000998	0.00200								
Cobalt		< 0.00400	mg/L	E200.8	0.0000990	0.00400								
Copper		< 0.00200	mg/L	E200.8	0.000862	0.00200								
Lead		< 0.00200	mg/L	E200.8	0.000125	0.00200								
Manganese		< 0.00200	mg/L	E200.8	0.000560	0.00200								
Molybdenum		< 0.00200	mg/L	E200.8	0.000202	0.00200								
Nickel		< 0.00200	mg/L	E200.8	0.000522	0.00200								
Selenium		< 0.00200	mg/L	E200.8	0.000310	0.00200								
Silver		< 0.00200	mg/L	E200.8	0.000132	0.00200								
Thallium		< 0.00200	mg/L	E200.8	0.0000500	0.00200								
Zinc		0.00892	mg/L	E200.8	0.00452	0.00500								В
Lab Sample ID:	MB-44676	Date Analyzed:	08/26/201	6 759h										
Test Code:	HG-DW-245.1	Date Prepared:	08/25/201	6 1500h										
Mercury		< 0.000150	mg/L	E245.1	0.00000559	0.000150								
Lab Sample ID:	MB-44677	Date Analyzed:	08/26/201	6 824h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/25/201	6 1500h										
Mercury		< 0.000150	mg/L	E245.1	0.00000559	0.000150								

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



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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:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**Dept:** ME **QC Type:** MS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	1608508-001AMS	Date Analyzed:	08/26/201	16 1017h										
Test Code:	200.7-DIS	Date Prepared:	08/25/201	l6 1112h										
Calcium		82.5	mg/L	E200.7	0.290	5.00	10.00	70	125	70 - 130				
Magnesium		30.0	mg/L	E200.7	0.248	5.00	10.00	19.4	106	70 - 130				
Lab Sample ID:	1608508-001AMS	Date Analyzed:	08/26/201	16 1037h										
Test Code:	200.7-DIS	Date Prepared:	08/25/201	l6 1112h										
Aluminum		1.01	mg/L	E200.7	0.0153	0.100	1.000	0	101	70 - 130				
Boron		1.07	mg/L	E200.7	0.0163	0.500	1.000	0	107	70 - 130				
Iron		0.980	mg/L	E200.7	0.00640	0.100	1.000	0	98.0	70 - 130				
Potassium		10.5	mg/L	E200.7	0.121	1.00	10.00	0.646	98.6	70 - 130				
Silicon		5.22	mg/L	E200.7	0.0589	0.500	1.000	4.12	110	70 - 130				
Sodium		12.5	mg/L	E200.7	0.0125	1.00	10.00	2.56	99.3	70 - 130				
Tin		1.01	mg/L	E200.7	0.0129	0.500	1.000	0	101	70 - 130				
Titanium		0.972	mg/L	E200.7	0.000586	0.00500	1.000	0	97.2	70 - 130				
Vanadium		0.196	mg/L	E200.7	0.000750	0.00500	0.2000	0	97.9	70 - 130				
Lab Sample ID:	1608508-002BMS	Date Analyzed:	08/25/201	16 1755h										
Test Code:	200.7-W	Date Prepared:	08/25/201	l6 1112h										
Aluminum		4.23	mg/L	E200.7	0.0153	0.100	1.000	2.61	162	70 - 130				1
Boron		1.13	mg/L	E200.7	0.0163	0.500	1.000	0	113	70 - 130				
Iron		5.45	mg/L	E200.7	0.00640	0.100	1.000	5.31	14.3	70 - 130				2
Potassium		11.7	mg/L	E200.7	0.121	1.00	10.00	1.15	106	70 - 130				
Sodium		15.3	mg/L	E200.7	0.0125	1.00	10.00	4.58	107	70 - 130				
Titanium		1.12	mg/L	E200.7	0.000586	0.00500	1.000	0.058	106	70 - 130				
Vanadium		0.207	mg/L	E200.7	0.000750	0.00500	0.2000	0.00536	101	70 - 130				
Lab Sample ID:	1608508-002BMS	Date Analyzed:	08/26/201	16 1057h										
Test Code:	200.7-W	Date Prepared:	08/25/201	l6 1112h										
Tin		0.929	mg/L	E200.7	0.0129	0.500	1.000	0	92.9	70 - 130				



**Client:** 

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

#### **QC SUMMARY REPORT**

Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**Dept:** ME **QC Type:** MS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	1608508-002BMS	Date Analyzed:	08/26/201	16 1103h										
Test Code:	200.7-W	Date Prepared:	08/25/201	l6 1112h										
Calcium		96.6	mg/L	E200.7	0.579	10.0	10.00	90.3	63.2	70 - 130				2
Lab Sample ID:	1608508-002BMS	Date Analyzed:	08/26/201	16 959h										
Test Code:	200.7-W	Date Prepared:	08/25/201	l6 1112h										
Magnesium		32.5	mg/L	E200.7	0.248	5.00	10.00	22.8	97.5	70 - 130				
Silicon		8.40	mg/L	E200.7	0.294	2.50	1.000	6.66	173	70 - 130				2
Lab Sample ID:	1608508-001AMS	Date Analyzed:	08/26/201	16 1010h										
Test Code:	200.8-DIS	Date Prepared:	08/25/201	l6 1112h										
Antimony		0.194	mg/L	E200.8	0.000306	0.00200	0.2000	0.00415	94.9	75 - 125				
Arsenic		0.219	mg/L	E200.8	0.000540	0.00200	0.2000	0.00646	106	75 - 125				
Barium		0.333	mg/L	E200.8	0.000600	0.00200	0.2000	0.13	102	75 - 125				
Beryllium		0.200	mg/L	E200.8	0.000177	0.00200	0.2000	0	99.9	75 - 125				
Cadmium		0.196	mg/L	E200.8	0.0000666	0.000500	0.2000	0	97.8	75 - 125				
Chromium		0.205	mg/L	E200.8	0.000998	0.00200	0.2000	0	103	75 - 125				
Cobalt		0.200	mg/L	E200.8	0.0000990	0.00400	0.2000	0.00032	99.7	75 - 125				
Copper		0.199	mg/L	E200.8	0.000862	0.00200	0.2000	0	99.4	75 - 125				
Lead		0.193	mg/L	E200.8	0.000125	0.00200	0.2000	0.000164	96.7	75 - 125				
Manganese		0.331	mg/L	E200.8	0.000560	0.00200	0.2000	0.121	105	75 - 125				
Molybdenum		0.205	mg/L	E200.8	0.000202	0.00200	0.2000	0.00288	101	75 - 125				
Nickel		0.205	mg/L	E200.8	0.000522	0.00200	0.2000	0.000976	102	75 - 125				
Selenium		0.213	mg/L	E200.8	0.000310	0.00200	0.2000	0.00084	106	75 - 125				
Silver		0.203	mg/L	E200.8	0.000132	0.00200	0.2000	0	101	75 - 125				
Thallium		0.194	mg/L	E200.8	0.0000500	0.00200	0.2000	0.0000551	96.8	75 - 125				
Zinc		1.03	mg/L	E200.8	0.00452	0.00500	1.000	0	103	75 - 125				



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Kyle F. Gross Laboratory Director

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#### **QC SUMMARY REPORT**

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**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
-	1608508-002BMS 200.8-W	Date Analyzed: Date Prepared:	08/26/201 08/25/201											
Antimony		0.187	mg/L	E200.8	0.000306	0.00200	0.2000	0.00384	91.5	75 - 125				
Arsenic		0.216	mg/L	E200.8	0.000540	0.00200	0.2000	0.012	102	75 - 125				
Barium		0.360	mg/L	E200.8	0.000600	0.00200	0.2000	0.138	111	75 - 125				
Beryllium		0.207	mg/L	E200.8	0.000177	0.00200	0.2000	0.000221	103	75 - 125				
Cadmium		0.209	mg/L	E200.8	0.0000666	0.000500	0.2000	0.00132	104	75 - 125				
Chromium		0.208	mg/L	E200.8	0.000998	0.00200	0.2000	0.0032	103	75 - 125				
Cobalt		0.201	mg/L	E200.8	0.0000990	0.00400	0.2000	0.00263	99.1	75 - 125				
Copper		0.212	mg/L	E200.8	0.000862	0.00200	0.2000	0.0147	98.6	75 - 125				
Lead		0.302	mg/L	E200.8	0.000125	0.00200	0.2000	0.0937	104	75 - 125				
Manganese		0.419	mg/L	E200.8	0.000560	0.00200	0.2000	0.217	101	75 - 125				
Molybdenum		0.206	mg/L	E200.8	0.000202	0.00200	0.2000	0.0019	102	75 - 125				
Nickel		0.209	mg/L	E200.8	0.000522	0.00200	0.2000	0.00673	101	75 - 125				
Selenium		0.202	mg/L	E200.8	0.000310	0.00200	0.2000	0.000883	101	75 - 125				
Silver		0.216	mg/L	E200.8	0.000132	0.00200	0.2000	0.000392	108	75 - 125				
Thallium		0.204	mg/L	E200.8	0.0000500	0.00200	0.2000	0.0000848	102	75 - 125				
Zinc		1.17	mg/L	E200.8	0.00452	0.00500	1.000	0.154	101	75 - 125				
•	1 <b>608508-001BMS</b> HG-DW-245.1	Date Analyzed: Date Prepared:	08/26/201 08/25/201											
Mercury		0.00351	mg/L	E245.1	0.00000559	0.000150	0.003330	0.0000667	103	80 - 120				
•	1 <b>608508-001AMS</b> HG-DW-DIS-245.1	Date Analyzed: Date Prepared:	08/26/201 08/25/201											
Mercury		0.00363	mg/L	E245.1	0.00000559	0.000150	0.003330	0	109	85 - 115				

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

<sup>&</sup>lt;sup>2</sup> - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

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Jose Rocha QA Officer

#### **QC SUMMARY REPORT**

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**Dept:** ME **QC Type:** MSD

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	1608508-001AMSD	Date Analyzed:	08/26/20	16 1020h										
Test Code:	200.7-DIS	Date Prepared:	08/25/20	16 1112h										
Calcium		79.0	mg/L	E200.7	0.290	5.00	10.00	70	89.8	70 - 130	82.5	4.42	20	
Magnesium		29.5	mg/L	E200.7	0.248	5.00	10.00	19.4	101	70 - 130	30	1.74	20	
Lab Sample ID:	1608508-001AMSD	Date Analyzed:	08/26/20	16 1040h										
Test Code:	200.7-DIS	Date Prepared:	08/25/20	16 1112h										
Aluminum		0.992	mg/L	E200.7	0.0153	0.100	1.000	0	99.2	70 - 130	1.01	2.03	20	
Boron		1.05	mg/L	E200.7	0.0163	0.500	1.000	0	105	70 - 130	1.07	2.21	20	
Iron		0.971	mg/L	E200.7	0.00640	0.100	1.000	0	97.1	70 - 130	0.98	0.869	20	
Potassium		10.2	mg/L	E200.7	0.121	1.00	10.00	0.646	95.6	70 - 130	10.5	2.90	20	
Silicon		5.16	mg/L	E200.7	0.0589	0.500	1.000	4.12	104	70 - 130	5.22	1.25	20	
Sodium		12.2	mg/L	E200.7	0.0125	1.00	10.00	2.56	96.0	70 - 130	12.5	2.70	20	
Tin		1.00	mg/L	E200.7	0.0129	0.500	1.000	0	100	70 - 130	1.01	1.41	20	
Titanium		0.947	mg/L	E200.7	0.000586	0.00500	1.000	0	94.7	70 - 130	0.972	2.67	20	
Vanadium		0.190	mg/L	E200.7	0.000750	0.00500	0.2000	0	95.1	70 - 130	0.196	2.82	20	
Lab Sample ID:	1608508-002BMSD	Date Analyzed:	08/25/20	16 1757h										
Test Code:	200.7-W	Date Prepared:	08/25/20	16 1112h										
Aluminum		4.20	mg/L	E200.7	0.0153	0.100	1.000	2.61	159	70 - 130	4.23	0.676	20	1
Boron		1.11	mg/L	E200.7	0.0163	0.500	1.000	0	111	70 - 130	1.13	1.92	20	
Iron		5.34	mg/L	E200.7	0.00640	0.100	1.000	5.31	2.55	70 - 130	5.45	2.18	20	2
Potassium		11.6	mg/L	E200.7	0.121	1.00	10.00	1.15	105	70 - 130	11.7	0.927	20	
Sodium		15.2	mg/L	E200.7	0.0125	1.00	10.00	4.58	106	70 - 130	15.3	0.869	20	
Titanium		1.08	mg/L	E200.7	0.000586	0.00500	1.000	0.058	103	70 - 130	1.12	2.95	20	
Vanadium		0.202	mg/L	E200.7	0.000750	0.00500	0.2000	0.00536	98.2	70 - 130	0.207	2.75	20	
Lab Sample ID:	1608508-002BMSD	Date Analyzed:	08/26/20	16 1002h										
Test Code:	200.7-W	Date Prepared:	08/25/20	16 1112h										
Magnesium		32.4	mg/L	E200.7	0.248	5.00	10.00	22.8	96.4	70 - 130	32.5	0.331	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:** 1608508

**Project:** Tibble Fork Dam

**Contact:** Kevin Okleberry

**Dept:** ME **QC Type:** MSD

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	1608508-002BMSD	Date Analyzed:	08/26/20	16 1002h										
Test Code:	200.7-W	Date Prepared:	08/25/201	16 1112h										
Silicon		8.49	mg/L	E200.7	0.294	2.50	1.000	6.66	183	70 - 130	8.4	1.10	20	2
Lab Sample ID:	1608508-002BMSD	Date Analyzed:	08/26/20	16 1100h										
Test Code:	200.7-W	Date Prepared:	08/25/201	16 1112h										
Tin		0.900	mg/L	E200.7	0.0129	0.500	1.000	0	90.0	70 - 130	0.929	3.24	20	
Lab Sample ID:	1608508-002BMSD	Date Analyzed:	08/26/20	16 1105h										
Test Code:	200.7-W	Date Prepared:	08/25/201	16 1112h										
Calcium		97.7	mg/L	E200.7	0.579	10.0	10.00	90.3	73.8	70 - 130	96.6	1.09	20	
Lab Sample ID:	1608508-001AMSD	Date Analyzed:	08/26/20	16 1013h										
Test Code:	200.8-DIS	Date Prepared:	08/25/201	16 1112h										
Antimony		0.194	mg/L	E200.8	0.000306	0.00200	0.2000	0.00415	94.9	75 - 125	0.194	0.000323	20	
Arsenic		0.217	mg/L	E200.8	0.000540	0.00200	0.2000	0.00646	105	75 - 125	0.219	0.826	20	
Barium		0.335	mg/L	E200.8	0.000600	0.00200	0.2000	0.13	103	75 - 125	0.333	0.704	20	
Beryllium		0.199	mg/L	E200.8	0.000177	0.00200	0.2000	0	99.5	75 - 125	0.2	0.326	20	
Cadmium		0.196	mg/L	E200.8	0.0000666	0.000500	0.2000	0	97.9	75 - 125	0.196	0.0917	20	
Chromium		0.200	mg/L	E200.8	0.000998	0.00200	0.2000	0	100	75 - 125	0.205	2.60	20	
Cobalt		0.194	mg/L	E200.8	0.0000990	0.00400	0.2000	0.00032	96.9	75 - 125	0.2	2.87	20	
Copper		0.195	mg/L	E200.8	0.000862	0.00200	0.2000	0	97.3	75 - 125	0.199	2.23	20	
Lead		0.191	mg/L	E200.8	0.000125	0.00200	0.2000	0.000164	95.5	75 - 125	0.193	1.20	20	
Manganese		0.325	mg/L	E200.8	0.000560	0.00200	0.2000	0.121	102	75 - 125	0.331	1.77	20	
Molybdenum		0.202	mg/L	E200.8	0.000202	0.00200	0.2000	0.00288	99.6	75 - 125	0.205	1.51	20	
Nickel		0.200	mg/L	E200.8	0.000522	0.00200	0.2000	0.000976	99.6	75 - 125	0.205	2.27	20	
Selenium		0.211	mg/L	E200.8	0.000310	0.00200	0.2000	0.00084	105	75 - 125	0.213	0.980	20	
Silver		0.202	mg/L	E200.8	0.000132	0.00200	0.2000	0	101	75 - 125	0.203	0.421	20	
Thallium		0.191	mg/L	E200.8	0.0000500	0.00200	0.2000	0.0000551	95.4	75 - 125	0.194	1.53	20	
Zinc		1.01	mg/L	E200.8	0.00452	0.00500	1.000	0	101	75 - 125	1.03	1.42	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:** 1608508

**Project:** Tibble Fork Dam

**Contact:** Kevin Okleberry

**Dept:** ME **QC Type:** MSD

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	1608508-002BMSD	Date Analyzed:	08/26/20	16 1047h										
Test Code:	200.8-W	Date Prepared:	08/25/20	16 1112h										
Antimony		0.180	mg/L	E200.8	0.000306	0.00200	0.2000	0.00384	88.1	75 - 125	0.187	3.68	20	
Arsenic		0.218	mg/L	E200.8	0.000540	0.00200	0.2000	0.012	103	75 - 125	0.216	0.731	20	
Barium		0.341	mg/L	E200.8	0.000600	0.00200	0.2000	0.138	102	75 - 125	0.36	5.34	20	
Beryllium		0.199	mg/L	E200.8	0.000177	0.00200	0.2000	0.000221	99.5	75 - 125	0.207	3.66	20	
Cadmium		0.199	mg/L	E200.8	0.0000666	0.000500	0.2000	0.00132	98.8	75 - 125	0.209	5.05	20	
Chromium		0.208	mg/L	E200.8	0.000998	0.00200	0.2000	0.0032	102	75 - 125	0.208	0.331	20	
Cobalt		0.200	mg/L	E200.8	0.0000990	0.00400	0.2000	0.00263	98.8	75 - 125	0.201	0.250	20	
Copper		0.211	mg/L	E200.8	0.000862	0.00200	0.2000	0.0147	98.1	75 - 125	0.212	0.493	20	
Lead		0.287	mg/L	E200.8	0.000125	0.00200	0.2000	0.0937	96.8	75 - 125	0.302	4.89	20	
Manganese		0.424	mg/L	E200.8	0.000560	0.00200	0.2000	0.217	104	75 - 125	0.419	1.20	20	
Molybdenum		0.196	mg/L	E200.8	0.000202	0.00200	0.2000	0.0019	97.2	75 - 125	0.206	4.94	20	
Nickel		0.209	mg/L	E200.8	0.000522	0.00200	0.2000	0.00673	101	75 - 125	0.209	0.109	20	
Selenium		0.204	mg/L	E200.8	0.000310	0.00200	0.2000	0.000883	101	75 - 125	0.202	0.639	20	
Silver		0.205	mg/L	E200.8	0.000132	0.00200	0.2000	0.000392	102	75 - 125	0.216	5.40	20	
Thallium		0.194	mg/L	E200.8	0.0000500	0.00200	0.2000	0.0000848	97.2	75 - 125	0.204	4.54	20	
Zinc		1.16	mg/L	E200.8	0.00452	0.00500	1.000	0.154	101	75 - 125	1.17	0.537	20	
Lab Sample ID:	1608508-001BMSD	Date Analyzed:	08/26/20	16 809h										
Test Code:	HG-DW-245.1	Date Prepared:	08/25/20	16 1500h										
Mercury		0.00335	mg/L	E245.1	0.00000559	0.000150	0.003330	0.0000667	98.4	80 - 120	0.00351	4.81	20	
Lab Sample ID:	1608508-001AMSD	Date Analyzed:	08/26/20	16 834h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/25/20	16 1500h										
Mercury		0.00352	mg/L	E245.1	0.00000559	0.000150	0.003330	0	106	85 - 115	0.00363	3.03	20	· · · · · · · · · · · · · · · · · · ·

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

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<sup>&</sup>lt;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

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#### **QC SUMMARY REPORT**

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**Dept:** WC **QC Type:** DUP

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	<b>1608508-002CDUP</b> TSS-W-2540D	Date Analyzed:	08/25/201	6 1426h										
Total Suspended	Solids	267	mg/L	SM2540D	7.48	7.50					307	13.9	5	@
Lab Sample ID: Test Code:	<b>1608508-002CDUP</b> TURB-W-180.1	Date Analyzed:	08/25/201	6 1027h										
Turbidity		96.1	NTU	E180.1	0.0213	0.100					90.4	6.11	20	
Lab Sample ID: Test Code:	<b>1608508-001BDUP</b> TVS-W-160.4	Date Analyzed:	08/25/201	6 1019h										
Total Volatile Sol	ids	15.8	% of TS	E160.4	0	0.0100					9.29	52.0	5	@

<sup>@ -</sup> High RPD due to suspected sample non-homogeneity or matrix interference.

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#### **QC SUMMARY REPORT**

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**Dept:** WC **QC Type:** LCS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	LCS-R93284 300.0-W	Date Analyzed:	08/25/201	6 1204h										
Chloride Sulfate		5.27 5.32	mg/L mg/L	E300.0 E300.0	0.00516 0.0201	0.100 0.750	5.000 5.000	0 0	105 106	90 - 110 90 - 110				
Lab Sample ID: Test Code:	LCS-R93211 ALK-W-2320B	Date Analyzed:	08/25/201	6 629h										
Alkalinity (as Ca	CO3)	50,000	mg/L	SM2320B	1.38	10.0	50,000	0	100	90 - 110				
Lab Sample ID: Test Code:	LCS-R93271 TSS-W-2540D	Date Analyzed:	08/25/201	6 1426h										
Total Suspended	Solids	98.0	mg/L	SM2540D	2.99	3.00	100.0	0	98.0	80 - 120				
Lab Sample ID: Test Code:	<b>LCS-R93228</b> TURB-W-180.1	Date Analyzed:	08/25/201	6 1027h										
Turbidity		9.77	NTU	E180.1	0.0213	0.100	10.00	0	97.7	90 - 110				

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Jose Rocha QA Officer

#### **QC SUMMARY REPORT**

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**Dept:** WC **QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-R93284 Test Code: 300.0-W	Date Analyzed:	08/25/201	6 1148h										
Chloride Sulfate	< 0.100 < 0.750	mg/L mg/L	E300.0 E300.0	0.00516 0.0201	0.100 0.750								
Lab Sample ID:MB-R93211Test Code:ALK-W-2320B	Date Analyzed:	08/25/201	6 629h										
Alkalinity (as CaCO3) Bicarbonate (as CaCO3) Carbonate (as CaCO3)	< 10.0 < 10.0 < 10.0	mg/L mg/L mg/L	SM2320B SM2320B SM2320B	1.38 1.38 1.38	10.0 10.0 10.0								
Lab Sample ID: MB-R93271 Test Code: TSS-W-2540D	Date Analyzed:	08/25/201	6 1426h										
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.99	3.00								
Lab Sample ID:MB-R93228Test Code:TURB-W-180.1	Date Analyzed:	08/25/201	6 1027h										
Turbidity	< 0.100	NTU	E180.1	0.0213	0.100								
Lab Sample ID: MB-R93291 Test Code: TVS-W-160.4	Date Analyzed:	08/25/201	6 1019h										
Total Volatile Solids	< 0.0100	% of TS	E160.4	0	0.0100								

Report Date: 8/26/2016 Page 24 of 26



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e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

### QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1608508

**Project:** Tibble Fork Dam

Contact: Kevin Okleberry

**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:</b> Test Code:	<b>1608508-001BMS</b> 300.0-W	Date Analyzed:	08/25/201	6 1312h										
Chloride Sulfate		108 217	mg/L mg/L	E300.0 E300.0	0.103 0.402	2.00 15.0	100.0 100.0	2.05 113	106 104	90 - 110 90 - 110				
Lab Sample ID: Test Code:	<b>1608508-001BMS</b> ALK-W-2320B	Date Analyzed:	08/25/201	6 629h										•
Alkalinity (as Ca	CO3)	253	mg/L	SM2320B	1.38	10.0	100.0	157	96.5	80 - 120				



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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:** 1608508

**Project:** Tibble Fork Dam

**Contact:** Kevin Okleberry

**Dept:** WC **QC Type:** MSD

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	<b>1608508-001BMSD</b> 300.0-W	Date Analyzed:	08/25/201	6 1329h										
Chloride Sulfate		108 217	mg/L mg/L	E300.0 E300.0	0.103 0.402	2.00 15.0	100.0 100.0	2.05 113	106 103	90 - 110 90 - 110	108 217	0.581 0.185	20 20	
Lab Sample ID: Test Code:	<b>1608508-001BMSD</b> ALK-W-2320B	Date Analyzed:	08/25/201	6 629h										
Alkalinity (as CaC	CO3)	253	mg/L	SM2320B	1.38	10.0	100.0	157	96.5	80 - 120	253	0	10	

### **American West Analytical Laboratories**

# **Next Day Rush**

**WORK ORDER Summary** 

Work Order: 1608508

Page 1 of 2

Client:

Utah Division of Water Quality

Due Date: 8/26/2016

Client ID:

**UTD200** 

Contact:

Toby Hooker

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**Project:** 

**Tibble Fork Dam** 

**OC** Level:

WO Type: Standard

**Comments:** 

Next Day Rush; QC 3. Lab filter Sample #1 for dissolved metals; Sample #2 was field filtered. Sample #1 metals, w/c share; do not preserve entire sample.

Use samples sparingly.;

**Client Sample ID** Sample ID **Collected Date** Received Date Test Code Matrix Sel Storage 5912810 1608508-001A 8/24/2016 1625h 8/24/2016 1730h 200.7-DIS df - dis met Aqueous 11 SEL Analytes: AL B CA FE MG K SI NA SN TI V 200.7-DIS-PR df - dis met 200.8-DIS df - dis met 16 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL ZN 200.8-DIS-PR df - dis met FILTER-PR df - dis met **HG-DW-DIS-245.1** df - dis met **HG-DW-DIS-PR** df - dis met 1608508-001B 200.7-W df - metals / wc / tss/tds/turb 11 SEL Analytes: AL B CA FE MG K SI NA SN TI V 200.7-W-PR df - metals / wc / tss/tds/turb 200.8-W df - metals / wc / tss/tds/turb 16 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL ZN df - metals / wc / 200.8-W-PR tss/tds/turb 300.0-W df - metals / wc / tss/tds/turb 2 SEL Analytes: CL SO4 ALK-W-2320B df - metals / wc / tss/tds/turb 3 SEL Analytes: ALK ALKB ALKC HG-DW-245.1 df - metals / wc / tss/tds/turb **HG-DW-PR** df - metals / wc / tss/tds/turb TSS-W-2540D df - metals / wc / tss/tds/turb **TURB-W-180.1** df - metals / wc / tss/tds/turb

HOK

# **WORK ORDER Summary**

Work Order: 1608508

Page 2 of 2

Client:

Utah Division of Water Quality

Due Date: 8/26/2016

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage				
1608508-001B	5912810	8/24/2016 1625h	8/24/2016 1730h	TVS-W-160.4	Aqueous		df - metals / wc / tss/tds/turb	- 1			
1608508-002A	American Fork River @ Timp Cave Natl Monument Office	8/24/2016 1615h	8/24/2016 1730h	200.7-DIS		df - dis met	1				
				11 SEL Analytes: Al							
				200.7-DIS-PR	df - dis met						
				200.8-DIS		df - dis met					
				16 SEL Analytes: SI AG TL ZN							
				200.8-DIS-PR	df - dis met						
				HG-DW-DIS-245.1			df - dis met				
				HG-DW-DIS-PR			df - dis met				
1608508-002B				200.7-W			df - metals				
				11 SEL Analytes: A	L B CA FE MG K SI NA SN TI V	7					
	***************************************	**************************************	44.7.11	200.7-W-PR			df - metals				
				200.8-W			df - metals				
				16 SEL Analytes: SI AG TL ZN	B AS BA BE CD CR CO CU PB	MN MO NI SE					
				200.8-W-PR			df - metals				
				HG-DW-245.1			df - metals				
				HG-DW-PR			df - metals				
1608508-002C				300.0-W			df - wc / tss/tds/turb				
	Name	***************************************		2 SEL Analytes: CL	, SO4						
				ALK-W-2320B  3 SEL Analytes: ALK ALKB ALKC							
	**************************************		97.00.00								
				TSS-W-2540D			df - wc / tss/tds/turb	TT #11 A.			
				TURB-W-180.1			df - wc / tss/tds/turb				
				TVS-W-160.4			df - wc / tss/tds/turb				

#### **Preservation Check Sheet**

Sample Set Extension and pH

			 	 ~	**************************************	Ct Exten	 - F	 	 			
Analysis	Preservative	-002			:							İ
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,					 	 				
NO <sub>2</sub> & NO <sub>3</sub>	pH < 2 H <sub>2</sub> SO <sub>4</sub>	1										
O&G	pH <2 HCL								 		 	
Phenols	$pH < 2 H_2SO_4$										 	
Sulfide	pH > 9NaOH,											
	Zn Acetate							 	 		 	
TKN	$pH < 2 H_2SO_4$											
T PO <sub>4</sub>	$pH < 2 H_2SO_4$								,			
												<u></u>
				_								

P	roc	ed.	111	_

- 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  $\leq$  2 due to the sample matrix.
- The sample pH was unadjustable to a pH > \_\_\_\_ due to the sample matrix interference.

### American West Analytical Laboratories

#### CHAIN OF CUSTODY

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	3440 S. 700 W. Salt Lake City, UT 84119 Phone # (801) 263-8686 Toll Free # (888) 263-8686											rted using AWAL's standard analyte lists and stody and/or attached documentation.	AWAL Lab Sample Set # Page of	
www.awal-labs.co	Fax # (801) 263-8687 Email awal@awal-labs.com  WWW.awal-labs.com				QC Level: 3+					n <b>d Ti</b>			Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.	Due Date: 8 26 16
Contact:  Phone #:  Email:  Project Name:  Project #:   +			V	- (Dissolmedido	119	15/ Ha	8 (Sol + Cl)	MIGCINITY	/			Report down to the MDL Include EDD: Lab Filter for: Mcfal Field Filtered For: For Compliance With: NELAP RCRA CWA SDWA ELAP/A2LA NLLAP Non-Compliance	Laboratory Use Only  Samples Were:  1 Shipped of hand delivered  2 Ambient of Chilled  3 Temperature  4 Received Broken/Leaking (Improperly Sealed)  Y  5 Progerly Preserved	
Sample ID:  5912 810	Date Sampled	Time Sampled		Sample Matrix		Total	1550	A Sign				-	Other:  Known Hazards & Sample Comments	N Checked at bench  6 Received Within Holding Times
American Fork Were Tim Cave Natl Monument Office	B/24110	4:15pm	3 W	<i>N</i>										COC Tape Was:  1 Present on Outer Package Y N NA  2 Unbroken on Outer Package Y N NA  3 Present on Sample Y N NA  4 Unbroken on Sample Y N NA
														Discrepancies Between Sample Labels and COC Record!
elinquished by: Grief Ladds  int Name: Frich Gaddis	<sup>□</sup> 8/24/16 <sup>™</sup> 12:30	Received by: Signature Print Name:	Jes Des		re y	Br		)			711 713		Special Instructions:	
elinquished by: gnature int Name: elinquished by: gnature	Date:   Received by:   Signature									Date: Time: Date:				
int Name: elinquished by: gnature int Name:	Date: Time:	Print Name: Received by: Signature Print Name:								Time: Date: Time:				