

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	Dear Kevin Okleberry: Lab Set ID: 1608482
Salt Lake City, UT 84119	American West Analytical Laboratories received sample(s) on 8/23/2016 for the analyses presented in the following report.
	American West Analytical Laboratories (AWAL) is accredited by The National
Phone: (801) 263-8686	Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is
Toll Free: (888) 263-8686	state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.
Fax: (801) 263-8687	
e-mail: awal@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
web: www.awal-labs.com	questions or concerns regarding this report please feel free to call.
	The abbreviation "Surr" found in organic reports indicates a surrogate compound that is
Kyle F. Gross	intentionally added by the laboratory to determine sample injection, extraction, and/or
Laboratory Director	purging efficiency. The "Reporting Limit" found on the report is equivalent to the
Laboratory Director	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
Jose Rocha	confused with any regulatory limit. Analytical results are reported to three significant
	figures for quality control and calculation purposes.
QA Officer	ingures for quarty control and calculation purposes.

Thank You,

Approved by: _

Laboratory Director or designee

Inorganic Case Narrative



Phone: (801) 263-8686

Fax: (801) 263-8687

Kyle F. Gross

Jose Rocha

QA Officer

Laboratory Director

Toll Free: (888) 263-8686

e-mail: awal@awal-labs.com

Client: Contact: Project: Lab Set ID:

Utah Division of Water Quality Kevin Okleberry Tibble Fork Dam 1608483

Sample Receipt Information:

3440 South 700 West	Date of Receipt:	8/23/2016
Salt Lake City, UT 84119	Date(s) of Collection:	8/23/2016
San Lake City, 01 84119	Sample Condition:	Intact
	C-O-C Discrepancies:	None

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

Preparation and Analysis Requirements: The samples were analyzed following the methods stated on the analytical reports.

web: www.awal-labs.com 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:

Method Blanks (MB): No target analytes were detected above reporting limits, indicating that the procedure was free from contamination.

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
1608482-001B	Aluminum	MS/MSD	Sample matrix interference
1608482-001B	Iron	MS/MSD	Sample matrix interference
1608482-001B	Silicon	MS/MSD	High analyte concentration
1608482-002A	Aluminum	MS/MSD	High analyte concentration
1608482-002A	Calcium	MS/MSD	High analyte concentration
1608482-002A	Iron	MS/MSD	High analyte concentration
1608482-002A	Lead	MSD	Suspected sample non-homogeneity
1608482-002A	Magnesium	MS/MSD	High analyte concentration
1608482-002A	Manganese	MS/MSD	Suspected sample non-homogeneity
1608482-002A	Potassium	MS	Suspected sample non-homogeneity
1608482-002A	Silicon	MS/MSD	High analyte concentration
1608482-002A	Titanium	MS/MSD	Suspected sample non-homogeneity



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 and for Total Suspended Solids on sample 1680482-001C were outside of the control limits due to suspected sample non-homogeneity or matrix interference.

Corrective Action: None required.

3440 South 700 West Salt Lake City, UT 84119

Phone: (801) 263-8686 Toll Free: (888) 263-8686 Fax: (801) 263-8687 e-mail: awal@awal-labs.com

web: www.awal-labs.com

Kyle F. Gross Laboratory Director

> Jose Rocha QA Officer

Report Date: 8/25/2016 Page 3 of 42



Client:Utah Division of Water QualityProject:Tibble Fork DamLab Sample ID:1608482-001Client Sample ID:4994980Collection Date:8/23/2016Received Date:8/23/2016

Contact: Kevin Okleberry

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	8/24/2016 1058h	8/24/2016 1724h	E200.7	0.100	3.45	1
	Antimony	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.00606	
	Arsenic	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.0198	
$\mathbf{D}_{\mathbf{b}}$	Barium	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.155	
Phone: (801) 263-8686	Beryllium	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/24/2016 1058h	8/24/2016 1724h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.000500	0.00313	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/24/2016 1058h	8/24/2016 1648h	E200.7	10.0	110	
	Chromium	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.00522	
web: www.awal-labs.com	Cobalt	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00400	0.00461	
	Copper	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.0266	
	Iron	mg/L	8/24/2016 1058h	8/24/2016 1724h	E200.7	0.100	7.51	1
Kyle F. Gross	Lead	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.231	
Laboratory Director	Magnesium	mg/L	8/24/2016 1058h	8/24/2016 1648h	E200.7	10.0	25.0	
	Manganese	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.423	
Jose Rocha	Mercury	mg/L	8/24/2016 1500h	8/25/2016 1016h	E245.1	0.000150	0.000355	
QA Officer	Molybdenum	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	< 0.00200	
QITOINCCI	Nickel	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	0.0102	
	Potassium	mg/L	8/24/2016 1058h	8/24/2016 1724h	E200.7	1.00	1.36	
	Selenium	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/24/2016 1058h	8/24/2016 1648h	E200.7	5.00	8.93	2^
	Silver	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/24/2016 1058h	8/24/2016 1724h	E200.7	1.00	5.29	
	Thallium	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/24/2016 1058h	8/24/2016 1724h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/24/2016 1058h	8/24/2016 1724h	E200.7	0.00500	0.0707	
	Vanadium	mg/L	8/24/2016 1058h	8/24/2016 1724h	E200.7	0.00500	0.00766	
	Zinc	mg/L	8/24/2016 1058h	8/24/2016 1904h	E200.8	0.00500	0.341	

^ - The calculated result for Silica (SiO2) is 19.1 mg/L.

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

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

Report Date: 8/25/2016 Page 4 of 42



Utah Division of Water Quality Tibble Fork Dam 1608482-002 Lab Sample ID: Client Sample ID: 4994980-SED **Collection Date:** 8/23/2016 1225h **Received Date:** 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

Client:

Project:

TOTAL METALS

South 700 West	Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
City, UT 84119	Aluminum	mg/kg-dry	8/24/2016 1159h	8/25/2016 1410h	SW6010D	769	12,900	2
	Antimony	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	4.92	7.02	
	Arsenic	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	3.08	30.8	
(901) 262 9696	Barium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	5.54	155	
: (801) 263-8686	Beryllium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	2.46	< 2.46	
: (888) 263-8686	Boron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1459h	SW6010D	76.9	< 76.9	
: (801) 263-8687	Cadmium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	1.05	3.88	
l@awal-labs.com	Calcium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1410h	SW6010D	7,690	63,300	2
	Chromium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	12.3	26.2	
awal-labs.com/	Cobalt	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	1.66	9.32	
	Copper	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	19.1	43.1	
	Iron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1410h	SW6010D	384	18,400	2
Kyle F. Gross	Lead	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	8.00	267	3
atory Director	Magnesium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1410h	SW6010D	7,690	12,800	2
·	Manganese	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	4.92	576	3
Jose Rocha	Mercury	mg/kg-dry	8/24/2016 1737h	8/25/2016 737h	SW7471B	0.0561	0.286	
QA Officer	Molybdenum	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	24.6	< 24.6	
2	Nickel	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	24.6	26.4	
	Potassium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1356h	SW6010D	769	3,670	3
	Selenium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	10.5	< 10.5	
	Silicon	mg/kg-dry	8/24/2016 1159h	8/25/2016 1356h	SW6010D	384	1,930	2^
	Silver	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	1.85	< 1.85	
	Sodium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1459h	SW6010D	154	395	
	Thallium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	4.92	< 4.92	
	Tin	mg/kg-dry	8/24/2016 1159h	8/25/2016 1459h	SW6010D	15.4	< 15.4	
	Titanium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1410h	SW6010D	38.4	164	3
	Vanadium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1356h	SW6010D	3.84	37.7	
	Zinc	mg/kg-dry	8/24/2016 1159h	8/24/2016 1823h	SW6020B	61.5	509	

^ - The calculated result for Silica (SiO2) is 4128 mg/kg-dry

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

³ - Matrix spike recoveries and/or high RPDs indicate suspected sample non-homogeneity. The method is in control as indicated by the LCS.

Report Date: 8/25/2016 Page 5 of 42



Client:Utah Division of Water QualityProject:Tibble Fork DamLab Sample ID:1608482-003Client Sample ID:5912840Collection Date:8/23/2016Received Date:8/23/2016

Contact: Kevin Okleberry

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	8/24/2016 1058h	8/24/2016 1730h	E200.7	0.100	< 0.100	
	Antimony	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
	Arsenic	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
Phone: (801) 263-8686	Barium	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	0.0411	
× ,	Beryllium	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.000500	< 0.000500	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/24/2016 1058h	8/24/2016 1657h	E200.7	10.0	78.0	
	Chromium	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
web: www.awal-labs.com	Cobalt	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
	Iron	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	0.100	< 0.100	
Kyle F. Gross	Lead	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
Laboratory Director	Magnesium	mg/L	8/24/2016 1058h	8/24/2016 1657h	E200.7	10.0	24.6	
	Manganese	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
Jose Rocha	Mercury	mg/L	8/24/2016 1500h	8/25/2016 1010h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	0.00205	
2	Nickel	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
	Potassium	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	1.00	< 1.00	
	Selenium	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	0.500	3.92	^
	Silver	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	1.00	2.59	
	Thallium	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	0.00500	< 0.00500	
	Vanadium	mg/L	8/24/2016 1058h	8/24/2016 1730h	E200.7	0.00500	< 0.00500	
	Zinc	mg/L	8/24/2016 1058h	8/24/2016 1920h	E200.8	0.00500	0.00622	

^ - The calculated result for Silica (SiO2) is 8.39 mg/L.

Report Date: 8/25/2016 Page 6 of 42



Utah Division of Water Quality Tibble Fork Dam Lab Sample ID: 1608482-004 Client Sample ID: 5912840-SED **Collection Date:** 8/23/2016 1425h **Received Date:** 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

Client:

Project:

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/kg-dry	8/24/2016 1159h	8/25/2016 1425h	SW6010D	630	6,840	
	Antimony	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	4.03	< 4.03	
	Arsenic	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	2.52	13.4	
Dhama (901) 262 9696	Barium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	4.54	60.1	
Phone: (801) 263-8686	Beryllium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	2.02	< 2.02	
Toll Free: (888) 263-8686	Boron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1506h	SW6010D	63.0	< 63.0	
Fax: (801) 263-8687	Cadmium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	0.857	2.13	
e-mail: awal@awal-labs.com	Calcium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1425h	SW6010D	6,300	63,400	
	Chromium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	10.1	19.6	
web: www.awal-labs.com	Cobalt	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	1.36	5.18	
	Copper	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	15.6	< 15.6	
	Iron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1425h	SW6010D	315	17,300	
Kyle F. Gross	Lead	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	6.55	39.6	
Laboratory Director	Magnesium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1445h	SW6010D	630	6,150	
	Manganese	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	4.03	466	
Jose Rocha	Mercury	mg/kg-dry	8/24/2016 1737h	8/25/2016 746h	SW7471B	0.0427	0.0614	
QA Officer	Molybdenum	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	20.2	< 20.2	
	Nickel	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	20.2	20.9	
	Potassium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1445h	SW6010D	630	1,210	
	Selenium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	8.57	< 8.57	
	Silicon	mg/kg-dry	8/24/2016 1159h	8/25/2016 1445h	SW6010D	315	2,020	^
	Silver	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	1.51	< 1.51	
	Sodium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1506h	SW6010D	126	205	
	Thallium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	4.03	< 4.03	
	Tin	mg/kg-dry	8/24/2016 1159h	8/25/2016 1506h	SW6010D	12.6	< 12.6	
	Titanium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1445h	SW6010D	3.15	24.8	
	Vanadium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1445h	SW6010D	3.15	26.0	
	Zinc	mg/kg-dry	8/24/2016 1159h	8/24/2016 1839h	SW6020B	50.4	213	

^ - The calculated result for Silica (SiO2) is 4322 mg/kg-dry



Client:Utah Division of Water QualityProject:Tibble Fork DamLab Sample ID:1608482-005Client Sample ID:5912810Collection Date:8/23/20161445hReceived Date:8/23/20161647h

Contact: Kevin Okleberry

Analytical Results

TOTAL METALS

3440 South 700 West	Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qua
alt Lake City, UT 84119	Aluminum	mg/L	8/24/2016 1058h	8/24/2016 1818h	E200.7	0.100	1.51	
	Antimony	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.00461	
	Arsenic	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.0154	
Dhomes (901) 262, 9696	Barium	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.179	
Phone: (801) 263-8686	Beryllium	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	< 0.00200	
oll Free: (888) 263-8686	Boron	mg/L	8/24/2016 1058h	8/24/2016 1818h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.000500	0.00101	
mail: awal@awal-labs.com	Calcium	mg/L	8/24/2016 1058h	8/24/2016 1659h	E200.7	10.0	84.1	
	Chromium	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.00213	
eb: www.awal-labs.com	Cobalt	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.00952	
	Iron	mg/L	8/24/2016 1058h	8/24/2016 1818h	E200.7	0.100	3.50	
Kyle F. Gross	Lead	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.0830	
Laboratory Director	Magnesium	mg/L	8/24/2016 1058h	8/24/2016 1659h	E200.7	10.0	22.5	
	Manganese	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.279	
Jose Rocha	Mercury	mg/L	8/24/2016 1500h	8/25/2016 1108h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.00268	
QA Officer	Nickel	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	0.00456	
	Potassium	mg/L	8/24/2016 1058h	8/24/2016 1818h	E200.7	1.00	1.04	
	Selenium	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/24/2016 1058h	8/24/2016 1659h	E200.7	5.00	6.50	^
	Silver	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/24/2016 1058h	8/24/2016 1818h	E200.7	1.00	2.79	
	Thallium	mg/L	8/24/2016 1058h	8/24/2016 1923h	E200.7	0.00200	< 0.00200	
	Tin	mg/L	8/24/2016 1058h	8/24/2016 1923h 8/24/2016 1818h	E200.7	0.500	< 0.500	
	Titanium		8/24/2016 1058h	8/24/2016 1818h	E200.7	0.00500	< 0.300 0.0306	
	Vanadium	mg/L			E200.7 E200.7	0.00500	< 0.00500	
	Zinc	mg/L mg/L	8/24/2016 1058h 8/24/2016 1058h	8/24/2016 1818h 8/24/2016 1923h	E200.7 E200.8	0.00500	< 0.00300 0.122	

^ - The calculated result for Silica (SiO2) is 13.9 mg/L.

Report Date: 8/25/2016 Page 8 of 42



Utah Division of Water Quality Tibble Fork Dam Lab Sample ID: 1608482-006 Client Sample ID: 5912810-SED **Collection Date:** 8/23/2016 1445h **Received Date:** 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

Client:

Project:

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/kg-dry	8/24/2016 1159h	8/25/2016 1428h	SW6010D	777	7,760	
	Antimony	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	4.97	< 4.97	
	Arsenic	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	3.11	15.9	
Phone: (801) 263-8686	Barium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	5.59	181	
	Beryllium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	2.49	< 2.49	
Toll Free: (888) 263-8686	Boron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1508h	SW6010D	77.7	< 77.7	
Fax: (801) 263-8687	Cadmium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	1.06	2.08	
e-mail: awal@awal-labs.com	Calcium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1428h	SW6010D	7,770	68,800	
	Chromium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	12.4	22.2	
web: www.awal-labs.com	Cobalt	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	1.68	6.20	
	Copper	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	19.3	< 19.3	
	Iron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1428h	SW6010D	389	12,100	
Kyle F. Gross	Lead	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	8.08	109	
Laboratory Director	Magnesium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1428h	SW6010D	7,770	12,900	
	Manganese	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	4.97	406	
Jose Rocha	Mercury	mg/kg-dry	8/24/2016 1737h	8/25/2016 748h	SW7471B	0.0604	0.155	
QA Officer	Molybdenum	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	24.9	< 24.9	
2	Nickel	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	24.9	< 24.9	
	Potassium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1448h	SW6010D	777	2,880	
	Selenium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	10.6	< 10.6	
	Silicon	mg/kg-dry	8/24/2016 1159h	8/25/2016 1448h	SW6010D	389	2,590	^
	Silver	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	1.86	< 1.86	
	Sodium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1508h	SW6010D	155	486	
	Thallium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	4.97	< 4.97	
	Tin	mg/kg-dry	8/24/2016 1159h	8/25/2016 1508h	SW6010D	15.5	< 15.5	
	Titanium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1428h	SW6010D	38.9	168	
	Vanadium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1448h	SW6010D	3.89	34.9	
	Zinc	mg/kg-dry	8/24/2016 1159h	8/24/2016 1842h	SW6020B	62.2	280	

^ - The calculated result for Silica (SiO2) is 5539 mg/kg-dry



Client:Utah Division of Water QualityProject:Tibble Fork DamLab Sample ID:1608482-007Client Sample ID:4994990Collection Date:8/23/20161500hReceived Date:8/23/20161647h

Contact: Kevin Okleberry

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	8/24/2016 1058h	8/24/2016 1820h	E200.7	0.100	7.78	
	Antimony	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.00633	
	Arsenic	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.0283	
Phone: (801) 263-8686	Barium	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.295	
	Beryllium	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/24/2016 1058h	8/24/2016 1820h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.000500	0.00392	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/24/2016 1058h	8/24/2016 1701h	E200.7	10.0	167	
	Chromium	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.0112	
web: www.awal-labs.com	Cobalt	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00400	0.00819	
	Copper	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.0401	
	Iron	mg/L	8/24/2016 1058h	8/24/2016 1820h	E200.7	0.100	15.7	
Kyle F. Gross	Lead	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.296	
Laboratory Director	Magnesium	mg/L	8/24/2016 1058h	8/24/2016 1701h	E200.7	10.0	39.3	
	Manganese	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.779	
Jose Rocha	Mercury	mg/L	8/24/2016 1500h	8/25/2016 1110h	E245.1	0.000150	0.000267	
QA Officer	Molybdenum	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.00207	
	Nickel	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	0.0214	
	Potassium	mg/L	8/24/2016 1058h	8/24/2016 1820h	E200.7	1.00	2.10	
	Selenium	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/24/2016 1058h	8/24/2016 1701h	E200.7	5.00	16.4	٨
	Silver	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/24/2016 1058h	8/24/2016 1820h	E200.7	1.00	2.95	
	Thallium	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/24/2016 1058h	8/24/2016 1820h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/24/2016 1058h	8/24/2016 1820h	E200.7	0.00500	0.114	
	Vanadium	mg/L	8/24/2016 1058h	8/24/2016 1820h	E200.7	0.00500	0.0146	
	Zinc	mg/L	8/24/2016 1058h	8/24/2016 1926h	E200.8	0.00500	0.475	

^ - The calculated result for Silica (SiO2) is 35.0 mg/L.

Report Date: 8/25/2016 Page 10 of 42



Utah Division of Water Quality Tibble Fork Dam Lab Sample ID: 1608482-008 Client Sample ID: 499490-SED **Collection Date:** 8/23/2016 1500h **Received Date:** 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

Client:

Project:

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/kg-dry	8/24/2016 1159h	8/25/2016 1430h	SW6010D	911	11,700	
	Antimony	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	5.83	9.27	
	Arsenic	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	3.64	33.8	
Phone: (801) 263-8686	Barium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	6.56	162	
	Beryllium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	2.92	< 2.92	
Toll Free: (888) 263-8686	Boron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1511h	SW6010D	91.1	< 91.1	
Fax: (801) 263-8687	Cadmium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	1.24	5.08	
e-mail: awal@awal-labs.com	Calcium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1430h	SW6010D	9,110	50,100	
	Chromium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	14.6	26.3	
web: www.awal-labs.com	Cobalt	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	1.97	9.44	
	Copper	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	22.6	55.5	
	Iron	mg/kg-dry	8/24/2016 1159h	8/25/2016 1430h	SW6010D	456	15,700	
Kyle F. Gross	Lead	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	9.48	347	
Laboratory Director	Magnesium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1430h	SW6010D	9,110	11,100	
	Manganese	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	5.83	560	
Jose Rocha	Mercury	mg/kg-dry	8/24/2016 1737h	8/25/2016 750h	SW7471B	0.0591	0.409	
QA Officer	Molybdenum	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	29.2	< 29.2	
C	Nickel	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	29.2	< 29.2	
	Potassium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1450h	SW6010D	911	4,100	
	Selenium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	12.4	< 12.4	
	Silicon	mg/kg-dry	8/24/2016 1159h	8/25/2016 1450h	SW6010D	456	2,610	^
	Silver	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	2.19	< 2.19	
	Sodium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1511h	SW6010D	182	363	
	Thallium	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	5.83	< 5.83	
	Tin	mg/kg-dry	8/24/2016 1159h	8/25/2016 1511h	SW6010D	18.2	< 18.2	
	Titanium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1430h	SW6010D	45.6	153	
	Vanadium	mg/kg-dry	8/24/2016 1159h	8/25/2016 1450h	SW6010D	4.56	41.6	
	Zinc	mg/kg-dry	8/24/2016 1159h	8/24/2016 1845h	SW6020B	72.9	601	
	Λ - The calculated result for	r Silica (SiO2) is	5581 malka dry					

^ - The calculated result for Silica (SiO2) is 5581 mg/kg-dry

Date

Analyzed

8/24/2016 1710h

8/24/2016 1712h

8/24/2016 1712h

8/24/2016 1712h

8/24/2016 1712h

8/24/2016 1710h

8/24/2016 1712h

8/24/2016 1620h

8/24/2016 1712h

8/24/2016 1712h

8/24/2016 1712h

8/24/2016 1710h

8/24/2016 1712h

8/24/2016 1620h

8/24/2016 1712h

8/25/2016 954h

8/24/2016 1712h

8/24/2016 1712h

8/24/2016 1710h

8/24/2016 1712h

8/24/2016 1710h

8/24/2016 1712h

8/24/2016 1710h

8/24/2016 1712h

8/24/2016 1710h

8/24/2016 1710h

8/24/2016 1710h

8/24/2016 1712h

Method

Used

E200.7

E200.8

E200.8

E200.8

E200.8

E200.7

E200.8

E200.7

E200.8

E200.8

E200.8

E200.7

E200.8

E200.7

E200.8

E245.1

E200.8

E200.8

E200.7

E200.8

E200.7

E200.8

E200.7

E200.8

E200.7

E200.7

E200.7

E200.8

Date

Prepared

8/24/2016 1058h

8/24/2016 1500h

8/24/2016 1058h



3440 South 700 West

Phone: (801) 263-8686

Fax: (801) 263-8687

Kyle F. Gross

Jose Rocha

QA Officer

Laboratory Director

Toll Free: (888) 263-8686

e-mail: awal@awal-labs.com

web: www.awal-labs.com

Salt Lake City, UT 84119

Client:Utah Division of Water QualityProject:Tibble Fork DamLab Sample ID:1608482-001Client Sample ID:4994980Collection Date:8/23/2016Received Date:8/23/2016

Units

mg/L

۸

Analytical Results

Compound

Aluminum

Antimony

Arsenic

Barium

Boron

Beryllium

Cadmium

Chromium

Calcium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Mercury

Nickel

Potassium

Selenium

Silicon

Silver

Tin

Sodium

Thallium

Titanium

Vanadium

DISSOLVED METALS

Analytical

Result

< 0.100

0.00424

0.00392

0.0842

< 0.00200

< 0.500

< 0.000500

64.9

< 0.00200

< 0.00400

< 0.00200

< 0.100

< 0.00200

18.1

0.0404

< 0.000150

0.00255

< 0.00200

< 1.00

3.86

< 0.00200

5.49

< 0.00200

< 0.500

< 0.00500

< 0.00500

< 0.00500

Oual

Contact: Kevin Okleberry

Reporting

Limit

0.100

0.00200

0.00200

0.00200

0.00200

0.500

0.000500

10.0

0.00200

0.00400

0.00200

0.100

0.00200

10.0

0.00200 0.000150

0.00200

0.00200

1.00

0.00200

0.500

0.00200

1.00

0.00200

0.500

0.00500

0.00500

0.00500

Zinc mg/L

^ - The calculated result for Silica (SiO2) is 8.26mg/L.

Report Date: 8/25/2016 Page 12 of 42

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 in connection manys in good faith and according to the rules of the trade and of science.



Client:Utah Division of Water QualityProject:Tibble Fork DamLab Sample ID:1608482-003Client Sample ID:5912840Collection Date:8/23/2016Received Date:8/23/2016

Contact: Kevin Okleberry

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	8/24/2016 1058h	8/24/2016 1717h	E200.7	0.100	< 0.100	
	Antimony	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
	Arsenic	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
Phone: (801) 263-8686	Barium	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	0.0423	
	Beryllium	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.000500	< 0.000500	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/24/2016 1058h	8/24/2016 1629h	E200.7	10.0	74.9	
	Chromium	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
web: www.awal-labs.com	Cobalt	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
	Iron	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	0.100	< 0.100	
Kyle F. Gross	Lead	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
Laboratory Director	Magnesium	mg/L	8/24/2016 1058h	8/24/2016 1629h	E200.7	10.0	23.5	
·	Manganese	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
Jose Rocha	Mercury	mg/L	8/24/2016 1500h	8/25/2016 956h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	0.00205	
QITOMICO	Nickel	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
	Potassium	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	1.00	< 1.00	
	Selenium	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	0.500	3.78	^
	Silver	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	1.00	2.59	
	Thallium	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	0.00500	< 0.00500	
	Vanadium	mg/L	8/24/2016 1058h	8/24/2016 1717h	E200.7	0.00500	< 0.00500	
	Zinc	mg/L	8/24/2016 1058h	8/24/2016 1728h	E200.8	0.00500	0.00792	

^ - The calculated result for Silica (SiO2) is 8.1 mg/L.

Report Date: 8/25/2016 Page 13 of 42



Client:Utah Division of Water QualityProject:Tibble Fork DamLab Sample ID:1608482-005Client Sample ID:5912810Collection Date:8/23/20161445hReceived Date:8/23/20161647h

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	8/24/2016 1058h	8/24/2016 1719h	E200.7	0.100	< 0.100	
	Antimony	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	0.00407	
	Arsenic	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	0.00792	
Phone: (801) 263-8686	Barium	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	0.148	
	Beryllium	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.000500	< 0.000500	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/24/2016 1058h	8/24/2016 1631h	E200.7	10.0	67.3	
	Chromium	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
web: www.awal-labs.com	Cobalt	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
	Iron	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	0.100	< 0.100	
Kyle F. Gross	Lead	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
Laboratory Director	Magnesium	mg/L	8/24/2016 1058h	8/24/2016 1631h	E200.7	10.0	19.5	
	Manganese	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	0.149	
Jose Rocha	Mercury	mg/L	8/24/2016 1500h	8/25/2016 958h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	0.00323	
	Nickel	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
	Potassium	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	1.00	< 1.00	
	Selenium	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	0.500	4.27	^
	Silver	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	1.00	2.67	
	Thallium	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	0.00500	< 0.00500	
	Vanadium	mg/L	8/24/2016 1058h	8/24/2016 1719h	E200.7	0.00500	< 0.00500	
	Zinc	mg/L	8/24/2016 1058h	8/24/2016 1731h	E200.8	0.00500	< 0.00500	

^ - The calculated result for Silica (SiO2) is 8.14 mg/L.

Report Date: 8/25/2016 Page 14 of 42



Client: Utah Division of Water Quality **Project:** Tibble Fork Dam Lab Sample ID: 1608482-007 Client Sample ID: 4994990 **Collection Date:** 8/23/2016 1500h **Received Date:** 8/23/2016 1647h

DISSOLVED METALS

Contact: Kevin Okleberry

Analytical Results

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	8/24/2016 1058h	8/24/2016 1721h	E200.7	0.100	< 0.100	
	Antimony	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	0.00442	
	Arsenic	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	0.00596	
Phone: (801) 263-8686	Barium	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	0.120	
	Beryllium	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
Toll Free: (888) 263-8686	Boron	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	0.500	< 0.500	
Fax: (801) 263-8687	Cadmium	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.000500	< 0.000500	
e-mail: awal@awal-labs.com	Calcium	mg/L	8/24/2016 1058h	8/24/2016 1633h	E200.7	10.0	63.3	
	Chromium	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
web: www.awal-labs.com	Cobalt	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00400	< 0.00400	
	Copper	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
	Iron	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	0.100	< 0.100	
Kyle F. Gross	Lead	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
Laboratory Director	Magnesium	mg/L	8/24/2016 1058h	8/24/2016 1633h	E200.7	10.0	17.7	
	Manganese	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	0.0980	
Jose Rocha	Mercury	mg/L	8/24/2016 1500h	8/25/2016 947h	E245.1	0.000150	< 0.000150	
QA Officer	Molybdenum	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	0.00309	
	Nickel	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
	Potassium	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	1.00	< 1.00	
	Selenium	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
	Silicon	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	0.500	4.39	^
	Silver	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
	Sodium	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	1.00	2.68	
	Thallium	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00200	< 0.00200	
	Tin	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	0.500	< 0.500	
	Titanium	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	0.00500	< 0.00500	
	Vanadium	mg/L	8/24/2016 1058h	8/24/2016 1721h	E200.7	0.00500	< 0.00500	
	Zinc	mg/L	8/24/2016 1058h	8/24/2016 1734h	E200.8	0.00500	< 0.00500	

^ - The calculated result for Silica (SiO2) is 9.39 mg/L.

Report Date: 8/25/2016 Page 15 of 42



Client: Utah Division of Water Quality **Project:** Tibble Fork Dam 1608482-001 Lab Sample ID: Client Sample ID: 4994980 **Collection Date:** 8/23/2016 1225h **Received Date:** 8/23/2016 1647h

Contact: Kevin Okleberry

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		8/24/2016 600h	SM2320B	10.0	156	
	Bicarbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	156	
	Carbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	< 10.0	
Phone: (801) 263-8686	Chloride	mg/L		8/24/2016 1242h	E300.0	0.100	6.90	
Toll Free: (888) 263-8686	Sulfate	mg/L		8/24/2016 1349h	E300.0	7.50	94.6	
Fax: (801) 263-8687	Total Suspended Solids	mg/L		8/24/2016 1328h	SM2540D	18.8	805	@
e-mail: awal@awal-labs.com	Total Volatile Solids	% of TS		8/24/2016 1215h	E160.4	0.0100	15.5	@
	Turbidity	NTU		8/24/2016 1014h	E180.1	1.00	322	

web: www.awal-labs.com

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

Kyle F. Gross Laboratory Director

> Jose Rocha **QA** Officer

Report Date: 8/25/2016 Page 16 of 42



Client: Utah Division of Water Quality **Project:** Tibble Fork Dam 1608482-003 Lab Sample ID: Client Sample ID: 5912840 **Collection Date:** 8/23/2016 1425h **Received Date:** 8/23/2016 1647h

Analytical Results

3440 South 70	0 West
Salt Lake City, UT	84119

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		8/24/2016 600h	SM2320B	10.0	156	
	Bicarbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	156	
	Carbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	< 10.0	
Phone: (801) 263-8686	Chloride	mg/L		8/24/2016 1259h	E300.0	0.100	1.94	
Toll Free: (888) 263-8686	Sulfate	mg/L		8/24/2016 1444h	E300.0	7.50	148	
Fax: (801) 263-8687	Total Suspended Solids	mg/L		8/24/2016 1328h	SM2540D	3.00	< 3.00	
e-mail: awal@awal-labs.com	Total Volatile Solids	% of TS		8/24/2016 1215h	E160.4	0.0100	16.1	
	Turbidity	NTU		8/24/2016 1014h	E180.1	0.100	0.223	

web: www.awal-labs.com

Kyle F. Gross Laboratory Director

> Jose Rocha **QA** Officer

Report Date: 8/25/2016 Page 17 of 42



Client: Utah Division of Water Quality **Project:** Tibble Fork Dam 1608482-005 Lab Sample ID: Client Sample ID: 5912810 **Collection Date:** 8/23/2016 1445h **Received Date:** 8/23/2016 1647h

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		8/24/2016 600h	SM2320B	10.0	156	
	Bicarbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	156	
	Carbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	< 10.0	
Phone: (801) 263-8686	Chloride	mg/L		8/24/2016 1316h	E300.0	0.100	2.08	
Toll Free: (888) 263-8686	Sulfate	mg/L		8/24/2016 1501h	E300.0	7.50	117	
Fax: (801) 263-8687	Total Suspended Solids	mg/L		8/24/2016 1328h	SM2540D	7.50	196	
e-mail: awal@awal-labs.com	Total Volatile Solids	% of TS		8/24/2016 1215h	E160.4	0.0100	12.9	
	Turbidity	NTU		8/24/2016 1014h	E180.1	0.100	96.6	

web: www.awal-labs.com

Kyle F. Gross Laboratory Director

> Jose Rocha **QA** Officer

Report Date: 8/25/2016 Page 18 of 42



Client: Utah Division of Water Quality **Project:** Tibble Fork Dam 1608482-007 Lab Sample ID: Client Sample ID: 4994990 **Collection Date:** 8/23/2016 1500h **Received Date:** 8/23/2016 1647h

Contact: Kevin Okleberry

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		8/24/2016 600h	SM2320B	10.0	153	
	Bicarbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	153	
	Carbonate (as CaCO3)	mg/L		8/24/2016 600h	SM2320B	10.0	< 10.0	
Phone: (801) 263-8686	Chloride	mg/L		8/24/2016 1333h	E300.0	0.100	2.02	
Toll Free: (888) 263-8686	Sulfate	mg/L		8/24/2016 1518h	E300.0	7.50	106	
Fax: (801) 263-8687	Total Suspended Solids	mg/L		8/24/2016 1328h	SM2540D	15.0	1,210	
e-mail: awal@awal-labs.com	Total Volatile Solids	% of TS		8/24/2016 1215h	E160.4	0.0100	6.16	
	Turbidity	NTU		8/24/2016 1014h	E180.1	1.00	280	

web: www.awal-labs.com

Kyle F. Gross Laboratory Director

> Jose Rocha **QA** Officer

Report Date: 8/25/2016 Page 19 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

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

QC SUMMARY REPORT

ANALYTICAL LA	ABORATORIES	- V	
Client:	Utah Division of Water Quality	Contact:	Kevin Okleberry
Lab Set ID:	1608482	Dept:	ME
Project:	Tibble Fork Dam	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-44639	Date Analyzed:	08/24/201	6 1615h										
Test Code:	200.7-DIS	Date Prepared:	08/24/201	6 1058h										
Aluminum		1.04	mg/L	E200.7	0.0153	0.100	1.000	0	104	85 - 115				
Boron		0.982	mg/L	E200.7	0.0163	0.500	1.000	0	98.2	85 - 115				
Calcium		9.79	mg/L	E200.7	0.0579	1.00	10.00	0	97.9	85 - 115				
Iron		1.00	mg/L	E200.7	0.00640	0.100	1.000	0	100	85 - 115				
Magnesium		9.86	mg/L	E200.7	0.0495	1.00	10.00	0	98.6	85 - 115				
Potassium		10.3	mg/L	E200.7	0.121	1.00	10.00	0	103	85 - 115				
Silicon		1.07	mg/L	E200.7	0.0589	0.500	1.000	0	107	85 - 115				
Sodium		10.4	mg/L	E200.7	0.0125	1.00	10.00	0	104	85 - 115				
Tin		0.958	mg/L	E200.7	0.0129	0.500	1.000	0	95.8	85 - 115				
Titanium		0.936	mg/L	E200.7	0.000586	0.00500	1.000	0	93.6	85 - 115				
Vanadium		0.191	mg/L	E200.7	0.000750	0.00500	0.2000	0	95.5	85 - 115				
Lab Sample ID:	LCS-44641	Date Analyzed:	08/24/201	6 1644h										
Test Code:	200.7-W	Date Prepared:	08/24/201	6 1058h										
Aluminum		1.06	mg/L	E200.7	0.0153	0.100	1.000	0	106	85 - 115				
Boron		1.01	mg/L	E200.7	0.0163	0.500	1.000	0	101	85 - 115				
Calcium		9.87	mg/L	E200.7	0.0579	1.00	10.00	0	98.7	85 - 115				
Iron		1.01	mg/L	E200.7	0.00640	0.100	1.000	0	101	85 - 115				
Magnesium		9.94	mg/L	E200.7	0.0495	1.00	10.00	0	99.4	85 - 115				
Potassium		10.4	mg/L	E200.7	0.121	1.00	10.00	0	104	85 - 115				
Silicon		1.09	mg/L	E200.7	0.0589	0.500	1.000	0	109	85 - 115				
Sodium		10.5	mg/L	E200.7	0.0125	1.00	10.00	0	105	85 - 115				
Tin		0.975	mg/L	E200.7	0.0129	0.500	1.000	0	97.5	85 - 115				
Titanium		0.960	mg/L	E200.7	0.000586	0.00500	1.000	0	96.0	85 - 115				
Vanadium		0.196	mg/L	E200.7	0.000750	0.00500	0.2000	0	97.8	85 - 115				

Report Date: 8/25/2016 Page 20 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

QC SUMMARY REPORT

Kevin Okleberry

ME

Contact: Dept:

ARALITIONE LA	
Client:	Utah Division of Water Quality
Lab Set ID:	1608482
Project:	Tibble Fork Dam

Jose Rocha QA Officer

Project: T	ibble Fork Dam						QC Typ	e: 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-44640	Date Analyzed:	08/24/20	16 1704h										
Test Code:	200.8-DIS	Date Prepared:	08/24/201	l 6 1058h										
Antimony		0.170	mg/L	E200.8	0.000306	0.00200	0.2000	0	85.2	85 - 115				
Arsenic		0.191	mg/L	E200.8	0.000540	0.00200	0.2000	0	95.4	85 - 115				
Barium		0.194	mg/L	E200.8	0.000600	0.00200	0.2000	0	96.8	85 - 115				
Beryllium		0.190	mg/L	E200.8	0.000177	0.00200	0.2000	0	95.2	85 - 115				
Cadmium		0.190	mg/L	E200.8	0.0000666	0.000500	0.2000	0	95.1	85 - 115				
Chromium		0.193	mg/L	E200.8	0.000998	0.00200	0.2000	0	96.7	85 - 115				
Cobalt		0.189	mg/L	E200.8	0.0000990	0.00400	0.2000	0	94.7	85 - 115				
Copper		0.189	mg/L	E200.8	0.000862	0.00200	0.2000	0	94.7	85 - 115				
Lead		0.192	mg/L	E200.8	0.000125	0.00200	0.2000	0	96.2	85 - 115				
Manganese		0.196	mg/L	E200.8	0.000560	0.00200	0.2000	0	97.8	85 - 115				
Molybdenum		0.193	mg/L	E200.8	0.000202	0.00200	0.2000	0	96.6	85 - 115				
Nickel		0.192	mg/L	E200.8	0.000522	0.00200	0.2000	0	96.2	85 - 115				
Selenium		0.197	mg/L	E200.8	0.000310	0.00200	0.2000	0	98.4	85 - 115				
Silver		0.188	mg/L	E200.8	0.000132	0.00200	0.2000	0	93.9	85 - 115				
Thallium		0.192	mg/L	E200.8	0.0000500	0.00200	0.2000	0	95.9	85 - 115				
Zinc		0.956	mg/L	E200.8	0.00452	0.00500	1.000	0	95.6	85 - 115				
Lab Sample ID:	LCS-44642	Date Analyzed:	08/24/20	16 1901h										
Test Code:	200.8-W	Date Prepared:	08/24/201	16 1058h										
Antimony		0.180	mg/L	E200.8	0.000306	0.00200	0.2000	0	89.8	85 - 115				
Arsenic		0.200	mg/L	E200.8	0.000540	0.00200	0.2000	0	100	85 - 115				
Barium		0.203	mg/L	E200.8	0.000600	0.00200	0.2000	0	101	85 - 115				
Beryllium		0.195	mg/L	E200.8	0.000177	0.00200	0.2000	0	97.5	85 - 115				
Cadmium		0.198	mg/L	E200.8	0.0000666	0.000500	0.2000	0	99.0	85 - 115				
Chromium		0.194	mg/L	E200.8	0.000998	0.00200	0.2000	0	96.8	85 - 115				
Cobalt		0.191	mg/L	E200.8	0.0000990	0.00400	0.2000	0	95.5	85 - 115				
Copper		0.193	mg/L	E200.8	0.000862	0.00200	0.2000	0	96.5	85 - 115				
Lead		0.195	mg/L	E200.8	0.000125	0.00200	0.2000	0	97.4	85 - 115				

Report Date: 8/25/2016 Page 21 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

QC SUMMARY REPORT

Kevin Okleberry

ME

Contact: Dept:

ANALITICAL	EXBORATORIES	•	
Client:	Utah Division of Water Quality		
Lab Set II): 1608482		
Project:	Tibble Fork Dam		

Jose Rocha QA Officer

Project: Ti	ibble Fork Dam						QC Typ	e: 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:		Date Analyzed:	08/24/201											
Test Code:	200.8-W	Date Prepared:	08/24/201	6 1058h										
Manganese		0.198	mg/L	E200.8	0.000560	0.00200	0.2000	0	99.0	85 - 115				
Molybdenum		0.199	mg/L	E200.8	0.000202	0.00200	0.2000	0	99.3	85 - 115				
Nickel		0.194	mg/L	E200.8	0.000522	0.00200	0.2000	0	97.2	85 - 115				
Selenium		0.203	mg/L	E200.8	0.000310	0.00200	0.2000	0	101	85 - 115				
Silver		0.195	mg/L	E200.8	0.000132	0.00200	0.2000	0	97.3	85 - 115				
Thallium		0.191	mg/L	E200.8	0.0000500	0.00200	0.2000	0	95.3	85 - 115				
Zinc		0.970	mg/L	E200.8	0.00452	0.00500	1.000	0	97.0	85 - 115				
Lab Sample ID:	LCS-44645	Date Analyzed:	08/25/201	l6 1354h										
Test Code:	6010D-S	Date Prepared:	08/24/201	6 1159h										
Aluminum		94.7	mg/kg	SW6010D	3.29	10.0	100.0	0	94.7	80 - 120				
Boron		90.9	mg/kg	SW6010D	2.93	50.0	100.0	0	90.9	80 - 120				
Calcium		973	mg/kg	SW6010D	10.4	100	1,000	0	97.3	80 - 120				
Iron		95.0	mg/kg	SW6010D	0.977	5.00	100.0	0	95.0	80 - 120				
Magnesium		986	mg/kg	SW6010D	6.81	100	1,000	0	98.6	80 - 120				
Potassium		937	mg/kg	SW6010D	9.04	100	1,000	0	93.7	80 - 120				
Silicon		95.5	mg/kg	SW6010D	4.70	50.0	100.0	0	95.5	80 - 120				
Sodium		953	mg/kg	SW6010D	18.2	100	1,000	0	95.3	80 - 120				
Tin		94.0	mg/kg	SW6010D	0.739	10.0	100.0	0	94.0	80 - 120				
Titanium		98.1	mg/kg	SW6010D	0.103	0.500	100.0	0	98.1	80 - 120				
Vanadium		18.8	mg/kg	SW6010D	0.0507	0.500	20.00	0	94.1	80 - 120				
Lab Sample ID:	LCS-44645	Date Analyzed:	08/24/201	6 1820h										
Test Code:	6020B-S	Date Prepared:	08/24/201	6 1159h										
Antimony		18.2	mg/kg	SW6020B	0.204	3.20	20.00	0	91.0	85 - 115				
Arsenic		18.5	mg/kg	SW6020B	0.0872	2.00	20.00	0	92.4	85 - 115				
Barium		19.0	mg/kg	SW6020B	2.73	3.60	20.00	0	95.2	85 - 115				
Beryllium		18.7	mg/kg	SW6020B	0.125	1.60	20.00	0	93.3	85 - 115				

Report Date: 8/25/2016 Page 22 of 42



Selenium Silver

Thallium

19.5

18.5

18.4

mg/kg

mg/kg

mg/kg

SW6020B

SW6020B

SW6020B

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha **QA** Officer

OC SUMMARY REPORT

Client: Ut	tah Division of Water	Quality					Contact:	Kevin Ok	leberry					
Lab Set ID: 16	508482						Dept:	ME						
Project: Ti	bble Fork Dam						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-44645	Date Analyzed:	08/24/201	6 1820h										
Test Code:	6020B-S	Date Prepared:	08/24/201	6 1159h										
Cadmium		18.5	mg/kg	SW6020B	0.0952	0.680	20.00	0	92.6	85 - 115				
Chromium		18.9	mg/kg	SW6020B	5.60	8.00	20.00	0	94.6	85 - 115				
Cobalt		18.4	mg/kg	SW6020B	0.556	1.08	20.00	0	92.0	85 - 115				
Copper		18.6	mg/kg	SW6020B	4.32	12.4	20.00	0	93.2	85 - 115				
Lead		18.8	mg/kg	SW6020B	0.182	5.20	20.00	0	93.8	85 - 115				
Manganese		18.9	mg/kg	SW6020B	1.44	3.20	20.00	0	94.4	85 - 115				
Molybdenum		19.0	mg/kg	SW6020B	1.24	16.0	20.00	0	95.2	85 - 115				
Nickel		18.6	mg/kg	SW6020B	2.58	16.0	20.00	0	92.9	85 - 115				

0.112

0.0720

0.109

Zinc		92.2	mg/kg	SW6020B	3.55	40.0	100.0	0	92.2	85 - 115
Lab Sample ID: Test Code:	LCS-44651 HG-DW-245.1	Date Analyzed: Date Prepared:	08/25/2010 08/24/2010							
Mercury		0.00321	mg/L	E245.1	0.00000559	0.000150	0.003330	0	96.5	85 - 115
Lab Sample ID: Test Code:	LCS-44650 HG-DW-DIS-245.1	Date Analyzed: Date Prepared:	08/25/2010 08/24/2010							
Mercury		0.00364	mg/L	E245.1	0.00000559	0.000150	0.003330	0	109	85 - 115
Lab Sample ID: Test Code:	LCS-44653 HG-S-7471B	Date Analyzed: Date Prepared:	08/25/2010 08/24/2010							
Mercury		0.370	mg/kg	SW7471B	0.000959	0.0400	0.4000	0	92.6	80 - 120

6.80

1.20

3.20

20.00

20.00

20.00

0

0

0

97.4

92.3

92.1

85 - 115

85 - 115

85 - 115

Report Date: 8/25/2016 Page 23 of 42



Titanium

Vanadium

Tin

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

QC SUMMARY REPORT

Contact:

Dept:

Kevin Okleberry

ME

Client: Utah Division of Water Quality Lab Set ID: 1608482 Pı

< 0.500

< 0.00500

< 0.00500

mg/L

mg/L

mg/L

E200.7

E200.7

E200.7

Jose Rocha **QA** Officer

Project: Ti	ibble Fork Dam						QC Type	e: MBLK						
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
-	MB-44639	Date Analyzed:	08/24/20											
Test Code:	200.7-DIS	Date Prepared:	08/24/201	l 6 1058h										
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								
Tin		< 0.500	mg/L	E200.7	0.0129	0.500								
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-44641	Date Analyzed:	08/24/20	16 1642h										
Test Code:	200.7-W	Date Prepared:	08/24/201	6 1058h										
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								

0.500

0.00500

0.00500

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.

0.0129

0.000586

0.000750



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

QC SUMMARY REPORT

Kevin Okleberry

ME

Contact: Dept:

Client:	Utah Division of Water Quality
Lab Set ID:	1608482
Project.	Tibble Fork Dam

Jose Rocha QA Officer

Project: T	ibble Fork Dam						QC Typ	e: 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-44640	Date Analyzed:	08/24/20	16 1700h										
Test Code:	200.8-DIS	Date Prepared:	08/24/201	6 1058h										
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-44642	Date Analyzed:	08/24/20	l6 1858h										
Test Code:	200.8-W	Date Prepared:	08/24/201	l 61058h										
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								
			-											

Report Date: 8/25/2016 Page 25 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

QC SUMMARY REPORT

Kevin Okleberry

ME

Contact: Dept:

Client:	Utah Division of Water Quality
Lab Set ID:	1608482
Project:	Tibble Fork Dam

Jose Rocha QA Officer

Project: T	ibble Fork Dam						QC Typ	e: 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-44642	Date Analyzed:	08/24/20	16 1858h										
Test Code:	200.8-W	Date Prepared:	08/24/201	16 1058h										
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-44645	Date Analyzed:	08/25/20	16 1352h										
Test Code:	6010D-S	Date Prepared:	08/24/201	16 1159h										
Aluminum		< 10.0	mg/kg	SW6010D	3.29	10.0								
Boron		< 50.0	mg/kg	SW6010D	2.93	50.0								
Calcium		< 100	mg/kg	SW6010D	10.4	100								
Iron		< 5.00	mg/kg	SW6010D	0.977	5.00								
Magnesium		< 100	mg/kg	SW6010D	6.81	100								
Potassium		< 100	mg/kg	SW6010D	9.04	100								
Silicon		< 50.0	mg/kg	SW6010D	4.70	50.0								
Sodium		< 100	mg/kg	SW6010D	18.2	100								
Tin		< 10.0	mg/kg	SW6010D	0.739	10.0								
Titanium		< 0.500	mg/kg	SW6010D	0.103	0.500								
Vanadium		< 0.500	mg/kg	SW6010D	0.0507	0.500								
Lab Sample ID:	MB-44645	Date Analyzed:	08/24/20	16 1817h										
Test Code:	6020B-S	Date Prepared:	08/24/201	16 1159h										
Antimony		< 3.20	mg/kg	SW6020B	0.204	3.20								
Arsenic		< 2.00	mg/kg	SW6020B	0.0872	2.00								
Barium		< 3.60	mg/kg	SW6020B	2.73	3.60								
Beryllium		< 1.60	mg/kg	SW6020B	0.125	1.60								

Report Date: 8/25/2016 Page 26 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha QA Officer

QC SUMMARY REPORT

				Reporting		Spike Ref.			RPD	
Project:	Tibble Fork Dam				QC Type	: MBLK				
Lab Set ID:	1608482				Dept:	ME				
Client:	Utah Division of Water Qu	ality			Contact:	Kevin Ok	leberry			

Lab Sample ID:	MB-44645	Date Analyzed:	08/24/201	6 1817h		
Test Code:	6020B-S	Date Prepared:	08/24/201	6 1159h		
Cadmium		< 0.680	mg/kg	SW6020B	0.0952	0.680
Chromium		< 8.00	mg/kg	SW6020B	5.60	8.00
Cobalt		< 1.08	mg/kg	SW6020B	0.556	1.08
Copper		< 12.4	mg/kg	SW6020B	4.32	12.4
Lead		< 5.20	mg/kg	SW6020B	0.182	5.20
Manganese		< 3.20	mg/kg	SW6020B	1.44	3.20
Molybdenum		< 16.0	mg/kg	SW6020B	1.24	16.0
Nickel		< 16.0	mg/kg	SW6020B	2.58	16.0
Selenium		< 6.80	mg/kg	SW6020B	0.112	6.80
Silver		< 1.20	mg/kg	SW6020B	0.0720	1.20
Thallium		< 3.20	mg/kg	SW6020B	0.109	3.20
Zinc		< 40.0	mg/kg	SW6020B	3.55	40.0
Lab Sample ID:	MB-44651	Date Analyzed:	08/25/201	6 1003h		
Test Code:	HG-DW-245.1	Date Prepared:	08/24/201	6 1500h		
Mercury		< 0.000150	mg/L	E245.1	0.00000559	0.000150
Lab Sample ID:	MB-44650	Date Analyzed:	08/25/201	6 940h		
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/24/201	6 1500h		
Mercury		< 0.000150	mg/L	E245.1	0.00000559	0.000150
Lab Sample ID:	MB-44653	Date Analyzed:	08/25/201	6 729h		
Test Code:	HG-S-7471B	Date Prepared:	08/24/201	6 1737h		
Mercury		< 0.0400	mg/kg	SW7471B	0.000959	0.0400
-			-			

Report Date: 8/25/2016 Page 27 of 42



Sodium

16.3

mg/L

E200.7

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha QA Officer

QC SUMMARY REPORT

ANALYTICAL LABO	DRATORIES			<u>V</u> C		AKIKE	PUKI							
Client: U Lab Set ID: 10	Itah Division of Water 608482	Quality					Contact: Dept:	Kevin Ok ME	leberry					
Project: T	ibble Fork Dam						QC Type:	: MS						
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	1608482-001AMS 200.7-DIS	Date Analyzed: Date Prepared:	08/24/201 08/24/201											
Calcium Magnesium		74.9 27.8	mg/L mg/L	E200.7 E200.7	0.579 0.495	10.0 10.0	10.00 10.00	64.9 18.1	100 97.0	70 - 130 70 - 130				
Lab Sample ID: Test Code:	1608482-001AMS 200.7-DIS	Date Analyzed: Date Prepared:	08/24/201 08/24/201											
Aluminum Boron Iron Potassium Silicon		1.08 1.04 0.999 11.4 4.80	mg/L mg/L mg/L mg/L	E200.7 E200.7 E200.7 E200.7 E200.7	0.0153 0.0163 0.00640 0.121 0.0589	0.100 0.500 0.100 1.00 0.500	1.000 1.000 1.000 10.00 1.000	0.0337 0 0 0.758 3.86	105 104 99.9 106 94.0	70 - 130 70 - 130 70 - 130 70 - 130 70 - 130				
Sodium Tin Titanium Vanadium		16.0 0.948 0.942 0.192	mg/L mg/L mg/L mg/L mg/L	E200.7 E200.7 E200.7 E200.7 E200.7	0.0389 0.0125 0.0129 0.000586 0.000750	1.00 0.500 0.00500 0.00500	1000 10.00 1.000 1.000 0.2000	5.49 0 0 0	94.0 105 94.8 94.2 96.0	70 - 130 70 - 130 70 - 130 70 - 130 70 - 130				
Lab Sample ID: Test Code:	1608482-001BMS 200.7-W	Date Analyzed: Date Prepared:	08/24/201 08/24/201											
Calcium Magnesium Silicon		118 36.0 13.8	mg/L mg/L mg/L	E200.7 E200.7 E200.7	0.579 0.495 0.589	10.0 10.0 5.00	10.00 10.00 1.000	110 25 8.93	79.7 110 491	70 - 130 70 - 130 70 - 130				2
Lab Sample ID: Test Code:	1608482-001BMS 200.7-W	Date Analyzed: Date Prepared:	08/24/201 08/24/201											
Aluminum Boron Iron Potassium		6.71 1.11 9.55 12.7	mg/L mg/L mg/L mg/L	E200.7 E200.7 E200.7 E200.7	0.0153 0.0163 0.00640 0.121	0.100 0.500 0.100 1.00	1.000 1.000 1.000 10.00	3.45 0 7.51 1.36	326 111 204 113	70 - 130 70 - 130 70 - 130 70 - 130				1

Report Date: 8/25/2016 Page 28 of 42

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.

1.00

10.00

5.29

111

70 - 130

0.0125



3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

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

QC SUMMARY REPORT

Client: U Lab Set ID: 1	Itah Division of Wate 608482	r Quality					Contact: Dept:	Kevin Ok ME	leberry					
	ibble Fork Dam						QC Type:							
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:	1608482-001BMS 200.7-W	Date Analyzed: Date Prepared:	08/24/201 08/24/201											
Tin Titanium Vanadium		0.801 1.06 0.208	mg/L mg/L mg/L	E200.7 E200.7 E200.7	0.0129 0.000586 0.000750	0.500 0.00500 0.00500	1.000 1.000 0.2000	0 0.0707 0.00766	80.1 98.4 100	70 - 130 70 - 130 70 - 130				
Lab Sample ID: Test Code:	1608482-001AMS 200.8-DIS	Date Analyzed: Date Prepared:	08/24/201 08/24/201											
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Molybdenum Nickel Selenium Silver Thallium Zinc		0.185 0.204 0.280 0.194 0.195 0.199 0.192 0.190 0.197 0.236 0.207 0.195 0.203 0.193 0.197 0.972	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.000306 0.000540 0.000177 0.0000666 0.000998 0.0000990 0.000862 0.000125 0.000560 0.000202 0.000522 0.000522 0.000310 0.000132 0.0000500 0.00452	0.00200 0.00200 0.00200 0.000500 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200	0.2000 0.2000	0.00424 0.00392 0.0842 0 0 0 0 0.000178 0 0.000178 0 0.000386 0.0404 0.00255 0.000701 0.000672 0 0 0	90.4 100 98.1 97.2 97.7 99.6 96.0 94.8 98.3 97.8 102 97.0 101 96.3 98.4 97.2	75 - 125 $75 - 125$				
Lab Sample ID: Test Code:	1608482-001BMS 200.8-W	Date Analyzed: Date Prepared:	08/24/201 08/24/201	6 1914h	0.00132	0.00200	1.000	0	71.2	,5 125				
Antimony Arsenic Barium		0.175 0.223 0.367	mg/L mg/L mg/L	E200.8 E200.8 E200.8	0.000306 0.000540 0.000600	0.00200 0.00200 0.00200	0.2000 0.2000 0.2000	0.00606 0.0198 0.155	84.3 101 106	75 - 125 75 - 125 75 - 125				

Report Date: 8/25/2016 Page 29 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

QC SUMMARY REPORT

Kevin Okleberry

ME

Contact: Dept:

Client:	Utah Division of Water Quality
Lab Set ID:	1608482
Project:	Tibble Fork Dam

Jose Rocha QA Officer

Project: T	ibble Fork Dam						QC Typ	e: MS						
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	1608482-001BMS 200.8-W	Date Analyzed: Date Prepared:	08/24/201 08/24/201											
Beryllium		0.199	mg/L	E200.8	0.000177	0.00200	0.2000	0.000406	99.4	75 - 125				
Cadmium		0.204	mg/L	E200.8	0.0000666	0.000500	0.2000	0.00313	101	75 - 125				
Chromium		0.208	mg/L	E200.8	0.000998	0.00200	0.2000	0.00522	101	75 - 125				
Cobalt		0.200	mg/L	E200.8	0.0000990	0.00400	0.2000	0.00461	97.8	75 - 125				
Copper		0.223	mg/L	E200.8	0.000862	0.00200	0.2000	0.0266	98.3	75 - 125				
Lead		0.445	mg/L	E200.8	0.000125	0.00200	0.2000	0.231	107	75 - 125				
Manganese		0.637	mg/L	E200.8	0.000560	0.00200	0.2000	0.423	107	75 - 125				
Molybdenum		0.193	mg/L	E200.8	0.000202	0.00200	0.2000	0.00179	95.4	75 - 125				
Nickel		0.210	mg/L	E200.8	0.000522	0.00200	0.2000	0.0102	99.7	75 - 125				
Selenium		0.202	mg/L	E200.8	0.000310	0.00200	0.2000	0.000919	101	75 - 125				
Silver		0.198	mg/L	E200.8	0.000132	0.00200	0.2000	0.000621	98.5	75 - 125				
Thallium		0.198	mg/L	E200.8	0.0000500	0.00200	0.2000	0.000158	98.9	75 - 125				
Zinc		1.36	mg/L	E200.8	0.00452	0.00500	1.000	0.341	102	75 - 125				
Lab Sample ID:	1608482-002AMS	Date Analyzed:	08/25/201	6 1415h										
Test Code:	6010D-S	Date Prepared:	08/24/201	6 1159h										
Aluminum		13,900	mg/kg-dry	SW6010D	254	773	154.7	12900	664	75 - 125				2
Calcium		62,000	mg/kg-dry	SW6010D	804	7,730	1,547	63300	-80.7	75 - 125				2
Iron		18,000	mg/kg-dry	SW6010D	75.6	387	154.7	18400	-271	75 - 125				2
Magnesium		13,900	mg/kg-dry	SW6010D	527	7,730	1,547	12800	67.7	75 - 125				2
Titanium		268	mg/kg-dry	SW6010D	7.97	38.7	154.7	164	67.1	75 - 125				3
Lab Sample ID:	1608482-002AMS	Date Analyzed:	08/25/201	6 1441h										
Test Code:	6010D-S	Date Prepared:	08/24/201	6 1159h										
Potassium		5,650	mg/kg-dry	SW6010D	69.9	773	1,547	3670	128	75 - 125				3
Silicon			mg/kg-dry	SW6010D	36.3	387	154.7	1930	131	75 - 125				2
Vanadium			mg/kg-dry	SW6010D	0.392	3.87	30.93	37.7	114	75 - 125				

Report Date: 8/25/2016 Page 30 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

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

QC SUMMARY REPORT

ANALYTICAL LABO	ORATORIES													
Client: U	Jtah Division of Wate	r Quality					Contact:	Kevin Ok	deberry					
Lab Set ID: 1	608482						Dept:	ME						
Project: T	Tibble Fork Dam						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:	1608482-002AMS	Date Analyz	zed: 08/25/201	6 1502h										
Test Code:	6010D-S	Date Prepare	ed: 08/24/201	6 1159h										
Boron		163	mg/kg-dry	SW6010D	4.53	77.3	154.7	17.9	93.6	75 - 125				
Sodium		2,060	mg/kg-dry	SW6010D	28.1	155	1,547	395	107	75 - 125				
Tin		143	mg/kg-dry	SW6010D	1.14	15.5	154.7	0	92.7	75 - 125				
Lab Sample ID:	1608482-002AMS	Date Analyz	zed: 08/24/201	6 1833h										
Test Code:	6020B-S	Date Prepare	ed: 08/24/201	6 1159h										
Antimony		33.8	mg/kg-dry	SW6020B	0.316	4.95	30.93	7.02	86.6	75 - 125				
Arsenic		62.2	mg/kg-dry	SW6020B	0.135	3.09	30.93	30.8	102	75 - 125				
Barium		194	mg/kg-dry	SW6020B	4.22	5.57	30.93	155	125	75 - 125				
Beryllium		29.2	mg/kg-dry	SW6020B	0.193	2.47	30.93	1.04	90.9	75 - 125				
Cadmium		33.2	mg/kg-dry	SW6020B	0.147	1.05	30.93	3.88	94.6	75 - 125				
Chromium		58.6	mg/kg-dry	SW6020B	8.66	12.4	30.93	26.2	105	75 - 125				
Cobalt		37.6	mg/kg-dry	SW6020B	0.860	1.67	30.93	9.32	91.5	75 - 125				
Copper		71.7	mg/kg-dry	SW6020B	6.68	19.2	30.93	43.1	92.7	75 - 125				
Lead		304	mg/kg-dry	SW6020B	0.281	8.04	30.93	267	117	75 - 125				
Molybdenum		31.9	mg/kg-dry	SW6020B	1.92	24.7	30.93	0	103	75 - 125				
Nickel		56.4	mg/kg-dry	SW6020B	3.99	24.7	30.93	26.4	96.9	75 - 125				
Selenium		31.6	mg/kg-dry	SW6020B	0.174	10.5	30.93	0.967	99.0	75 - 125				
Silver		30.3	mg/kg-dry	SW6020B	0.111	1.86	30.93	1.21	94.0	75 - 125				
Thallium		29.1	mg/kg-dry	SW6020B	0.168	4.95	30.93	0.37	93.0	75 - 125				
Lab Sample ID:	1608482-002AMS	Date Analyz	zed: 08/24/201	6 2116h										
Test Code:	6020B-S	Date Prepare	ed: 08/24/201	6 1159h										
Manganese		648	mg/kg-dry	SW6020B	2.78	6.19	30.93	576	232	75 - 125				3
Lab Sample ID:	1608482-002AMS	Date Analyz	red: 08/25/201	6 731h										
Test Code:	6020B-S	Date Prepare	ed: 08/24/201	6 1159h										
Zinc		689	mg/kg-dry	SW6020B	13.7	155	154.7	509	117	75 - 125				

Report Date: 8/25/2016 Page 31 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha **QA** Officer

QC SUMMARY REPORT

		Reporting	Amount	Spike Ref.
Project:	Tibble Fork Dam		QC Type:	MS
Lab Set ID:	1608482		Dept:	ME
Client:	Utah Division of Water Quality		Contact:	Kevin Okleberry

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:	1608482-003BMS HG-DW-245.1	Date Analyzed: Date Prepared:												
Mercury		0.00327	mg/L	E245.1	0.00000559	0.000150	0.003330	0	98.2	80 - 120				
Lab Sample ID: Test Code:	1608482-007AMS HG-DW-DIS-245.1	Date Analyzed: Date Prepared:												
Mercury		0.00364	mg/L	E245.1	0.00000559	0.000150	0.003330	0	109	85 - 115				
Lab Sample ID: Test Code:	1608482-002AMS HG-S-7471B	Date Analyzed: Date Prepared:												
Mercury		0.920	mg/kg-dry	SW7471B	0.00134	0.0561	0.5606	0.286	113	80 - 120				

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

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

³ - Matrix spike recoveries and/or high RPDs indicate suspected sample non-homogeneity. The method is in control as indicated by the LCS.

Report Date: 8/25/2016 Page 32 of 42



Sodium

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha **QA** Officer

OC SUMMARY REPORT

NALYTICAL LABO	ORATORIES			<u>v</u> u	SUMM									
Lab Set ID: 1	Jtah Division of Water 608482 Tibble Fork Dam	Quality					Contact: Dept: QC Type:	Kevin Ok ME : MSD	cleberry					
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:	1608482-001AMSD 200.7-DIS	Date Analyzed: Date Prepared:	08/24/20 08/24/20											
Calcium Magnesium		76.3 28.4	mg/L mg/L	E200.7 E200.7	0.579 0.495	10.0 10.0	10.00 10.00	64.9 18.1	114 103	70 - 130 70 - 130	74.9 27.8	1.85 2.14	20 20	
Lab Sample ID: Test Code:	1608482-001AMSD 200.7-DIS	Date Analyzed: Date Prepared:	08/24/20 08/24/20											
Aluminum Boron Iron Potassium Silicon Sodium Tin Titanium Vanadium Lab Sample ID: Test Code: Calcium Magnesium	1608482-001BMSD 200.7-W	1.07 1.05 0.969 11.1 4.75 15.7 0.953 0.933 0.190 Date Analyzed: Date Prepared: 123 36.5	mg/L mg/L mg/L mg/L mg/L mg/L mg/L 08/24/20 08/24/20 08/24/20 mg/L mg/L		0.0153 0.0163 0.00640 0.121 0.0589 0.0125 0.0129 0.000586 0.000750 0.579 0.495	0.100 0.500 0.100 1.00 0.500 1.00 0.500 0.00500 0.00500	1.000 1.000 1.000 10.00 1.000 1.000 1.000 0.2000	0.0337 0 0 0.758 3.86 5.49 0 0 0 0 110 25	104 105 96.9 103 89.0 102 95.3 93.3 95.0 125 114	70 - 130 70 - 130	1.08 1.04 0.999 11.4 4.8 16 0.948 0.942 0.192 118 36	0.930 0.957 3.05 2.67 1.05 1.89 0.526 0.960 1.05 3.73 1.25	20 20 20 20 20 20 20 20 20 20 20 20	
Silicon		16.4	mg/L	E200.7	0.589	5.00	1.000	8.93	743	70 - 130	13.8	16.8	20	2
Lab Sample ID: Test Code:	1608482-001BMSD 200.7-W	Date Analyzed: Date Prepared:	08/24/20 08/24/20											
Aluminum Boron Iron		7.99 1.15 11.2	mg/L mg/L mg/L	E200.7 E200.7 E200.7	0.0153 0.0163 0.00640	0.100 0.500 0.100	1.000 1.000 1.000	3.45 0 7.51	454 115 369	70 - 130 70 - 130 70 - 130 70 - 130	6.71 1.11 9.55	17.4 3.76 15.9	20 20 20	1
Potassium		13.3	mg/L	E200.7	0.121	1.00	10.00	1.36	119	70 - 130	12.7	4.37	ź	20

Report Date: 8/25/2016 Page 33 of 42

20

3.44

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.

1.00

10.00

0.0125

5.29

116

70 - 130

16.3

mg/L

E200.7

16.9



Barium

0.373

mg/L

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

Jose Rocha **QA** Officer

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

OC SUMMARY REPORT

Lab Set ID:	Utah Division of Water 1608482 Tibble Fork Dam	Quality					Contact: Dept: QC Type:	Kevin Ok ME : MSD	leberry					
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:	: 1608482-001BMSD 200.7-W	Date Analyzed: Date Prepared:	08/24/20 08/24/20											
Tin Titanium		0.786 1.06	mg/L mg/L	E200.7 E200.7	0.0129 0.000586	0.500 0.00500	1.000 1.000	0 0.0707	78.6 99.3	70 - 130 70 - 130	0.801 1.06	1.95 0.826	20 20	
-	: 1608482-001AMSD	0.214 Date Analyzed:	mg/L 08/24/20		0.000750	0.00500	0.2000	0.00766	103	70 - 130	0.208	2.62	20	
Test Code: Antimony Arsenic	200.8-DIS	Date Prepared: 0.183 0.203	08/24/201 mg/L mg/L	E200.8 E200.8	0.000306 0.000540	0.00200	0.2000	0.00424 0.00392	89.4 99.4	75 - 125 75 - 125	0.185 0.204	1.13 0.681	20 20	
Barium Beryllium		0.276 0.191	mg/L mg/L	E200.8 E200.8	0.000600 0.000177	0.00200 0.00200	0.2000 0.2000	0.0842 0	95.7 95.4	75 - 125 75 - 125	0.28 0.194	1.70 1.80	20 20	
Cadmium Chromium		0.193 0.199	mg/L mg/L	E200.8 E200.8	0.0000666 0.000998	0.000500 0.00200	0.2000 0.2000	0 0	96.5 99.4	75 - 125 75 - 125	0.195 0.199	1.31 0.211	20 20	
Cobalt Copper Lead		0.192 0.191 0.192	mg/L mg/L mg/L	E200.8 E200.8 E200.8	0.0000990 0.000862 0.000125	0.00400 0.00200 0.00200	0.2000 0.2000 0.2000	0.000178 0 0.000386	95.9 95.7 96.0	75 - 125 75 - 125 75 - 125	0.192 0.19 0.197	0.134 0.979 2.40	20 20 20	
Manganese Molybdenum		0.239 0.203	mg/L mg/L	E200.8 E200.8	0.000560	0.00200 0.00200	0.2000	0.0404 0.00255	99.5 100	75 - 125 75 - 125 75 - 125	0.236 0.207	1.42 2.03	20 20 20	
Nickel Selenium		0.196 0.200	mg/L mg/L	E200.8 E200.8	0.000522 0.000310	0.00200 0.00200	0.2000 0.2000	0.000701 0.000672	97.9 99.5	75 - 125 75 - 125	0.195 0.203	0.883 1.51	20 20	
Silver Thallium Zinc		0.189 0.193 0.955	mg/L mg/L mg/L	E200.8 E200.8 E200.8	0.000132 0.0000500 0.00452	0.00200 0.00200 0.00500	0.2000 0.2000 1.000	0 0 0	94.3 96.5 95.5	75 - 125 75 - 125 75 - 125	0.193 0.197 0.972	2.07 1.97 1.84	20 20 20	
Lab Sample ID Test Code:	: 1608482-001BMSD 200.8-W	Date Analyzed: Date Prepared:	08/24/201											
Antimony Arsenic		0.166 0.216	mg/L mg/L	E200.8 E200.8	0.000306 0.000540	0.00200 0.00200	0.2000 0.2000	0.00606 0.0198	80.2 98.3	75 - 125 75 - 125	0.175 0.223	4.82 2.86	20 20	

Report Date: 8/25/2016 Page 34 of 42

20

1.68

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.

0.00200

0.2000

0.155

109

75 - 125

0.367

0.000600

E200.8



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

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

QC SUMMARY REPORT

American West NALYTICAL LABORATORIES Client: Utah Division of Water Quality

Lab Set ID: 1608482

Project: Tibble Fork Dam

Kevin Okleberry
ME
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:	1608482-001BMSD	Date Analyzed:	08/24/201	6 1917h										
Test Code:	200.8-W	Date Prepared:	08/24/201	6 1058h										
Beryllium		0.197	mg/L	E200.8	0.000177	0.00200	0.2000	0.000406	98.3	75 - 125	0.199	1.09	20	
Cadmium		0.202	mg/L	E200.8	0.0000666	0.000500	0.2000	0.00313	99.5	75 - 125	0.204	0.982	20	
Chromium		0.209	mg/L	E200.8	0.000998	0.00200	0.2000	0.00522	102	75 - 125	0.208	0.449	20	
Cobalt		0.200	mg/L	E200.8	0.0000990	0.00400	0.2000	0.00461	97.7	75 - 125	0.2	0.110	20	
Copper		0.228	mg/L	E200.8	0.000862	0.00200	0.2000	0.0266	101	75 - 125	0.223	2.24	20	
Lead		0.447	mg/L	E200.8	0.000125	0.00200	0.2000	0.231	108	75 - 125	0.445	0.338	20	
Manganese		0.639	mg/L	E200.8	0.000560	0.00200	0.2000	0.423	108	75 - 125	0.637	0.293	20	
Molybdenum		0.185	mg/L	E200.8	0.000202	0.00200	0.2000	0.00179	91.4	75 - 125	0.193	4.33	20	
Nickel		0.210	mg/L	E200.8	0.000522	0.00200	0.2000	0.0102	99.7	75 - 125	0.21	0.0103	20	
Selenium		0.195	mg/L	E200.8	0.000310	0.00200	0.2000	0.000919	97.1	75 - 125	0.202	3.66	20	
Silver		0.195	mg/L	E200.8	0.000132	0.00200	0.2000	0.000621	96.9	75 - 125	0.198	1.62	20	
Thallium		0.194	mg/L	E200.8	0.0000500	0.00200	0.2000	0.000158	97.2	75 - 125	0.198	1.83	20	
Zinc		1.36	mg/L	E200.8	0.00452	0.00500	1.000	0.341	102	75 - 125	1.36	0.203	20	
Lab Sample ID:	1608482-002AMSD	Date Analyzed:	08/25/201	6 1423h										
Test Code:	6010D-S	Date Prepared:	08/24/201	6 1159h										
Aluminum		12,800	mg/kg-dry	SW6010D	249	757	151.4	12900	-52.9	75 - 125	13900	8.27	20	2
Calcium		55,400	mg/kg-dry	SW6010D	787	7,570	1,514	63300	-519	75 - 125	62000	11.3	20	2
Iron		15,800	mg/kg-dry	SW6010D	74.0	379	151.4	18400	-1,750	75 - 125	18000	13.2	20	2
Magnesium		12,200	mg/kg-dry	SW6010D	516	7,570	1,514	12800	-40.5	75 - 125	13900	12.7	20	2
Titanium		258	mg/kg-dry	SW6010D	7.80	37.9	151.4	164	62.2	75 - 125	268	3.67	20	3
Lab Sample ID:	1608482-002AMSD	Date Analyzed:	08/25/201	6 1443h										
Test Code:	6010D-S	Date Prepared:	08/24/201	6 1159h										
Potassium		5,510	mg/kg-dry	SW6010D	68.4	757	1,514	3670	122	75 - 125	5650	2.50	20	
Silicon		1,990	mg/kg-dry	SW6010D	35.6	379	151.4	1930	42.2	75 - 125	2130	6.72	20	2
Vanadium		70.5	mg/kg-dry	SW6010D	0.384	3.79	30.28	37.7	108	75 - 125	73.1	3.65	20	

Report Date: 8/25/2016 Page 35 of 42



Zinc

646

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha **QA** Officer

OC SUMMARY REPORT

Client: U	tah Division of Water	· Quality		-			Contact:	Kevin Ok	leberry					
ab Set ID: 16		Quality					Dept:	ME	lecenj					
	ibble Fork Dam						QC Type							
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:	1608482-002AMSD 6010D-S	Date Analyze Date Prepare												
Boron		164	mg/kg-dry	SW6010D	4.44	75.7	151.4	17.9	96.3	75 - 125	163	0.644	20	
Sodium		2,070	mg/kg-dry	SW6010D	27.6	151	1,514	395	110	75 - 125	2060	0.494	20	
Tin		142	mg/kg-dry	SW6010D	1.12	15.1	151.4	0	93.6	75 - 125	143	1.18	20	
-	1608482-002AMSD	Date Analyze												
Test Code:	6020B-S	Date Prepare	d: 08/24/201	6 1159h										
Antimony		32.4	mg/kg-dry	SW6020B	0.310	4.85	30.28	7.02	83.7	75 - 125	33.8	4.45	20	
Arsenic		59.0	mg/kg-dry	SW6020B	0.132	3.03	30.28	30.8	93.0	75 - 125	62.2	5.39	20	
Barium		183	mg/kg-dry	SW6020B	4.13	5.45	30.28	155	92.3	75 - 125	194	5.67	20	
Beryllium		28.5	mg/kg-dry	SW6020B	0.189	2.42	30.28	1.04	90.6	75 - 125	29.2	2.44	20	
Cadmium		32.6	mg/kg-dry	SW6020B	0.144	1.03	30.28	3.88	94.9	75 - 125	33.2	1.65	20	
Chromium		58.4	mg/kg-dry	SW6020B	8.48	12.1	30.28	26.2	106	75 - 125	58.6	0.363	20	
Cobalt		36.9	mg/kg-dry	SW6020B	0.842	1.64	30.28	9.32	91.0	75 - 125	37.6	2.08	20	
Copper		68.8	mg/kg-dry	SW6020B	6.54	18.8	30.28	43.1	85.1	75 - 125	71.7	4.16	20	
Lead		287	mg/kg-dry	SW6020B	0.276	7.87	30.28	267	65.2	75 - 125	304	5.58	20	3
Molybdenum		31.5	mg/kg-dry	SW6020B	1.88	24.2	30.28	0	104	75 - 125	31.9	1.50	20	
Nickel		54.6	mg/kg-dry	SW6020B	3.91	24.2	30.28	26.4	93.0	75 - 125	56.4	3.28	20	
Selenium		31.1	mg/kg-dry	SW6020B	0.170	10.3	30.28	0.967	99.6	75 - 125	31.6	1.52	20	
Silver		29.8	mg/kg-dry	SW6020B	0.109	1.82	30.28	1.21	94.4	75 - 125	30.3	1.63	20	
Thallium		28.5	mg/kg-dry	SW6020B	0.165	4.85	30.28	0.37	92.9	75 - 125	29.1	2.14	20	
Lab Sample ID:	1608482-002AMSD	Date Analyze	ed: 08/24/201	6 2119h										
Test Code:	6020B-S	Date Prepare	d: 08/24/201	6 1159h										
Manganese		595	mg/kg-dry	SW6020B	2.72	6.06	30.28	576	63.3	75 - 125	648	8.46	20	3
Lab Sample ID:	1608482-002AMSD	Date Analyze	ed: 08/25/201	6 734h										
Test Code:	6020B-S	Date Prepare	d: 08/24/201	6 1159h										

mg/kg-dry 151

151.4

509

90.4

75 - 125

689

Report Date: 8/25/2016 Page 36 of 42

20

6.50

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.

13.4

SW6020B



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha QA Officer

QC SUMMARY REPORT

		Reporting	Amount	Snike Ref.
Project:	Tibble Fork Dam		QC Type:	MSD
Lab Set ID:	1608482		Dept:	ME
Client:	Utah Division of Water Quality		Contact:	Kevin Okleberry

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:	1608482-003BMSD HG-DW-245.1	Date Analyzed: Date Prepared:	08/25/2010 08/24/2010											
Mercury		0.00356	mg/L	E245.1	0.00000559	0.000150	0.003330	0	107	80 - 120	0.00327	8.58	20	
Lab Sample ID: Test Code:	1608482-007AMSD HG-DW-DIS-245.1	Date Analyzed: Date Prepared:	08/25/2016 08/24/2016											
Mercury		0.00324	mg/L	E245.1	0.00000559	0.000150	0.003330	0	97.1	85 - 115	0.00364	11.6	20	
Lab Sample ID: Test Code:	1608482-002AMSD HG-S-7471B	Date Analyzed: Date Prepared:	08/25/2010 08/24/2010											
Mercury		0.918	mg/kg-dry	SW7471B	0.00139	0.0580	0.5799	0.286	109	80 - 120	0.92	0.208	20	

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

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

³ - Matrix spike recoveries and/or high RPDs indicate suspected sample non-homogeneity. The method is in control as indicated by the LCS.

Report Date: 8/25/2016 Page 37 of 42



Salt Lake City, UT 84119

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

QC SUMMARY REPORT

Kyle F. Gross Laboratory Director

RPD

Limit Qual

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

Jose Rocha QA Officer

Client: Utah Division of Water Quality **Contact:** Kevin Okleberry Lab Set ID: 1608482 Dept: WC QC Type: DUP Tibble Fork Dam **Project:** Reporting Spike Ref. **RPD Ref.** Amount Method MDL %REC % RPD Result Units Limit Spiked Limits Analyte Amount Amt Lab Sample ID: 1608482-001CDUP Date Analyzed: 08/24/2016 1328h Та at Code TEE W 2540D

Test Code: TSS-W-2540D										
Total Suspended Solids	748	mg/L	SM2540D	18.7	18.8		805	7.41	5	@
Lab Sample ID: 1608482-001CDUP Test Code: TURB-W-180.1	Date Analyzed	08/24/2016	5 1014h							
Turbidity	371	NTU	E180.1	0.213	1.00		322	14.1	20	
Lab Sample ID: 1608482-001CDUP Test Code: TVS-W-160.4	Date Analyzed	08/24/2016	5 1215h							
Total Volatile Solids	9.86	% of TS	E160.4	0	0.0100		15.5	44.7	5	@

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

Report Date: 8/25/2016 Page 38 of 42



Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha QA Officer

QC SUMMARY REPORT Kevin Okleberry **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1608482 WC Dept: QC Type: LCS **Project:** Tibble Fork Dam Reporting Spike Ref. **RPD Ref.** RPD Amount

Analyte		Result	Units	Method	MDL	Limit	Spiked	Amount	%REC	Limits	Amt	% RPD	Limit	Qual
Lab Sample ID: Test Code:	LCS-R93177 300.0-W	Date Analyzed:	08/24/201	16 1017h										
Chloride Sulfate		5.30 5.34	mg/L mg/L	E300.0 E300.0	0.00516 0.0201	0.100 0.750	5.000 5.000	0 0	106 107	90 - 110 90 - 110				
Lab Sample ID: Test Code:	LCS-R93157 ALK-W-2320B	Date Analyzed:	08/24/201	16 600h										
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-R93220 TSS-W-2540D	Date Analyzed:	08/24/201	16 1328h										
Total Suspended	Solids	108	mg/L	SM2540D	2.99	3.00	100.0	0	108	80 - 120				
Lab Sample ID: Test Code:	LCS-R93166 TURB-W-180.1	Date Analyzed:	08/24/201	16 1014h										
Turbidity		10.7	NTU	E180.1	0.0213	0.100	10.00	0	107	90 - 110				

Report Date: 8/25/2016 Page 39 of 42



Client:

Project:

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha **QA** Officer

QC SUMMARY REPORT Kevin Okleberry Utah Division of Water Quality **Contact:** Lab Set ID: 1608482 Dept: WC QC Type: MBLK Tibble Fork Dam

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-R93177 Test Code: 300.0-W	Date Analyzed:	08/24/201	6 941h										
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-R93157Test Code:ALK-W-2320B	Date Analyzed:	08/24/201	6 600h										
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-R93220Test Code:TSS-W-2540D	Date Analyzed:	08/24/201	6 1328h										
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.99	3.00								
Lab Sample ID:MB-R93166Test Code:TURB-W-180.1	Date Analyzed:	08/24/201	6 1014h										
Turbidity	< 0.100	NTU	E180.1	0.0213	0.100								
Lab Sample ID:MB-R93237Test Code:TVS-W-160.4	Date Analyzed:	08/24/201	6 1215h										
Total Volatile Solids	< 0.0100	% of TS	E160.4	0	0.0100								



Salt Lake City, UT 84119

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

QC SUMMARY REPORT

Kyle F. Gross Laboratory Director

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

Jose Rocha QA Officer

Kevin Okleberry **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1608482 Dept: WC QC Type: MS Tibble Fork Dam **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount Units Method MDL %REC % RPD Limit Qual Result Limit Spiked Limits Analyte Amount Amt Lab Sample ID: 1608482-001CMS 08/24/2016 1410h Date Analyzed: Test Code: 300.0-W 113 E300.0 0.103 2.00 100.0 90 - 110 Chloride 6.9 106 mg/L 197 E300.0 90 - 110 Sulfate mg/L 0.402 15.0 100.0 94.6 103

Lab Sample ID:	1608482-001CMS	Date Analyzed:	08/24/201	6 600h							
Test Code:	ALK-W-2320B										
Alkalinity (as Ca	CO3)	207	mg/L	SM2320B	1.38	10.0	50.00	156	102	80 - 120	

Report Date: 8/25/2016 Page 41 of 42



Alkalinity (as CaCO3)

205

mg/L

SM2320B

1.38

3440 South 700 West

Salt Lake City, UT 84119

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

Kyle F. Gross Laboratory Director

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

Jose Rocha QA Officer

QC SUMMARY REPORT

Lab Set ID:	Utah Division of Water 1608482 Tibble Fork Dam	Quality					Contact: Dept: QC Typ	: Kevin Ok WC e: MSD	leberry					
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:	1608482-001CMSD 300.0-W	Date Analyzed:	08/24/20	16 1427h										
Chloride Sulfate		113 199	mg/L mg/L	E300.0 E300.0	0.103 0.402	2.00 15.0	100.0 100.0	6.9 94.6	106 104	90 - 110 90 - 110	113 197	0.108 0.882	20 20	
Lab Sample ID Test Code:	1608482-001CMSD ALK-W-2320B	Date Analyzed:	08/24/20	16 600h										

10.0

50.00

156

98.4

80 - 120

207

0.875

10

Report Date: 8/25/2016 Page 42 of 42

Next Day Rush

WORK O	RDER Summary				Work Ord	ler: 1608482	Page 1 of 4
Client:	Utah Division of Water Quality				Due D	ate: 8/25/2016	
Client ID:	UTD200		Contact:	Toby Hooker			
Project:	Tibble Fork Dam		QC Leve	•	WO T	ype: Standard	
Comments:	Next Day Rush; QC 3. TCLP - metals	on set 1608483 as a 2	-			ype. Stundurd	
Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage	Dr
1608482-001A	4994980	8/23/2016 1225h	8/23/2016 1647h	200.7-DIS	Aqueous-Dissolved	df - dis met	1
					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 AG TL ZN	BA BE CD CR CO CU PB MN	MO NI SE	
				200.8-DIS-PR	· · · · · · · · · · · · · · · · · · ·	df - dis met	
				HG-DW-DIS-245.1		df - dis met	
	·			HG-DW-DIS-PR		df - dis met	
1608482-001B				200.7-W		df - met	
	····				CA FE MG K SI NA SN TI V		
				200.7-W-PR		df - met	
					BA BE CD CR CO CU PB MN	df - met MO NI SE	
				AG TL ZN			
				200.8-W-PR		df - met	
				HG-DW-245.1		df - met	
1608482-001C				HG-DW-PR		df - met	
1008482-0010				300.0-W 2 SEL Analytes: CL SO4	,	df - tss/tvs/turb	/wc
				ALK-W-2320B		df - tss/tys/turb	/wc
				3 SEL Analytes: ALK AI	KB ALKC		
				TSS-W-2540D		df - tss/tvs/turb	/wc
-				TURB-W-180.1		df - tss/tvs/turb	/wc
				TVS-W-160.4		df - tss/tvs/turb	/wc
1608482-002A	4994980-SED	8/23/2016 1225h	8/23/2016 1647h	3051A-ICPMS-PR	Soil	df - metals	1
				6010D-S		df - metals	
					CA FE MG K SI NA SN TI V		······
				6020B-S 16 SEL Analytes: SB AS AG TL ZN	BA BE CD CR CO CU PB MN	df - metals MO NI SE	
				HG-S-7471B		df - metals	

COC Emailed

D

	RDER Summary					er: 1608482 Page 2 of
Client:	Utah Division of Water Quality				Due Dat	te: 8/25/2016
Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1608482-002A	4994980-SED	8/23/2016 1225h	8/23/2016 1647h	HG-S-PR-B	Soil	df - metals
		wei and a state of the second st		PMOIST		df - metals
1608482-003A	5912840	8/23/2016 1425h	8/23/2016 1647h	200.7-DIS	Aqueous-Dissolved	df - dis met
				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
				AG TL ZN	S BA BE CD CR CO CU PB MN M	IO NI SE
	- 	· · · · · · · · · · · · · · · · · · ·		200.8-DIS-PR		df - dis met
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
1608482-003B				200.7-W		df - met
				11 SEL Analytes: AL B	CA FE MG K SI NA SN TI V	
				200.7-W-PR		df - met
				200.8-W		df - met
				16 SEL Analytes: SB A AG TL ZN	S BA BE CD CR CO CU PB MN N	MO NI SE
				200.8-W-PR		df - met
				HG-DW-245.1		df - met
				HG-DW-PR		df - met
1608482-003C				300.0-W		df - tss/tvs/turb/wc
				2 SEL Analytes: CL SC)4	
				ALK-W-2320B		df - tss/tvs/turb/wc
				3 SEL Analytes: ALK A	ALKB ALKC	
				TSS-W-2540D		df - tss/tvs/turb/wc
				TURB-W-180.1		df - tss/tvs/turb/wc
n				TVS-W-160.4		df - tss/tvs/turb/wc
1608482-004A	5912840-SED	8/23/2016 1425h	8/23/2016 1647h	3051A-ICPMS-PR	Soil	df - metals
				6010D-S		df - metals
				11 SEL Analytes: AL B	B CA FE MG K SI NA SN TI V	
				6020B-S		df - metals
				16 SEL Analytes: SB A AG TL ZN	IS BA BE CD CR CO CU PB MN N	MO NI SE
				HG-S-7471B		df - metals
				HG-S-PR-B		df - metals
				PMOIST		df - metals
1608482-005A	5912810	8/23/2016 1445h	8/23/2016 1647h	200.7-DIS 11 SEL Analytes: AL B	Aqueous-Dissolved 3 CA FE MG K SI NA SN TI V	df - dis met
					· · · · · · · · · · · · · · · · · · ·	

Printed: 8/24/2016 FOR LABORATORY USE ONLY [fill out on page 1]: %M 🗌 RT 🗌 CN 🗌 TAT 🗌 QC 🗌 HOK_____ HOK_____ HOK_____ COC Emailed_

WORK O	RDER Summary				Work Orde	er: 1608482 Page 3 of
Client:	Utah Division of Water Quality				Due Dat	e: 8/25/2016
Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
608482-005A	5912810	8/23/2016 1445h	8/23/2016 1647h	200.7-DIS-PR	Aqueous-Dissolved	df - dis met
				200.8-DIS		df - dis met
				16 SEL Analytes: SI AG TL ZN	3 AS BA BE CD CR CO CU PB MN M	O NI SE
				200.8-DIS-PR		df - dis met
				HG-DW-DIS-245.1		df - dis met
				HG-DW-DIS-PR		df - dis met
608482-005B				200.7-W		df - met
				11 SEL Analytes: A.	L B CA FE MG K SI NA SN TI V	
				200.7-W-PR		df - met
				200.8-W		df - met
				16 SEL Analytes: SI AG TL ZN	B AS BA BE CD CR CO CU PB MN M	IO NI SE
				200.8-W-PR		df - met
				HG-DW-245.1		df - met
				HG-DW-PR		df - met
608482-005C				300.0-W		df - tss/tvs/turb/wc
				2 SEL Analytes: CL	SO4	
				ALK-W-2320B		df - tss/tvs/turb/wc
				3 SEL Analytes: AL	K ALKB ALKC	
				TSS-W-2540D		df - tss/tvs/turb/wc
				TURB-W-180.1		df - tss/tvs/turb/wc
				TVS-W-160.4		df - tss/tvs/turb/wc
608482-006A	5912810-SED	8/23/2016 1445h	8/23/2016 1647h	3051A-ICPMS-PR	Soil	df - metals
				6010D-S		df - metals
					L B CA FE MG K SI NA SN TI V	
				6020B-S		df - metals
				16 SEL Analytes: S AG TL ZN	B AS BA BE CD CR CO CU PB MN N	10 NI SE
				HG-S-7471B		df - metals
				HG-S-PR-B		df - metals
				PMOIST		df - metals
608482-007A	4994990	8/23/2016 1500h	8/23/2016 1647h	200.7-DIS	Aqueous-Dissolved	df - dis met
			0/20/2010 10 //		L B CA FE MG K SI NA SN TI V	
				200.7-DIS-PR		df - dis met
				200.8-DIS		df - dis met
					B AS BA BE CD CR CO CU PB MN 1	
				200.8-DIS-PR		df - dis met

WORK O	RDER Summary				Work Order:	1608482 Page 4 of
Client:	Utah Division of Water Quality				Due Date:	8/25/2016
Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1608482-007A	4994990	8/23/2016 1500h	8/23/2016 1647h	HG-DW-DIS-245.1	Aqueous-Dissolved	df - dis met
				HG-DW-DIS-PR		df - dis met
1608482-007B				200.7-W		df - met
				11 SEL Analytes: AL B	CA FE MG K SI NA SN TI V	
				200.7-W-PR		df - met
				200.8-W		df - met
				16 SEL Analytes: SB AS AG TL ZN	S BA BE CD CR CO CU PB MN MO	NI SE
				200.8-W-PR		df - met
				HG-DW-245.1		df - met
				HG-DW-PR		df - met
1608482-007C				300.0-W		df - tss/tvs/turb/wc
				2 SEL Analytes: CL SO	4	
				ALK-W-2320B		df - tss/tvs/turb/wc
				3 SEL Analytes: ALK A	LKB ALKC	
				TSS-W-2540D		df - tss/tvs/turb/wc
				TURB-W-180.1		df - tss/tvs/turb/wc
		*****		TVS-W-160.4		df - tss/tvs/turb/wc
1608482-008A	499490-SED	8/23/2016 1500h	8/23/2016 1647h	3051A-ICPMS-PR	Soil	df - metals
				6010D-S		df - metals
				11 SEL Analytes: AL B	CA FE MG K SI NA SN TI V	
				6020B-S		df - metals
				16 SEL Analytes: SB A AG TL ZN	S BA BE CD CR CO CU PB MN MO	NI SE
				HG-S-7471B		df - metals
				HG-S-PR-B		df - metals
				PMOIST		df - metals

												-	₩.	2-Day TCLP DY Next Day	- 1105×483
American W								СН	٩IN	OF	CL	JST	O	DY Nentbury	11 05/197
Analytical Labor 3440 S. 700 W. Sait Lake City							ng NEL	AP accre	dited m	ethods a	and all d	lata will b	be rep	orted using AWAL's standard analyte lists and	AWAL Lab Sample Set #
Phone # (801) 263-8686 Toll Free	· · ·		, 				ess spec	ifically re					n of C	ustody and/or attached documentation.	Page of
Fax # (801) 263-8687 Email a				QC 1 2	C Lev	~			\cap	n Aro 2 3 4				Unless other arrangements have been made, signed reports will be emailed by	82510
www.awal-labs.	:0111		┝		2+(<u></u>		<u></u>			+ 5 .	Sinu		5:00 pm on the day they are due.	
Client: DIV. Water Quality Address: 195 N. 1950W.							F			*				 Report down to the MDL Include EDD: Lab Filter for: 	Laboratory Use Only
Address: 145 10, 1950 W. SLC, WT 84/41				 '	5	x .	10		l IS	57				Field Filtered For:	Samples Were:
contact: Toby Hooker					WCP 45	1									1 Shipped or hand delivered 2 Ambient or Chilled
Phone #: 801-536-4289 Cell #: _						z ł	3	1	10 hal	E				For Compliance With:	3 Temperature 5.3 °C
Email: tobyhooker on utah					Ĵ.	₅ .			J	D,				□ RCRA □ CWA □ SDWA	4 Received Broken/Leaking
Project Name: Tibble Greek Fork	Dam			ľ	1		35	li itu	5	Z		Ø	\neg	□ SDWA □ ELAP / A2LA □ NLLAP	(Improperly Seale Y
Project #:				4	+	- 1		2	Sca	1		Ŧ		Non-ComplianceOther:	5 Y N Checked at
Sampler Name:			Containers	/atrix				Ak	a-	Ę		ri			6 Received Within
		Time	# of Con	Sample Matrix		Ŀŀ	Dring		L H	5	Ť	Â		Known Hazards &	Honding Times
Sample ID:	Date Sampled	Sampled			-	~ ~		X		\vdash	X	x		Sample Comments	
499 4980 - SED	8/23/16	laas		5				+	X	X	X				COC Tape Was;
5912840	8/23/16	1425	3	W \	()	XX	×	X			X	X			1 Present on Outer Package Y N NA
5912840 - SED	8/23/16	1425		<u>\$</u>		_			X	X	X				2 Unbroken on Outer Package Y N NA
5912810 5912810-SED	8/23/16	1445 1445		$\frac{W}{S}$	<u>< }</u>	x 1	<u> </u>	X	\mathbf{x}	x	X X	X			3 Present on Sample
499 4990	8/23/16	1500		-	x h	x 1	< x	X		┢╲	$\mathbf{\hat{x}}$	X			Y N (NÀ)
4994990 - SED	8/23/16	1500		S				\uparrow	x	X	X	-			4 Unbroken on Sample Y N NA
										Ľ					Discrepancies Between Sample
0							_								Labels and COC Record? Y
2					_		+	+	-						
Relinquished by:	Date: 8/13/4	Received by:	$\overline{\Lambda}$) (0	Ĵ.	<u> </u>	K			$\overline{)}$	Date:	23	Īn.	Special Instructions:	
Signature Print Name: Toby Hooker	Time: 1647	Signature Print Name:	1 k			and the second s	3	121 IN	in	\leq	Timo	6.4			
Relinquished by: Signature	Date:	Received by: Signature				,					Date:				
Print Name: Belinguished by:	Time: Date:	Print Name:									Time:				
Signature	Time:	Signature									Time:				
Print Name: Relinquished by:	Date:	Print Name: Received by:					÷				Date:			 	
Signature	Time:	Signature Print Name:									Time:				
Print Name:	Date:	Print Name: Received by: Signature									Date:				

Lab Set ID: 1008482 pt Lot # 5003

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	-001	-003	-005	-007		et Later						
Ammonia	pH <2 H ₂ SO ₄												
COD	pH <2 H ₂ SO ₄												
Cyanide	pH>12 NaOH												
Metals	pH <2 HNO ₃	yes	yes	Nes	ves								
NO ₂ & NO ₃	$pH < 2 H_2SO_4$	/	1	1	1								
0&G	pH <2 HCL												
Phenols	pH <2 H ₂ SO ₄												
Sulfide	pH > 9NaOH, Zn Acetate												
TKN	pH <2 H ₂ SO ₄												
T PO ₄	pH <2 H ₂ SO ₄							 					

Procedure:

1) Pour a small amount of sample in the sample lid

2) Pour sample from Lid gently over wide range pH paper

3) **Do Not** dip the pH paper in the sample bottle or lid

4) If sample is not preserved, properly list its extension and receiving pH in the appropriate column above

5) Flag COC, notify client if requested

6) Place client conversation on COC

7) Samples may be adjusted

Frequency: All samples requiring preservation

- * The sample required additional preservative upon receipt.
- + The sample was received unpreserved.
- ▲ The sample was received unpreserved and therefore preserved upon receipt.
- # The sample pH was unadjustable to a pH < 2 due to the sample matrix.
- The sample pH was unadjustable to a pH > _____ due to the sample matrix interference.