U.S. Environmental Protection Agency
Region 8
Technical and Management Services

Laboratory Services Program

Certificate of Analysis

Ref: 8TMS-L

MEMORANDUM

Date: 12/08/16

Subject: Analytical Results--- **Bonita Peak_Water 3_OCT_2016_A128 / A-128**

From: Don Goodrich; EPA Region 8 Analytical Chemistry WAM

To: Rebecca Thomas
Superfund
1595 Wynkoop Street

Received Sample Set(s), [Work Order : Date Received]:
[C161021 : 10/21/2016]

Attached are the analytical results for the samples received from the Bonita Peak_Water 3_OCT_2016_A128 sampling event, according to TDF A-128. All analyses were performed within their method specified holding times unless otherwise noted in the following narrative.

These samples were prepared, analyzed, and verified by the Environmental Services Assistance Team Laboratory (ESAT) according to the requirements of the Technical Direction Form (TDF).

Note: The laboratory herewith transmits this deliverable to the program/project partner for determination of "final data usability" which may include data validation and data quality asessment per and in accordance with EPA QA/G-8, *Guidance on Environmental Data Verification and Data Validation*, November 2002, EPA/240/R-02/004. Laboratory data qualifiers are applied based on the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* October 2004, referred to as "NFGI".

Laboratory policy is to dispose of any remaining sample 60 days after data analysis packages are delivered to EPA. If you would like the laboratory to retain the samples for a period longer than 60 days, please contact Don Goodrich within the 60 day period at (303) 312-6687.

Case Narrative

C161021

Quality Assessment: Unless indicated by exception, the QA/QC associated with this sample set produced data within the TDF-specified criteria.

Holding Times: All samples were analyzed within their method-specified technical holding time(s).

Sample Receipt Notes: Cooler Temperature was greater than 6.0C. Temperature was 12.8C.

1. Initial and Continuing calibration blanks (ICBs and CCBs).
   Exceptions: None.
2. Preparation (PB) / Method blanks (MB)
   Exceptions: None.
3. Interference Checks (ICSA / ICSAB) for ICP-MS and ICP-OE analyses only.
   Exceptions: None.
4. Initial and Continuing calibration verification analyses (ICVs, SCVs and CCVs).
   Exceptions: None.
5. Laboratory Control Sample (LCS) or second source analysis or SRM.
   Exceptions: None.
6. Laboratory Fortified blank (LFB) / Blank spike (BS), same source as used for the matrix spikes. PBS performed with analyses/methods requiring preparation or digestion prior to analysis.
   Exceptions: None.
7. Contract Reporting Detection Limit Standard, labeled as CRA, CRDL or CRL.
   Exceptions: None.
8. Laboratory Duplicate (DUP). "Source" identifies field sample duplicated in the laboratory. If either the "source" or the duplicate result is <5X the reporting limit, the %D limit of 20% does not apply.
   Exceptions: None.
9. Laboratory Matrix Spike (MS) and spike duplicate (MSD). "Source" defines original field sample fortified prior to analysis. Percent recovery (%R) limits do not apply when sample concentration(s) exceed the corresponding analyte spike level by a factor of 4 or greater.
   Exceptions: None.
10. Serial Dilution sample analysis (SRD). "Source" is parent field sample diluted 1:5 in the laboratory. Performed for ICP-OE and ICP-MS metals analyses. Percent difference (%D) limits do not apply when analyte concentration(s) are below 50x the source sample's MDL (or 10x it's PQL).
    Exceptions: None.
11. Internal standards, criteria specified for ICP-MS analyses only, monitored at the instrument.
    Exceptions: None.
12. Any calibration using more than two-points produced a correlation coefficient equal to or greater than 0.995.
    Exceptions: None.

Acronyms and Definitions:

ESAT	Environmental Services Assistance Team
J	Data Estimated qualifier (also applied to all data less than PQL, greater than or equal to MDL)
MDL	Method Detection Limit
PQL	Practical Quantitation Limit, also known as reporting limit.
RPD	Relative Percent Difference (difference divided by the mean)
%D	Percent difference, serial dilution criteria unit, difference divided by the original result.
%R	Percent recovery, analyzed (less sample contribution) divided by true value
<	Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
mg/L	Parts per million (millligrams per liter). Solids equivalent = mg/Kg.
ug/L	Parts per billion (micrograms per liter). Solids equivalent = ug/Kg.
NR	No Recovery (matrix spike) - Often seen for calcium/magnesium when their concentration exceeds the spike level by > 4x.
NFGI	*USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* October 2004
RE	Sample Re-analysis. Usually seen on raw data and sequences for required sample dilutions due to over-range analytes.
U	Analyte not detected at or above MDL qualifier
D	Diluted value qualifier.

Method(s) Summary:

As defined in the Technical Direction Form (TDF), some or all of the methods listed below were used for the determination of the reported target analytes.

From EPA's *Methods for the Determination of Metals in Environmental Samples* , Supplement I, May 1994, dissolved, total, and/or total recoverable metals were determined by:

- Method 200.7 / 6010B using a PE Optima ICP -OE (ICP).
- Method 200.8 / 6020 using a Perkin -Elmer Elan 6000 ICP-MS.
- Method 200.2 for total recoverable metals (only) dige stion.
- Method 245.1 using a Perkin -Elmer FIMS CVAA (aqueous mercury only).

From *Standard Methods for the Examination of Water and Wastewater* , 18th Edition, 1992, Method 2340B was used for the calculated hardness determination. Hardness is reported as mg (milligram) equivalent $CaCO_3$ per liter (L) determined as follows:

Calculated hardness = 2.497 * (Calcium, mg/L) + 4.118 * (Magnesium, mg/L).

From *EPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW -846*,

- Method 3015A was used for microwave assisted total metals digestion.
- Method 7473 was used for mercury in solids .

From EPA's *Determination of Inorganic Anions by Ion Chromatography* , Revision 2.1, 1993, Method 300.0 was used to determine the anions.

From EPA's *Methods for Chemical Analysis of Water and Wastes* , March 1983:

- Method 310.1 was followed for the alkalinity determination.
- Method 160.1 was followed for gravimetric total dissolved solids (TDS) determination.
- Method 160.2 was used for gravimetric total suspended sol ids (TSS) determination.
- Method 415.3 was used for total organic carbon (TOC) determination using either an Apollo 9000 or Phoenix 8000 Non-Dispersive IR (NDIR) system. Also known as dissolved organic carbon (DOC) when performed on the dissolved sample fraction.

The quality control procedures listed in the TDF request were utilized by ESAT to verify accuracy of the results and to evaluate any matrix interferences.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS71-SS-00-EPA **Date / Time Sampled:** 10/17/16 12:00 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-03 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**45.5**	J	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**125000**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Iron**	**4810**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**5860**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**2140**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**14900**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**1130**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Zinc**	**305**		ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
2340B	**Hardness**	**337**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS72-SS-00-EPA **Date / Time Sampled:** 10/17/16 13:00 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-06 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**105**		ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**201000**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Iron**	**7270**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**16300**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**3950**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**11800**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**596**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Zinc**	**517**		ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	**Copper**	**2.87**	J	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	**Nickel**	**8.76**		ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
2340B	**Hardness**	**569**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS73-SS-00-EPA **Date / Time Sampled:** 10/17/16 13:30 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-09 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**424**		ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**173000**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Iron**	**18000**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**14300**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**3450**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**15600**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**824**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Zinc**	**462**		ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	**Copper**	**6.73**		ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	**Nickel**	**4.86**	J	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
2340B	**Hardness**	**491**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS74-SS-00-EPA **Date / Time Sampled:** 10/17/16 14:00 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-12 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**7780**		ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**169000**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Iron**	**24700**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**18600**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**3860**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**16000**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**491**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Zinc**	**1030**		ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	**Cadmium**	**6.49**		ug/L	0.500	5	12/08/2016	SV	1612039
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	**Copper**	**373**		ug/L	2.50	5	12/08/2016	SV	1612039
200.8	**Lead**	**0.850**	J	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	**Nickel**	**17.1**		ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
2340B	**Hardness**	**500**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS75-SS-00-EPA **Date / Time Sampled:** 10/17/16 15:00 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-15 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**81.5**		ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**182000**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Iron**	**6260**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**11300**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**2160**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**8280**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**756**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Zinc**	**458**		ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1612039
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	**Lead**	**2.56**		ug/L	0.500	5	12/08/2016	SV	1612039
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1612039
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1612039
2340B	**Hardness**	**500**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS76-SS-00-EPA **Date / Time Sampled:** 10/18/16 10:30 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-18 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**20.2**	J	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**5390**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**470**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**5.57**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**2320**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**28.0**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	**Copper**	**0.644**	J	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	**Lead**	**0.109**	J	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	**Hardness**	**15**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS77-SS-00-EPA **Date / Time Sampled:** 10/18/16 11:15 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-21 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**16500**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**736**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**3770**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**171**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	**Chromium**	**1.10**	J	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Copper	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Lead	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	**Hardness**	**44**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS78-SS-00-EPA **Date / Time Sampled:** 10/18/16 11:45 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-24 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**23400**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**860**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**3170**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**229**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Copper	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Lead	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	**Hardness**	**62**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS78-SS-30-EPA **Date / Time Sampled:** 10/18/16 11:45 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-27 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**23500**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**855**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**3160**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**228**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	**Chromium**	**1.17**	J	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Copper	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Lead	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	**Hardness**	**62**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS79-SS-00-EPA **Date / Time Sampled:** 10/18/16 12:30 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-30 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**26900**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**1440**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**3330**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**133**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	**Copper**	**0.916**	J	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Lead	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	**Hardness**	**73**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS80-SS-00-EPA **Date / Time Sampled:** 10/18/16 13:00 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-33 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**13800**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**975**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**2.95**	J	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Silica (SiO2)	< 1000	U	ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**46.1**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	**Copper**	**1.17**		ug/L	0.500	1	12/08/2016	SV	1612039
200.8	**Lead**	**0.104**	J	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	**Hardness**	**39**		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SS80-SS-90-EPA **Date / Time Sampled:** 10/18/16 14:00 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-36 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Calcium	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	Magnesium	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**1760**		ug/L	250	1	12/08/2016	SV	1612038
200.7	Strontium	< 10.0	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Copper	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Lead	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	Hardness	< 2		mg/L	2	1	12/08/2016	SV	1612038

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: SW81-SW-00-EPA **Date / Time Sampled:** 10/18/16 15:30 **Workorder:** C161021
EPA Tag No.: 8-C **Matrix:** Water **Lab Number:** C161021-39 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**25.0**	J	ug/L	20.0	1	12/08/2016	SV	1612038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Calcium**	**49400**		ug/L	100	1	12/08/2016	SV	1612038
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1612038
200.7	**Magnesium**	**2700**		ug/L	100	1	12/08/2016	SV	1612038
200.7	**Manganese**	**2.15**	J	ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Silica (SiO2)**	**5210**		ug/L	250	1	12/08/2016	SV	1612038
200.7	**Strontium**	**513**		ug/L	2.00	1	12/08/2016	SV	1612038
200.7	**Zinc**	**36.9**		ug/L	10.0	1	12/08/2016	SV	1612038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Cadmium	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	**Copper**	**0.893**	J	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Lead	< 0.200	U	ug/L	0.100	1	12/08/2016	SV	1612039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
200.8	Silver	< 1.00	U	ug/L	0.500	1	12/08/2016	SV	1612039
200.8	Thallium	< 2.00	U	ug/L	1.00	1	12/08/2016	SV	1612039
2340B	**Hardness**	**135**		mg/L	2	1	12/08/2016	SV	1612038

"J" Qualifier indicates an estimated value

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS71-SS-00-EPA **Date / Time Sampled:** 10/17/16 12:00 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-02 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**52.1**		ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**124000**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Iron**	**4800**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**5740**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**2140**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**14800**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**1140**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Zinc**	**299**		ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS72-SS-00-EPA **Date / Time Sampled:** 10/17/16 13:00 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-05 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**190**		ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**202000**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Iron**	**12300**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**16500**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**4020**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**12300**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**610**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Zinc**	**535**		ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	**Copper**	**4.70**	J	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Lead**	**1.75**		ug/L	0.500	5	12/08/2016	SV	1611171
200.8	**Nickel**	**8.48**		ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Thallium**	**15.7**		ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS73-SS-00-EPA **Date / Time Sampled:** 10/17/16 13:30 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-08 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**637**		ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**170000**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Iron**	**23700**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**14300**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**3460**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**16100**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**835**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Zinc**	**457**		ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	**Copper**	**11.0**		ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Lead**	**1.98**		ug/L	0.500	5	12/08/2016	SV	1611171
200.8	**Nickel**	**5.70**		ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Thallium**	**17.8**		ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS74-SS-00-EPA **Date / Time Sampled:** 10/17/16 14:00 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-11 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**8110**		ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**167000**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Iron**	**25100**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**18600**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**3920**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**16600**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**499**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Zinc**	**1020**		ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Arsenic**	**3.68**	J	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Cadmium**	**6.22**		ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	**Copper**	**367**		ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Lead**	**23.9**		ug/L	0.500	5	12/08/2016	SV	1611171
200.8	**Nickel**	**17.2**		ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS75-SS-00-EPA **Date / Time Sampled:** 10/17/16 15:00 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-14 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**86.8**		ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**180000**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Iron**	**6350**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**11200**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**2160**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**8230**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**771**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Zinc**	**443**		ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	**Lead**	**3.49**		ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS76-SS-00-EPA **Date / Time Sampled:** 10/18/16 10:30 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-17 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**32.1**	J	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**5350**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Iron**	**106**	J	ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**467**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**5.78**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**2330**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**28.6**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS77-SS-00-EPA **Date / Time Sampled:** 10/18/16 11:15 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-20 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**16400**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**741**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**3800**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**175**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS78-SS-00-EPA **Date / Time Sampled:** 10/18/16 11:45 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-23 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**22200**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**860**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**3200**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**240**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS78-SS-30-EPA **Date / Time Sampled:** 10/18/16 11:45 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-26 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**21700**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**844**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**3170**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**239**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS79-SS-00-EPA **Date / Time Sampled:** 10/18/16 12:30 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-29 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**33.3**	J	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**25400**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**1440**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**3320**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**138**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS80-SS-00-EPA **Date / Time Sampled:** 10/18/16 13:00 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-32 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**32.3**	J	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**13100**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**984**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**4.02**	J	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Silica (SiO2)	< 1000	U	ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**48.0**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SS80-SS-90-EPA **Date / Time Sampled:** 10/18/16 14:00 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-35 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Calcium	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	Magnesium	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	Manganese	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**1690**		ug/L	250	1	12/08/2016	SV	1611171
200.7	Strontium	< 10.0	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	Zinc	< 20.0	U	ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: SW81-SW-00-EPA **Date / Time Sampled:** 10/18/16 15:30 **Workorder:** C161021
EPA Tag No.: 8-B **Matrix:** Water **Lab Number:** C161021-38 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	**Aluminum**	**28.0**	J	ug/L	20.0	1	12/08/2016	SV	1611171
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Calcium**	**50200**		ug/L	100	1	12/08/2016	SV	1611171
200.7	Iron	< 250	U	ug/L	100	1	12/08/2016	SV	1611171
200.7	**Magnesium**	**2740**		ug/L	100	1	12/08/2016	SV	1611171
200.7	**Manganese**	**3.25**	J	ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Silica (SiO2)**	**4930**		ug/L	250	1	12/08/2016	SV	1611171
200.7	**Strontium**	**511**		ug/L	2.00	1	12/08/2016	SV	1611171
200.7	**Zinc**	**36.3**		ug/L	10.0	1	12/08/2016	SV	1611171
200.8	Antimony	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Chromium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Copper	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Lead	< 1.00	U	ug/L	0.500	5	12/08/2016	SV	1611171
200.8	Nickel	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Selenium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171
200.8	Silver	< 5.00	U	ug/L	2.50	5	12/08/2016	SV	1611171
200.8	Thallium	< 10.0	U	ug/L	5.00	5	12/08/2016	SV	1611171

"J" Qualifier indicates an estimated value

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS71-SS-00-EPA **Date / Time Sampled:** 10/17/16 12:00 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-01 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 1.6	U	mg/L	0.8	2	11/10/2016	NP	1611009
EPA 300.0	**Fluoride**	**1.8**		mg/L	0.2	2	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.4	U	mg/L	0.2	2	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**261**		mg/L	2.0	2	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS72-SS-00-EPA **Date / Time Sampled:** 10/17/16 13:00 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-04 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 3.2	U	mg/L	1.6	4	11/11/2016	NP	1611009
EPA 300.0	**Fluoride**	**1.3**		mg/L	0.4	4	11/11/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.8	U	mg/L	0.4	4	11/11/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**537**		mg/L	4.0	4	11/11/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS73-SS-00-EPA **Date / Time Sampled:** 10/17/16 13:30 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-07 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 1.6	U	mg/L	0.8	2	11/10/2016	NP	1611009
EPA 300.0	**Fluoride**	**1.4**		mg/L	0.2	2	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.4	U	mg/L	0.2	2	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**467**		mg/L	2.0	2	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS74-SS-00-EPA **Date / Time Sampled:** 10/17/16 14:00 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-10 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 3.2	U	mg/L	1.6	4	11/10/2016	NP	1611009
EPA 300.0	**Fluoride**	**1.6**		mg/L	0.4	4	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.8	U	mg/L	0.4	4	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**661**		mg/L	4.0	4	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS75-SS-00-EPA **Date / Time Sampled:** 10/17/16 15:00 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-13 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 1.6	U	mg/L	0.8	2	11/10/2016	NP	1611009
EPA 300.0	**Fluoride**	**1.2**		mg/L	0.2	2	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.4	U	mg/L	0.2	2	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**427**		mg/L	2.0	2	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS76-SS-00-EPA **Date / Time Sampled:** 10/18/16 10:30 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-16 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	Fluoride	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**10.4**		mg/L	1.0	1	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS77-SS-00-EPA **Date / Time Sampled:** 10/18/16 11:15 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-19 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	Fluoride	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Nitrate/Nitrite as N**	**0.2**		mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**5.0**		mg/L	1.0	1	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS78-SS-00-EPA **Date / Time Sampled:** 10/18/16 11:45 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-22 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	Fluoride	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Nitrate/Nitrite as N**	**0.5**		mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**11.2**		mg/L	1.0	1	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS78-SS-30-EPA **Date / Time Sampled:** 10/18/16 11:45 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-25 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	Fluoride	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Nitrate/Nitrite as N**	**0.5**		mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**11.2**		mg/L	1.0	1	11/10/2016	NP	1611009

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS79-SS-00-EPA **Date / Time Sampled:** 10/18/16 12:30 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-28 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	Fluoride	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Nitrate/Nitrite as N**	**0.3**		mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**55.3**		mg/L	1.0	1	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS80-SS-00-EPA **Date / Time Sampled:** 10/18/16 13:00 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-31 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	Fluoride	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**25.5**		mg/L	1.0	1	11/10/2016	NP	1611009

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SS80-SS-90-EPA **Date / Time Sampled:** 10/18/16 14:00 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-34 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	Fluoride	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	Sulfate as SO4	< 2.0	U	mg/L	1.0	1	11/10/2016	NP	1611009

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: SW81-SW-00-EPA **Date / Time Sampled:** 10/18/16 15:30 **Workorder:** C161021
EPA Tag No.: 8-A **Matrix:** Water **Lab Number:** C161021-37 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 300.0	Chloride	< 0.8	U	mg/L	0.4	1	11/10/2016	NP	1611009
EPA 300.0	**Fluoride**	**0.3**		mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	Nitrate/Nitrite as N	< 0.2	U	mg/L	0.1	1	11/10/2016	NP	1611009
EPA 300.0	**Sulfate as SO4**	**116**		mg/L	1.0	1	11/10/2016	NP	1611009

"J" Qualifier indicates an estimated value

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
ICPMS-PE DRC-II									
Batch 1612039 - No Lab Prep Reqd			***Water***						**ICPMS-PE DRC-II**
Method Blank (1612039-BLK1)		Dilution Factor: 1				Prepared: 12/07/16 Analyzed: 12/08/16			
Chromium	< 1.00	2.00	ug/L						
Nickel	< 0.500	1.00	"						
Copper	< 0.500	1.00	"						
Arsenic	< 0.500	2.00	"						
Selenium	< 1.00	2.00	"						
Silver	< 0.500	1.00	"						
Cadmium	< 0.100	0.200	"						
Antimony	< 0.500	1.00	"						
Thallium	< 1.00	2.00	"						
Lead	< 0.100	0.200	"						
Method Blank Spike (1612039-BS1)		Dilution Factor: 1				Prepared: 12/07/16 Analyzed: 12/08/16			
Chromium	94.7	2.00	ug/L	100		95	85-115		
Nickel	94.2	1.00	"	100		94	85-115		
Copper	96.1	1.00	"	100		96	85-115		
Arsenic	90.3	2.00	"	100		90	85-115		
Selenium	505	2.00	"	500		101	85-115		
Silver	92.8	1.00	"	100		93	85-115		
Cadmium	95.7	0.200	"	100		96	85-115		
Antimony	100	1.00	"	100		100	85-115		
Thallium	91.0	2.00	"	100		91	85-115		
Lead	92.3	0.200	"	100		92	85-115		
Duplicate (1612039-DUP1)		Dilution Factor: 5	**Source: C161021-03**			Prepared: 12/07/16 Analyzed: 12/08/16			
Chromium	< 5.00	10.0	ug/L		< 5.00				20
Nickel	< 2.50	5.00	"		< 2.50				20
Copper	< 2.50	5.00	"		< 2.50				20
Arsenic	< 2.50	10.0	"		< 2.50				20
Selenium	< 5.00	10.0	"		< 5.00				20
Silver	< 2.50	5.00	"		< 2.50				20
Cadmium	< 0.500	1.00	"		< 0.500				20
Antimony	< 2.50	5.00	"		< 2.50				20
Thallium	< 5.00	10.0	"		< 5.00				20
Lead	< 0.500	1.00	"		< 0.500				20

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1612039 - No Lab Prep Reqd			*Water*						ICPMS-PE DRC-II
Matrix Spike (1612039-MS1)		Dilution Factor: 5	**Source: C161021-03**			Prepared: 12/07/16 Analyzed: 12/08/16			
Chromium	90.4	10.0	ug/L	100	< 5.00	90	70-130		
Nickel	91.0	5.00	"	100	< 2.50	91	70-130		
Copper	93.7	5.00	"	100	< 2.50	94	70-130		
Arsenic	92.0	10.0	"	100	< 2.50	92	70-130		
Selenium	514	10.0	"	500	< 5.00	103	70-130		
Silver	89.6	5.00	"	100	< 2.50	90	70-130		
Cadmium	94.3	1.00	"	100	< 0.500	94	70-130		
Antimony	98.7	5.00	"	100	< 2.50	99	70-130		
Thallium	86.1	10.0	"	100	< 5.00	86	70-130		
Lead	86.3	1.00	"	100	< 0.500	86	70-130		
Matrix Spike (1612039-MS2)		Dilution Factor: 5	**Source: C161021-06**			Prepared: 12/07/16 Analyzed: 12/08/16			
Chromium	90.9	10.0	ug/L	100	< 5.00	91	70-130		
Nickel	98.3	5.00	"	100	8.76	90	70-130		
Copper	95.4	5.00	"	100	2.87	92	70-130		
Arsenic	90.6	10.0	"	100	< 2.50	91	70-130		
Selenium	519	10.0	"	500	< 5.00	104	70-130		
Silver	88.4	5.00	"	100	< 2.50	88	70-130		
Cadmium	93.7	1.00	"	100	< 0.500	94	70-130		
Antimony	97.9	5.00	"	100	< 2.50	98	70-130		
Thallium	84.9	10.0	"	100	< 5.00	85	70-130		
Lead	85.2	1.00	"	100	< 0.500	85	70-130		
Batch 1612045 - 1612039			*Water*						ICPMS-PE DRC-II
Serial Dilution (1612045-SRD1)		Dilution Factor: 2	**Source: C161021-03**			Prepared: 12/07/16 Analyzed: 12/08/16			
Chromium	< 25.0	50.0	ug/L		< 5.00				10
Nickel	< 12.5	25.0	"		< 2.50				10
Copper	< 12.5	25.0	"		< 2.50				10
Arsenic	< 12.5	50.0	"		< 2.50				10
Selenium	< 25.0	50.0	"		< 5.00				10
Silver	< 12.5	25.0	"		< 2.50				10
Cadmium	< 2.50	5.00	"		< 0.50				10
Antimony	< 12.5	25.0	"		< 2.50				10
Thallium	< 25.0	50.0	"		< 5.00				10
Lead	< 2.50	5.00	"		< 0.50				10

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
ICPOE - PE Optima									
Batch 1612038 - No Lab Prep Reqd			***Water***						**ICPOE - PE Optima**
Method Blank (1612038-BLK1)		Dilution Factor: 1				Prepared: 12/07/16 Analyzed: 12/08/16			
Aluminum	34.82	50.0	ug/L						
Beryllium	< 2.00	5.00	"						
Calcium	162.1	250	"						
Iron	183.0	250	"						
Magnesium	< 100	250	"						
Manganese	< 2.00	5.00	"						
Strontium	< 2.00	10.0	"						
Zinc	< 10.0	20.0	"						
Silica (SiO2)	< 250	1000	"						
Method Blank Spike (1612038-BS1)		Dilution Factor: 1				Prepared: 12/07/16 Analyzed: 12/08/16			
Aluminum	10220	50.0	ug/L	10100		101	85-115		
Beryllium	102.8	5.00	"	100		103	85-115		
Calcium	10220	250	"	10100		101	85-115		
Iron	10270	250	"	10100		102	85-115		
Magnesium	10240	250	"	10100		101	85-115		
Manganese	96.84	5.00	"	100		97	85-115		
Strontium	529.9	10.0	"	500		106	85-115		
Zinc	100.2	20.0	"	100		100	85-115		
Silica (SiO2)	< 250	1000	"				85-115		
Duplicate (1612038-DUP1)		Dilution Factor: 1	**Source: C161021-03**			Prepared: 12/07/16 Analyzed: 12/08/16			
Aluminum	42.81	50.0	ug/L		45.52			6	20
Beryllium	< 2.00	5.00	"		< 2.00				20
Calcium	123100	250	"		125100			2	20
Iron	4703	250	"		4807			2	20
Magnesium	5694	250	"		5859			3	20
Manganese	2133	5.00	"		2137			0.2	20
Strontium	1115	10.0	"		1130			1	20
Zinc	307.1	20.0	"		305.2			0.6	20
Silica (SiO2)	14820	1000	"		14910			0.6	20

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1612038 - No Lab Prep Reqd			***Water***						**ICPOE - PE Optima**
Matrix Spike (1612038-MS1)		Dilution Factor: 1		**Source: C161021-03**		Prepared: 12/07/16	Analyzed: 12/08/16		
Aluminum	10440	50.0	ug/L	10100	45.52	103	70-130		
Beryllium	99.86	5.00	"	100	< 2.00	100	70-130		
Calcium	131900	250	"	10100	125100	66	70-130		
Iron	14890	250	"	10100	4807	100	70-130		
Magnesium	15960	250	"	10100	5859	100	70-130		
Manganese	2161	5.00	"	100	2137	24	70-130		
Strontium	1633	10.0	"	500	1130	101	70-130		
Zinc	389.1	20.0	"	100	305.2	84	70-130		
Silica (SiO2)	14490	1000	"		14910		70-130		
Matrix Spike (1612038-MS2)		Dilution Factor: 1		**Source: C161021-06**		Prepared: 12/07/16	Analyzed: 12/08/16		
Aluminum	10390	50.0	ug/L	10100	105.1	102	70-130		
Beryllium	101.4	5.00	"	100	< 2.00	101	70-130		
Calcium	210000	250	"	10100	201100	88	70-130		
Iron	17070	250	"	10100	7271	97	70-130		
Magnesium	26190	250	"	10100	16280	98	70-130		
Manganese	3953	5.00	"	100	3948	5	70-130		
Strontium	1114	10.0	"	500	596.4	103	70-130		
Zinc	604.8	20.0	"	100	516.7	88	70-130		
Silica (SiO2)	11710	1000	"		11830		70-130		
Batch 1612043 - 1612038			***Water***						**ICPOE - PE Optima**
Serial Dilution (1612043-SRD1)		Dilution Factor: 5		**Source: C161021-03**		Prepared: 12/07/16	Analyzed: 12/08/16		
Aluminum	< 100	250	ug/L		45.52				10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	122400	1250	"		125100			2	10
Iron	4856	1250	"		4807			1	10
Magnesium	5704	1250	"		5859			3	10
Manganese	2139	25.0	"		2137			0.08	10
Strontium	1121	50.0	"		1130			0.8	10
Zinc	297.7	100	"		305.2			2	10
Silica (SiO2)	14210	5000	"		14910			5	10

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.
RPD = Relative Percent Difference, %D = % Difference, DL = Detection Limit for QC sample .

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
ICPMS-PE DRC-II									
Batch 1611171 - 200.2 - TR Metals			***Water***						**ICPMS-PE DRC-II**
Method Blank (1611171-BLK2)		Dilution Factor: 5				Prepared: 11/30/16 Analyzed: 12/08/16			
Chromium	< 5.00	10.0	ug/L						
Nickel	< 2.50	5.00	"						
Copper	< 2.50	5.00	"						
Arsenic	< 2.50	10.0	"						
Selenium	< 5.00	10.0	"						
Silver	< 2.50	5.00	"						
Cadmium	< 0.500	1.00	"						
Antimony	< 2.50	5.00	"						
Thallium	< 5.00	10.0	"						
Lead	< 0.500	1.00	"						
Duplicate (1611171-DUP2)		Dilution Factor: 5	**Source: C161021-02**			Prepared: 11/30/16 Analyzed: 12/08/16			
Chromium	< 5.00	10.0	ug/L		< 5.00				20
Nickel	< 2.50	5.00	"		< 2.50				20
Copper	< 2.50	5.00	"		< 2.50				20
Arsenic	< 2.50	10.0	"		< 2.50				20
Selenium	< 5.00	10.0	"		< 5.00				20
Silver	< 2.50	5.00	"		< 2.50				20
Cadmium	< 0.500	1.00	"		< 0.500				20
Antimony	< 2.50	5.00	"		< 2.50				20
Thallium	< 5.00	10.0	"		< 5.00				20
Lead	< 0.500	1.00	"		< 0.500				20
Matrix Spike (1611171-MS2)		Dilution Factor: 5	**Source: C161021-02**			Prepared: 11/30/16 Analyzed: 12/08/16			
Chromium	370.2	10.0	ug/L	400	< 5.00	93	70-130		
Nickel	462.5	5.00	"	500	< 2.50	92	70-130		
Copper	285.1	5.00	"	300	< 2.50	95	70-130		
Arsenic	756.5	10.0	"	800	< 2.50	95	70-130		
Selenium	2040	10.0	"	2000	< 5.00	102	70-130		
Silver	70.68	5.00	"	75.0	< 2.50	94	70-130		
Cadmium	196.0	1.00	"	200	< 0.500	98	70-130		
Antimony	833.0	5.00	"	800	< 2.50	104	70-130		
Thallium	1863	10.0	"	2000	< 5.00	93	70-130		
Lead	937.0	1.00	"	1000	< 0.500	94	70-130		

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1611171 - 200.2 - TR Metals			***Water***						**ICPMS-PE DRC-II**
Matrix Spike (1611171-MS4)		Dilution Factor: 5		**Source: C161021-05**		Prepared: 11/30/16 Analyzed: 12/08/16			
Chromium	365.0	10.0	ug/L	400	< 5.00	91	70-130		
Nickel	466.2	5.00	"	500	8.477	92	70-130		
Copper	286.4	5.00	"	300	4.703	94	70-130		
Arsenic	742.0	10.0	"	800	< 2.50	93	70-130		
Selenium	2010	10.0	"	2000	< 5.00	101	70-130		
Silver	70.07	5.00	"	75.0	< 2.50	93	70-130		
Cadmium	196.4	1.00	"	200	< 0.500	98	70-130		
Antimony	833.9	5.00	"	800	< 2.50	104	70-130		
Thallium	1857	10.0	"	2000	15.72	92	70-130		
Lead	926.7	1.00	"	1000	1.751	92	70-130		
Reference (1611171-SRM2)		Dilution Factor: 2				Prepared: 11/30/16 Analyzed: 12/08/16			
Chromium	973.3	40.0	ug/L	1000		97	85-115		
Nickel	983.3	20.0	"	1000		98	85-115		
Copper	1004	20.0	"	1000		100	85-115		
Arsenic	2004	40.0	"	2000		100	85-115		
Selenium	1071	40.0	"	1000		107	85-115		
Silver	250.1	20.0	"	250		100	85-115		
Cadmium	1028	4.00	"	1000		103	85-115		
Antimony	2142	20.0	"	2000		107	85-115		
Thallium	4767	40.0	"	5000		95	85-115		
Lead	1944	4.00	"	2000		97	85-115		
Batch 1612046 - 1611171			***Water***						**ICPMS-PE DRC-II**
Serial Dilution (1612046-SRD1)		Dilution Factor: 2		**Source: C161021-02**		Prepared: 11/30/16 Analyzed: 12/08/16			
Chromium	< 25.0	50.0	ug/L		< 5.00				10
Nickel	< 12.5	25.0	"		< 2.50				10
Copper	< 12.5	25.0	"		< 2.50				10
Arsenic	< 12.5	50.0	"		< 2.50				10
Selenium	< 25.0	50.0	"		< 5.00				10
Silver	< 12.5	25.0	"		< 2.50				10
Cadmium	< 2.50	5.00	"		< 0.50				10
Antimony	< 12.5	25.0	"		< 2.50				10
Thallium	< 25.0	50.0	"		< 5.00				10
Lead	< 2.50	5.00	"		< 0.50				10

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TDF #: **A-128**

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
ICPOE - PE Optima									
Batch 1611171 - 200.2 - TR Metals			***Water***						**ICPOE - PE Optima**
Method Blank (1611171-BLK1)		Dilution Factor: 1				Prepared: 11/30/16	Analyzed: 12/08/16		
Aluminum	< 20.0	50.0	ug/L						
Beryllium	< 2.00	5.00	"						
Calcium	< 100	250	"						
Iron	< 100	250	"						
Magnesium	< 100	250	"						
Manganese	< 2.00	5.00	"						
Silica (SiO2)	< 250	1000	"						
Zinc	< 10.0	20.0	"						
Strontium	< 2.00	10.0	"						
Duplicate (1611171-DUP1)		Dilution Factor: 1	**Source: C161021-02**			Prepared: 11/30/16	Analyzed: 12/08/16		
Aluminum	53.33	50.0	ug/L		52.07			2	20
Beryllium	< 2.00	5.00	"		< 2.00				20
Calcium	123500	250	"		124200			0.5	20
Iron	4831	250	"		4796			0.7	20
Magnesium	5727	250	"		5740			0.2	20
Manganese	2143	5.00	"		2136			0.3	20
Silica (SiO2)	14910	1000	"		14770			0.9	20
Zinc	299.7	20.0	"		298.8			0.3	20
Strontium	1140	10.0	"		1143			0.2	20
Matrix Spike (1611171-MS1)		Dilution Factor: 1	**Source: C161021-02**			Prepared: 11/30/16	Analyzed: 12/08/16		
Aluminum	2021	50.0	ug/L	2000	52.07	98	70-130		
Beryllium	201.5	5.00	"	200	< 2.00	101	70-130		
Calcium	124800	250	"	1000	124200	63	70-130		
Iron	7735	250	"	3000	4796	98	70-130		
Magnesium	7640	250	"	2000	5740	95	70-130		
Manganese	2321	5.00	"	200	2136	92	70-130		
Silica (SiO2)	16680	1000	"	2000	14770	95	70-130		
Zinc	487.5	20.0	"	200	298.8	94	70-130		
Strontium	1335	10.0	"	200	1143	96	70-130		

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

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Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1611171 - 200.2 - TR Metals			***Water***						**ICPOE - PE Optima**
Matrix Spike (1611171-MS3)		Dilution Factor: 1		**Source: C161021-05**		Prepared: 11/30/16 Analyzed: 12/08/16			
Aluminum	2151	50.0	ug/L	2000	189.5	98	70-130		
Beryllium	202.2	5.00	"	200	< 2.00	101	70-130		
Calcium	200300	250	"	1000	201500	NR	70-130		
Iron	14950	250	"	3000	12330	87	70-130		
Magnesium	18040	250	"	2000	16480	78	70-130		
Manganese	4176	5.00	"	200	4017	80	70-130		
Silica (SiO2)	14210	1000	"	2000	12340	94	70-130		
Zinc	722.2	20.0	"	200	534.6	94	70-130		
Strontium	803.3	10.0	"	200	610.4	96	70-130		
Reference (1611171-SRM1)		Dilution Factor: 1				Prepared: 11/30/16 Analyzed: 12/08/16			
Aluminum	1019	50.0	ug/L	1000		102	85-115		
Beryllium	1038	5.00	"	1000		104	85-115		
Calcium	992.0	250	"	1000		99	85-115		
Iron	1021	250	"	1000		102	85-115		
Magnesium	971.7	250	"	1000		97	85-115		
Manganese	994.5	5.00	"	1000		99	85-115		
Silica (SiO2)	4796	1000	"	5000		96	85-115		
Zinc	997.2	20.0	"	1000		100	85-115		
Strontium	1039	10.0	"	1000		104	85-115		
Batch 1612044 - 1611171			***Water***						**ICPOE - PE Optima**
Serial Dilution (1612044-SRD1)		Dilution Factor: 5		**Source: C161021-02**		Prepared: 11/30/16 Analyzed: 12/08/16			
Aluminum	< 100	250	ug/L		52.07				10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	124200	1250	"		124200			0.05	10
Iron	4732	1250	"		4796			1	10
Magnesium	5692	1250	"		5740			0.9	10
Manganese	2181	25.0	"		2136			2	10
Silica (SiO2)	14610	5000	"		14770			1	10
Zinc	306.7	100	"		298.8			3	10
Strontium	1149	50.0	"		1143			0.5	10

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.
RPD = Relative Percent Difference, %D = % Difference, DL = Detection Limit for QC sample .

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

Classical Chemistry by EPA/ASTM/APHA Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
ESAT Dionex IC									
Batch 1611009 - No Prep Req			***Water***						**ESAT Dionex IC**
Method Blank (1611009-BLK1)		Dilution Factor: 1				Prepared & Analyzed: 11/10/16			
Fluoride	< 0.1	0.2	mg/L						
Chloride	< 0.4	0.8	"						
Sulfate as SO4	< 1.0	2.0	"						
Nitrate/Nitrite as N	< 0.1	0.2	"						
Method Blank Spike (1611009-BS1)		Dilution Factor: 1				Prepared & Analyzed: 11/10/16			
Fluoride	5.4	0.2	mg/L	5.00		108	90-110		
Chloride	27.3	0.8	"	25.0		109	90-110		
Sulfate as SO4	25.5	2.0	"	25.0		102	90-110		
Nitrate/Nitrite as N	10.4	0.2	"	10.0		104	90-110		
Duplicate (1611009-DUP1)		Dilution Factor: 2	**Source: C161021-01**			Prepared & Analyzed: 11/10/16			
Fluoride	1.8	0.4	mg/L		1.8			0.09	20
Chloride	< 0.8	1.6	"		< 0.8				20
Sulfate as SO4	261	4.0	"		261			0.3	20
Nitrate/Nitrite as N	< 0.2	0.4	"		< 0.2				20
Matrix Spike (1611009-MS1)		Dilution Factor: 2	**Source: C161021-01**			Prepared & Analyzed: 11/10/16			
Fluoride	11.9	0.4	mg/L	10.0	1.8	101	80-120		
Chloride	51.5	1.6	"	50.0	< 0.8	103	80-120		
Sulfate as SO4	314	4.0	"	50.0	261	107	80-120		
Nitrate/Nitrite as N	19.7	0.4	"	20.0	< 0.2	98	80-120		
Matrix Spike (1611009-MS2)		Dilution Factor: 1	**Source: C161021-31**			Prepared & Analyzed: 11/10/16			
Fluoride	5.2	0.2	mg/L	5.00	< 0.1	104	80-120		
Chloride	26.1	0.8	"	25.0	< 0.4	105	80-120		
Sulfate as SO4	51.4	2.0	"	25.0	25.5	104	80-120		
Nitrate/Nitrite as N	10.0	0.2	"	10.0	< 0.1	100	80-120		

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

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Classical Chemistry by EPA/ASTM/APHA Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1611090 - 1611009			***Water***						**ESAT Dionex IC**
Instrument Blank (1611090-IBL1)		Dilution Factor: 1				Prepared & Analyzed: 11/10/16			
Fluoride	< 0.1	0.2	mg/L						
Chloride	< 0.4	0.8	"						
Sulfate as SO4	< 1.0	2.0	"						
Nitrate/Nitrite as N	< 0.1	0.2	"						

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.
RPD = Relative Percent Difference, %D = % Difference, DL = Detection Limit for QC sample .

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: EPA 300.0 Analysis Name: WC - Anions by Ion Chromatography

Instrument: **ESAT Dionex IC** Work Order: Nu C161021

Analytical Sequence: 1611090 **Dissolved** Concentration Units: mg/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Fluoride	0.00	1	2	3	4	1611009-BLK1	NA	0.20
		0.00	0.00	0.00	0.00	0.00	NA	
		5	6	7	8			
Chloride	0.00	1	2	3	4	1611009-BLK1	NA	0.80
		0.00	0.00	0.00	0.00	0.00	NA	
		5	6	7	8			
Sulfate as SO4	0.00	1	2	3	4	1611009-BLK1	NA	2.00
		0.00	0.00	0.00	0.00	0.00	NA	
		5	6	7	8			
Nitrate/Nitrite as N	0.00	1	2	3	4	1611009-BLK1	NA	0.20
		0.00	0.00	0.00	0.00	0.00	NA	
		5	6	7	8			

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.7 Analysis Name: ICPOE Diss. Metals

Instrument: **ICPOE - PE Optima** Work Order: Nu C161021

Analytical Sequence: 1612043 **Dissolved** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Aluminum	-0.11	1	2	3	4	1612038-BLK1	NA	50.00
		1.10	3.64			34.82	NA	
		5	6	7	8			
Beryllium	0.22	1	2	3	4	1612038-BLK1	NA	5.00
		0.18	0.22			0.22	NA	
		5	6	7	8			
Calcium	0.74	1	2	3	4	1612038-BLK1	NA	250.00
		4.00	5.75			162.07	NA	
		5	6	7	8			
Iron	20.67	1	2	3	4	1612038-BLK1	NA	250.00
		22.20	41.74			182.96	NA	
		5	6	7	8			
Magnesium	0.57	1	2	3	4	1612038-BLK1	NA	250.00
		3.02	4.09			83.26	NA	
		5	6	7	8			
Manganese	0.00	1	2	3	4	1612038-BLK1	NA	5.00
		0.13	0.24			-0.01	NA	
		5	6	7	8			
Strontium	0.05	1	2	3	4	1612038-BLK1	NA	10.00
		0.07	0.23			0.49	NA	
		5	6	7	8			
Zinc	-0.20	1	2	3	4	1612038-BLK1	NA	20.00
		1.31	0.54			-0.23	NA	
		5	6	7	8			

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

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TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.7 Analysis Name: ICPOE Diss. Metals

Instrument: **ICPOE - PE Optima** Work Order: Nu C161021

Analytical Sequence: 1612043 **Dissolved** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4	1612038-BLK1	NA	
Silica (SiO2)	3.48	-5.36	-3.95			-0.16	NA	1,000.00
		5	6	7	8			

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TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.7 Analysis Name: ICPOE Tot. Rec. Metals

Instrument: **ICPOE - PE Optima** Work Order: Nu C161021

Analytical Sequence: 1612044 **Total Recoverable** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Aluminum	-0.11	1	2	3	4	1611171-BLK1	NA	50.00
		1.10	3.64	6.36	-0.49	-1.57	NA	
		5	6	7	8			
Beryllium	0.22	1	2	3	4	1611171-BLK1	NA	5.00
		0.18	0.22	0.30	0.09	0.04	NA	
		5	6	7	8			
Calcium	0.74	1	2	3	4	1611171-BLK1	NA	250.00
		4.00	5.75	11.58	0.52	-1.21	NA	
		5	6	7	8			
Iron	20.67	1	2	3	4	1611171-BLK1	NA	250.00
		22.20	41.74	36.95	58.90	16.62	NA	
		5	6	7	8			
Magnesium	0.57	1	2	3	4	1611171-BLK1	NA	250.00
		3.02	4.09	6.98	0.96	-0.89	NA	
		5	6	7	8			
Manganese	0.00	1	2	3	4	1611171-BLK1	NA	5.00
		0.13	0.24	0.47	0.08	0.04	NA	
		5	6	7	8			
Silica (SiO2)	3.48	1	2	3	4	1611171-BLK1	NA	1,000.00
		-5.36	-3.95	-4.23	-5.77	2.05	NA	
		5	6	7	8			
Zinc	-0.20	1	2	3	4	1611171-BLK1	NA	20.00
		1.31	0.54	1.69	1.35	0.57	NA	
		5	6	7	8			

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

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INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.7 Analysis Name: ICPOE Tot. Rec. Metals

Instrument: **ICPOE - PE Optima** Work Order: Nu C161021

Analytical Sequence: 1612044 **Total Recoverable** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4	1611171-BLK1	NA	
Strontium	0.05	0.07	0.23	0.27	0.10	0.05	NA	10.00
		5	6	7	8			

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TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.8 Analysis Name: ICPMS Diss. Metals

Instrument: **ICPMS-PE DRC-II** Work Order: Nu C161021

Analytical Sequence: 1612045 **Dissolved** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Chromium	-0.20	1	2	3	4	1612039-BLK1	NA	2.00
		-0.16	-0.14			-0.16	NA	
		5	6	7	8			
Nickel	0.00	1	2	3	4	1612039-BLK1	NA	1.00
		0.01	0.02			0.14	NA	
		5	6	7	8			
Copper	0.02	1	2	3	4	1612039-BLK1	NA	1.00
		0.01	0.02			-0.01	NA	
		5	6	7	8			
Arsenic	0.03	1	2	3	4	1612039-BLK1	NA	2.00
		0.01	-0.11			0.01	NA	
		5	6	7	8			
Selenium	0.21	1	2	3	4	1612039-BLK1	NA	2.00
		0.31	0.12			0.17	NA	
		5	6	7	8			
Silver	0.01	1	2	3	4	1612039-BLK1	NA	1.00
		0.01	0.01			0.01	NA	
		5	6	7	8			
Cadmium	0.00	1	2	3	4	1612039-BLK1	NA	0.20
		0.00	0.00			0.01	NA	
		5	6	7	8			
Antimony	0.24	1	2	3	4	1612039-BLK1	NA	1.00
		0.30	0.31			0.18	NA	
		5	6	7	8			

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TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.8 Analysis Name: ICPMS Diss. Metals

Instrument: **ICPMS-PE DRC-II** Work Order: Nu C161021

Analytical Sequence: 1612045 **Dissolved** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Thallium	0.01	1	2	3	4	1612039-BLK1	NA	2.00
		0.00	0.01			-0.01	NA	
		5	6	7	8			
Lead	0.00	1	2	3	4	1612039-BLK1	NA	0.20
		0.00	0.00			0.00	NA	
		5	6	7	8			

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.8 Analysis Name: ICPMS Tot. Rec. Metals

Instrument: **ICPMS-PE DRC-II** Work Order: Nu C161021

Analytical Sequence: 1612046 **Total Recoverable** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Chromium	-0.20	1	2	3	4	NA	1611171-BLK2	2.00
		-0.16	-0.14	-0.17	-0.13	NA	0.02	
		5	6	7	8			
Nickel	0.00	1	2	3	4	NA	1611171-BLK2	1.00
		0.01	0.02	0.01	0.02	NA	-0.09	
		5	6	7	8			
Copper	0.02	1	2	3	4	NA	1611171-BLK2	1.00
		0.01	0.02	0.02	0.00	NA	0.01	
		5	6	7	8			
Arsenic	0.03	1	2	3	4	NA	1611171-BLK2	2.00
		0.01	-0.11	-0.08	-0.11	NA	-0.12	
		5	6	7	8			
Selenium	0.21	1	2	3	4	NA	1611171-BLK2	2.00
		0.31	0.12	0.09	0.05	NA	0.04	
		5	6	7	8			
Silver	0.01	1	2	3	4	NA	1611171-BLK2	1.00
		0.01	0.01	0.01	0.01	NA	0.00	
		5	6	7	8			
Cadmium	0.00	1	2	3	4	NA	1611171-BLK2	0.20
		0.00	0.00	0.00	0.00	NA	0.00	
		5	6	7	8			
Antimony	0.24	1	2	3	4	NA	1611171-BLK2	1.00
		0.30	0.31	0.30	0.30	NA	0.08	
		5	6	7	8			

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INORGANIC ANALYSES DATA SHEET

Intial and Continuing Calibration Blanks

Analytical Method: 200.8 Analysis Name: ICPMS Tot. Rec. Metals

Instrument: **ICPMS-PE DRC-II** Work Order: Nu C161021

Analytical Sequence: 1612046 **Total Recoverable** Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Thallium	0.01	1	2	3	4	NA	1611171-BLK2	2.00
		0.00	0.01	0.55	0.18	NA	-0.03	
		5	6	7	8			
Lead	0.00	1	2	3	4	NA	1611171-BLK2	0.20
		0.00	0.00	0.00	0.00	NA	0.00	
		5	6	7	8			

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ESAT Dionex IC Method: EPA 300.0 Analysis Name: WC - Anions by Ion Chromatography 2013

Sequence: 1611090 Work Order: C161021 Units: mg/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Chloride	40.0	41.5	103.8		1			2			3	
				40.0	41.7	104.3	40.0	41.9	104.8	40.0	41.8	104.5
					4			5			6	
				40.0	41.7	104.3						
					7			8			9	
Fluoride	4.00	4.0	100.0		1			2			3	
				4.00	4.1	102.5	4.00	4.2	105.0	4.00	4.1	102.5
					4			5			6	
				4.00	4.2	105.0						
					7			8			9	
Nitrate/Nitrite as N	20.0	20.3	101.5		1			2			3	
				20.0	20.2	101.0	20.0	20.3	101.5	20.0	20.2	101.0
					4			5			6	
				20.0	20.2	101.0						
					7			8			9	
Sulfate as SO4	100	97.6	97.6		1			2			3	
				100	98.5	98.5	100	98.6	98.6	100	98.8	98.8
					4			5			6	
				100	98.7	98.7						
					7			8			9	

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPOE - PE Optima Method: 200.7 Analysis Name: ICPOE Diss. Metals

Sequence: 1612043 Work Order: C161021 Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Aluminum	12500	12790	102.3		1			2			3	
				12500	12620	101.0	12500	12530	100.2			
					4			5			6	
					7			8			9	
Beryllium	500	508.3	101.7		1			2			3	
				500	505.4	101.1	500	505.9	101.2			
					4			5			6	
					7			8			9	
Calcium	12500	12710	101.7		1			2			3	
				12500	12710	101.7	12500	12450	99.6			
					4			5			6	
					7			8			9	
Iron	12500	12840	102.7		1			2			3	
				12500	12690	101.5	12500	12310	98.5			
					4			5			6	
					7			8			9	
Magnesium	12500	12840	102.7		1			2			3	
				12500	12640	101.1	12500	12390	99.1			
					4			5			6	
					7			8			9	
Manganese	1000	1021	102.1		1			2			3	
				1000	1013	101.3	1000	1013	101.3			
					4			5			6	
					7			8			9	

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPOE - PE Optima Method: 200.7 Analysis Name: ICPOE Diss. Metals

Sequence: 1612043 Work Order: C161021 Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Silica (SiO2)	10000	10010	100.1		1			2			3	
				10000	9982	99.8	10000	10000	100.0			
					4			5			6	
					7			8			9	
Strontium	500	509.9	102.0		1			2			3	
				500	502.6	100.5	500	501.5	100.3			
					4			5			6	
					7			8			9	
Zinc	2500	2577	103.1		1			2			3	
				2500	2539	101.6	2500	2561	102.4			
					4			5			6	
					7			8			9	

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPOE - PE Optima Method: 200.7 Analysis Name: ICPOE Tot. Rec. Metals

Sequence: 1612044 Work Order: C161021 Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Aluminum	12500	12790	102.3		1			2			3	
				12500	12620	101.0	12500	12530	100.2	12500	12680	101.4
					4			5			6	
				12500	13220	105.8						
					7			8			9	
Beryllium	500	508.3	101.7		1			2			3	
				500	505.4	101.1	500	505.9	101.2	500	506.4	101.3
					4			5			6	
				500	481.1	96.2						
					7			8			9	
Calcium	12500	12710	101.7		1			2			3	
				12500	12710	101.7	12500	12450	99.6	12500	12400	99.2
					4			5			6	
				12500	12590	100.7						
					7			8			9	
Iron	12500	12840	102.7		1			2			3	
				12500	12690	101.5	12500	12310	98.5	12500	12180	97.4
					4			5			6	
				12500	12150	97.2						
					7			8			9	
Magnesium	12500	12840	102.7		1			2			3	
				12500	12640	101.1	12500	12390	99.1	12500	12490	99.9
					4			5			6	
				12500	12570	100.6						
					7			8			9	
Manganese	1000	1021	102.1		1			2			3	
				1000	1013	101.3	1000	1013	101.3	1000	1014	101.4
					4			5			6	
				1000	995.9	99.6						
					7			8			9	

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPOE - PE Optima Method: 200.7 Analysis Name: ICPOE Tot. Rec. Metals

Sequence: 1612044 Work Order: C161021 Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Silica (SiO2)	10000	10010	100.1		1			2			3	
				10000	9982	99.8	10000	10000	100.0	10000	9988	99.9
					4			5			6	
				10000	9292	92.9						
					7			8			9	
Strontium	500	509.9	102.0		1			2			3	
				500	502.6	100.5	500	501.5	100.3	500	511.2	102.2
					4			5			6	
				500	495.5	99.1						
					7			8			9	
Zinc	2500	2577	103.1		1			2			3	
				2500	2539	101.6	2500	2561	102.4	2500	2557	102.3
					4			5			6	
				2500	2420	96.8						
					7			8			9	

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II Method: 200.8 Analysis Name: ICPMS Diss. Metals

Sequence: 1612045 Work Order: C161021 Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Antimony	50.0	51.6	103.2		1			2			3	
				50.0	50.6	101.2	50.0	51.3	102.6			
					4			5			6	
					7			8			9	
Arsenic	50.0	48.4	96.8		1			2			3	
				50.0	48.6	97.2	50.0	49.5	99.0			
					4			5			6	
					7			8			9	
Cadmium	50.0	50.0	100.0		1			2			3	
				50.0	50.7	101.4	50.0	51.0	102.0			
					4			5			6	
					7			8			9	
Chromium	50.0	50.1	100.2		1			2			3	
				50.0	50.4	100.8	50.0	51.2	102.4			
					4			5			6	
					7			8			9	
Copper	50.0	50.2	100.4		1			2			3	
				50.0	51.2	102.4	50.0	50.7	101.4			
					4			5			6	
					7			8			9	
Lead	50.0	50.4	100.8		1			2			3	
				50.0	49.1	98.2	50.0	50.2	100.4			
					4			5			6	
					7			8			9	

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II Method: 200.8 Analysis Name: ICPMS Diss. Metals

Sequence: 1612045 Work Order: C161021 Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Nickel	50.0	48.8	97.6		1			2			3	
				50.0	50.3	100.6	50.0	50.3	100.6			
					4			5			6	
					7			8			9	
Selenium	50.0	52.1	104.2		1			2			3	
				50.0	51.5	103.0	50.0	51.6	103.2			
					4			5			6	
					7			8			9	
Silver	50.0	50.5	101.0		1			2			3	
				50.0	50.3	100.6	50.0	51.1	102.2			
					4			5			6	
					7			8			9	
Thallium	50.0	49.8	99.6		1			2			3	
				50.0	48.9	97.8	50.0	50.1	100.2			
					4			5			6	
					7			8			9	

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

Project Name: Bonita Peak_Water 3_OCT_2016_A128 **Certificate of Analysis**

TDF #: A-128

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II Method: 200.8 Analysis Name: ICPMS Tot. Rec. Metals

Sequence: 1612046 Work Order: C161021 Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Antimony	50.0	51.61	103.2		1			2			3	
				50.0	50.62	101.2	50.0	51.25	102.5	50.0	51.39	102.8
					4			5			6	
				50.0	52.13	104.3						
					7			8			9	
Arsenic	50.0	48.43	96.9		1			2			3	
				50.0	48.58	97.2	50.0	49.54	99.1	50.0	49.51	99.0
					4			5			6	
				50.0	51.17	102.3						
					7			8			9	
Cadmium	50.0	49.99	100.0		1			2			3	
				50.0	50.74	101.5	50.0	51.03	102.1	50.0	51.76	103.5
					4			5			6	
				50.0	51.66	103.3						
					7			8			9	
Chromium	50.0	50.09	100.2		1			2			3	
				50.0	50.43	100.9	50.0	51.17	102.3	50.0	51.18	102.4
					4			5			6	
				50.0	51.87	103.7						
					7			8			9	
Copper	50.0	50.18	100.4		1			2			3	
				50.0	51.25	102.5	50.0	50.71	101.4	50.0	51.27	102.5
					4			5			6	
				50.0	51.78	103.6						
					7			8			9	
Lead	50.0	50.43	100.9		1			2			3	
				50.0	49.12	98.2	50.0	50.19	100.4	50.0	50.70	101.4
					4			5			6	
				50.0	51.74	103.5						
					7			8			9	

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II Method: 200.8 Analysis Name: ICPMS Tot. Rec. Metals

Sequence: 1612046 Work Order: C161021 Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Nickel	50.0	48.75	97.5		1			2			3	
				50.0	50.29	100.6	50.0	50.29	100.6	50.0	50.59	101.2
					4			5			6	
				50.0	50.81	101.6						
					7			8			9	
Selenium	50.0	52.08	104.2		1			2			3	
				50.0	51.45	102.9	50.0	51.58	103.2	50.0	51.51	103.0
					4			5			6	
				50.0	52.98	106.0						
					7			8			9	
Silver	50.0	50.49	101.0		1			2			3	
				50.0	50.34	100.7	50.0	51.08	102.2	50.0	51.20	102.4
					4			5			6	
				50.0	51.66	103.3						
					7			8			9	
Thallium	50.0	49.85	99.7		1			2			3	
				50.0	48.89	97.8	50.0	50.07	100.1	50.0	51.17	102.3
					4			5			6	
				50.0	51.26	102.5						
					7			8			9	

Metals - ICV & CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

ICP Interference Check Sample

ICPMS-PE DRC-II

Analyte	Check Sample	Result*	Units	True	%R	PQL
Sequence: 1612045	Analysis: ICPMS Diss. Metals					
Antimony	IFA1	0.1	ug/L			1.00
	IFB1	0.1	ug/L			1.00
Arsenic	IFA1	0.0	ug/L			2.00
	IFB1	20.4	ug/L	20	102	2.00
Cadmium	IFA1	0.0	ug/L			0.200
	IFB1	20.7	ug/L	20	104	0.200
Chromium	IFA1	0.1	ug/L			2.00
	IFB1	21.0	ug/L	20	105	2.00
Copper	IFA1	0.6	ug/L			1.00
	IFB1	21.3	ug/L	20	107	1.00
Lead	IFA1	0.0	ug/L			0.200
	IFB1	0.0	ug/L			0.200
Nickel	IFA1	-0.3	ug/L			1.00
	IFB1	20.3	ug/L	20	102	1.00
Selenium	IFA1	0.2	ug/L			2.00
	IFB1	0.1	ug/L			2.00
Silver	IFA1	0.0	ug/L			1.00
	IFB1	20.2	ug/L	20	101	1.00
Thallium	IFA1	0.0	ug/L			2.00
	IFB1	0.0	ug/L			2.00

*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

ICP Interference Check Sample

ICPMS-PE DRC-II

Analyte	Check Sample	Result*	Units	True	%R	PQL
Sequence: 1612046	Analysis: ICPMS Tot. Rec. Metals					
Antimony	IFA1	0.1	ug/L			1.00
	IFB1	0.1	ug/L			1.00
Arsenic	IFA1	0.0	ug/L			2.00
	IFB1	20.4	ug/L	20	102	2.00
Cadmium	IFA1	0.0	ug/L			0.200
	IFB1	20.7	ug/L	20	104	0.200
Chromium	IFA1	0.1	ug/L			2.00
	IFB1	21.0	ug/L	20	105	2.00
Copper	IFA1	0.6	ug/L			1.00
	IFB1	21.3	ug/L	20	107	1.00
Lead	IFA1	0.0	ug/L			0.200
	IFB1	0.0	ug/L			0.200
Nickel	IFA1	-0.3	ug/L			1.00
	IFB1	20.3	ug/L	20	102	1.00
Selenium	IFA1	0.2	ug/L			2.00
	IFB1	0.1	ug/L			2.00
Silver	IFA1	0.0	ug/L			1.00
	IFB1	20.2	ug/L	20	101	1.00
Thallium	IFA1	0.0	ug/L			2.00
	IFB1	0.0	ug/L			2.00

*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

ICP Interference Check Sample

ICPOE - PE Optima

Analyte	Check Sample	Result*	Units	True	%R	PQL
Sequence: 1612043	Analysis: ICPOE Diss. Metals					
Aluminum	IFA1	60,255.4	ug/L	60,000	100	50.0
	IFB1	61,519.9	ug/L	60,000	103	50.0
Beryllium	IFA1	-0.4	ug/L			5.00
	IFB1	99.8	ug/L	100	100	5.00
Calcium	IFA1	288,275.4	ug/L	300,000	96	250
	IFB1	290,560.6	ug/L	300,000	97	250
Iron	IFA1	226,926.7	ug/L	250,000	91	250
	IFB1	228,731.0	ug/L	250,000	91	250
Magnesium	IFA1	138,863.9	ug/L	150,000	93	250
	IFB1	141,017.4	ug/L	150,000	94	250
Manganese	IFA1	1.0	ug/L			5.00
	IFB1	192.4	ug/L	200	96	5.00
Silica (SiO2)	IFA1	1.2	ug/L			1000
	IFB1	511.4	ug/L	500	102	1000
Strontium	IFA1	-5.8	ug/L			10.0
	IFB1	1,000.1	ug/L	1,000	100	10.0
Zinc	IFA1	-2.9	ug/L			20.0
	IFB1	285.0	ug/L	300	95	20.0

*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8

ICP Interference Check Sample

ICPOE - PE Optima

Analyte	Check Sample	Result*	Units	True	%R	PQL
Sequence: 1612044	Analysis: ICPOE Tot. Rec. Metals					
Aluminum	IFA1	60,255.4	ug/L	60,000	100	50.0
	IFB1	61,519.9	ug/L	60,000	103	50.0
Beryllium	IFA1	-0.4	ug/L			5.00
	IFB1	99.8	ug/L	100	100	5.00
Calcium	IFA1	288,275.4	ug/L	300,000	96	250
	IFB1	290,560.6	ug/L	300,000	97	250
Iron	IFA1	226,926.7	ug/L	250,000	91	250
	IFB1	228,731.0	ug/L	250,000	91	250
Magnesium	IFA1	138,863.9	ug/L	150,000	93	250
	IFB1	141,017.4	ug/L	150,000	94	250
Manganese	IFA1	1.0	ug/L			5.00
	IFB1	192.4	ug/L	200	96	5.00
Silica (SiO2)	IFA1	1.2	ug/L			1000
	IFB1	511.4	ug/L	500	102	1000
Strontium	IFA1	-5.8	ug/L			10.0
	IFB1	1,000.1	ug/L	1,000	100	10.0
Zinc	IFA1	-2.9	ug/L			20.0
	IFB1	285.0	ug/L	300	95	20.0

*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8
Detection Limit (PQL) Standard
ICPMS-PE DRC-II

Metals (Dissolved) by EPA 200/7000 Series Methods

Sequence: 1612045

Analyte	True	Found	%R	Units
Antimony	1.00	1.15	115	ug/L
Arsenic	2.00	2.14	107	ug/L
Cadmium	0.200	0.183	91	ug/L
Chromium	2.00	1.83	92	ug/L
Copper	1.00	1.02	102	ug/L
Lead	0.200	0.184	92	ug/L
Nickel	1.00	1.02	102	ug/L
Selenium	2.00	2.47	124	ug/L
Silver	1.00	0.973	97	ug/L
Thallium	1.00	0.910	91	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8
Detection Limit (PQL) Standard
ICPOE - PE Optima

Metals (Dissolved) by EPA 200/7000 Series Methods

Sequence: 1612043

Analyte	True	Found	%R	Units
Aluminum	100	99.67	100	ug/L
Beryllium	5.00	5.165	103	ug/L
Calcium	250	254.9	102	ug/L
Iron	100	93.55	94	ug/L
Magnesium	1000	999.2	100	ug/L
Manganese	10.0	10.13	101	ug/L
Silica (SiO2)	250	251.0	100	ug/L
Strontium	10.0	10.37	104	ug/L
Zinc	50.0	52.07	104	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8
Detection Limit (PQL) Standard
ICPMS-PE DRC-II

Metals (Total Recov) by EPA 200/7000 Series Methods

Sequence: 1612046

Analyte	True	Found	%R	Units
Antimony	1.00	1.154	115	ug/L
Arsenic	2.00	2.137	107	ug/L
Cadmium	0.200	0.1830	91	ug/L
Chromium	2.00	1.833	92	ug/L
Copper	1.00	1.015	102	ug/L
Lead	0.200	0.1837	92	ug/L
Nickel	1.00	1.021	102	ug/L
Selenium	2.00	2.473	124	ug/L
Silver	1.00	0.9727	97	ug/L
Thallium	1.00	0.9099	91	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw, Inc. - ESAT Region 8
Detection Limit (PQL) Standard
ICPOE - PE Optima

Metals (Total Recov) by EPA 200/7000 Series Methods

Sequence: 1612044

Analyte	True	Found	%R	Units
Aluminum	100	99.67	100	ug/L
Beryllium	5.00	5.165	103	ug/L
Calcium	250	254.9	102	ug/L
Iron	100	93.55	94	ug/L
Magnesium	1000	999.2	100	ug/L
Manganese	10.0	10.13	101	ug/L
Silica (SiO2)	250	251.0	100	ug/L
Strontium	10.0	10.37	104	ug/L
Zinc	50.0	52.07	104	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, & Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg & Na.

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: EPA 300.0 **Dissolved** **Sequence ID#:** 1611090

Instrument ID #: ESAT Dionex IC Water **LSR #:** A-128

Analysis ID	Sample Name	Analysis Date	Analysis Time
1611090-ICV1	Initial Cal Check	11/10/16	14:15
1611090-ICB1	Initial Cal Blank	11/10/16	14:30
1611090-SCV1	Secondary Cal Check	11/10/16	14:45
1611090-IBL1	Instrument Blank	11/10/16	15:00
1611009-BS1	Blank Spike	11/10/16	15:16
1611009-BLK1	Blank	11/10/16	15:31
C161021-01	SS71-SS-00-EPA	11/10/16	15:46
1611009-DUP1	Duplicate	11/10/16	16:01
1611009-MS1	Matrix Spike	11/10/16	16:16
C161021-07	SS73-SS-00-EPA	11/10/16	16:46
C161021-10	SS74-SS-00-EPA	11/10/16	17:01
1611090-CCV1	Calibration Check	11/10/16	17:16
1611090-CCB1	Calibration Blank	11/10/16	17:31
C161021-13	SS75-SS-00-EPA	11/10/16	17:46
C161021-16	SS76-SS-00-EPA	11/10/16	18:01
C161021-19	SS77-SS-00-EPA	11/10/16	18:16
C161021-22	SS78-SS-00-EPA	11/10/16	18:32
C161021-25	SS78-SS-30-EPA	11/10/16	18:47
C161021-28	SS79-SS-00-EPA	11/10/16	19:02
C161021-31	SS80-SS-00-EPA	11/10/16	19:17
1611009-MS2	Matrix Spike	11/10/16	19:32
C161021-34	SS80-SS-90-EPA	11/10/16	19:47
C161021-37	SW81-SW-00-EPA	11/10/16	20:02
1611090-CCV2	Calibration Check	11/10/16	20:17
1611090-CCB2	Calibration Blank	11/10/16	20:32
1611090-CCV3	Calibration Check	11/11/16	12:49
1611090-CCB3	Calibration Blank	11/11/16	13:04
C161021-04	SS72-SS-00-EPA	11/11/16	13:19
1611090-CCV4	Calibration Check	11/11/16	13:34
1611090-CCB4	Calibration Blank	11/11/16	13:49

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7 **Dissolved** **Sequence ID#:** 1612043

Instrument ID #: ICPOE - PE Optima Water **LSR #:** A-128

Analysis ID	Sample Name	Analysis Date	Analysis Time
1612043-ICV1	Initial Cal Check	12/08/16	07:52
1612043-SCV1	Secondary Cal Check	12/08/16	07:56
1612043-ICB1	Initial Cal Blank	12/08/16	07:59
1612043-CRL1	Instrument RL Check	12/08/16	08:02
1612043-IFA1	Interference Check A	12/08/16	08:04
1612043-IFB1	Interference Check B	12/08/16	08:08
1612038-BLK1	Blank	12/08/16	08:12
1612038-BS1	Blank Spike	12/08/16	08:15
C161021-03	SS71-SS-00-EPA	12/08/16	08:18
1612038-DUP1	Duplicate	12/08/16	08:22
1612043-SRD1	Serial Dilution	12/08/16	08:25
1612038-MS1	Matrix Spike	12/08/16	08:28
C161021-06	SS72-SS-00-EPA	12/08/16	08:31
1612038-MS2	Matrix Spike	12/08/16	08:35
C161021-09	SS73-SS-00-EPA	12/08/16	08:39
1612043-CCV1	Calibration Check	12/08/16	08:45
1612043-CCB1	Calibration Blank	12/08/16	08:48
C161021-12	SS74-SS-00-EPA	12/08/16	08:51
C161021-15	SS75-SS-00-EPA	12/08/16	08:54
C161021-18	SS76-SS-00-EPA	12/08/16	08:58
C161021-21	SS77-SS-00-EPA	12/08/16	09:01
C161021-24	SS78-SS-00-EPA	12/08/16	09:04
C161021-27	SS78-SS-30-EPA	12/08/16	09:07
C161021-30	SS79-SS-00-EPA	12/08/16	09:10
C161021-33	SS80-SS-00-EPA	12/08/16	09:13
C161021-36	SS80-SS-90-EPA	12/08/16	09:16
C161021-39	SW81-SW-00-EPA	12/08/16	09:19
1612043-CCV2	Calibration Check	12/08/16	09:22
1612043-CCB2	Calibration Blank	12/08/16	09:25

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7 **Total Recoverable** **Sequence ID#:** 1612044

Instrument ID #: ICPOE - PE Optima Water **LSR #:** A-128

Analysis ID	Sample Name	Analysis Date	Analysis Time
1612044-ICV1	Initial Cal Check	12/08/16	07:52
1612044-SCV1	Secondary Cal Check	12/08/16	07:56
1612044-ICB1	Initial Cal Blank	12/08/16	07:59
1612044-CRL1	Instrument RL Check	12/08/16	08:02
1612044-IFA1	Interference Check A	12/08/16	08:04
1612044-IFB1	Interference Check B	12/08/16	08:08
1612044-CCV1	Calibration Check	12/08/16	08:45
1612044-CCB1	Calibration Blank	12/08/16	08:48
1612044-CCV2	Calibration Check	12/08/16	09:22
1612044-CCB2	Calibration Blank	12/08/16	09:25
1611171-BLK1	Blank	12/08/16	09:30
1611171-SRM1	Reference	12/08/16	09:33
C161021-02	SS71-SS-00-EPA	12/08/16	09:36
1611171-DUP1	Duplicate	12/08/16	09:40
1612044-SRD1	Serial Dilution	12/08/16	09:43
1611171-MS1	Matrix Spike	12/08/16	09:46
C161021-05	SS72-SS-00-EPA	12/08/16	09:49
1611171-MS3	Matrix Spike	12/08/16	09:53
C161021-08	SS73-SS-00-EPA	12/08/16	09:57
1612044-CCV3	Calibration Check	12/08/16	10:03
1612044-CCB3	Calibration Blank	12/08/16	10:06
C161021-11	SS74-SS-00-EPA	12/08/16	10:10
C161021-14	SS75-SS-00-EPA	12/08/16	10:13
C161021-17	SS76-SS-00-EPA	12/08/16	10:16
C161021-20	SS77-SS-00-EPA	12/08/16	10:19
C161021-23	SS78-SS-00-EPA	12/08/16	10:22
C161021-26	SS78-SS-30-EPA	12/08/16	10:44
C161021-29	SS79-SS-00-EPA	12/08/16	10:51
C161021-32	SS80-SS-00-EPA	12/08/16	11:00
C161021-35	SS80-SS-90-EPA	12/08/16	11:19
C161021-38	SW81-SW-00-EPA	12/08/16	11:22
1612044-CCV4	Calibration Check	12/08/16	11:25
1612044-CCB4	Calibration Blank	12/08/16	11:28

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8 **Dissolved** **Sequence ID#:** 1612045

Instrument ID #: ICPMS-PE DRC-II Water **LSR #:** A-128

Analysis ID	Sample Name	Analysis Date	Analysis Time
1612045-ICV1	Initial Cal Check	12/08/16	09:19
1612045-SCV1	Secondary Cal Check	12/08/16	09:22
1612045-ICB1	Initial Cal Blank	12/08/16	09:25
1612045-CRL1	Instrument RL Check	12/08/16	09:29
1612045-IFA1	Interference Check A	12/08/16	09:32
1612045-IFB1	Interference Check B	12/08/16	09:35
1612039-BLK1	Blank	12/08/16	09:39
1612039-BS1	Blank Spike	12/08/16	09:42
C161021-03	SS71-SS-00-EPA	12/08/16	09:45
1612039-DUP1	Duplicate	12/08/16	09:48
1612045-SRD1	Serial Dilution	12/08/16	09:51
1612039-MS1	Matrix Spike	12/08/16	09:54
C161021-06	SS72-SS-00-EPA	12/08/16	09:57
1612039-MS2	Matrix Spike	12/08/16	10:00
C161021-09	SS73-SS-00-EPA	12/08/16	10:03
1612045-CCV1	Calibration Check	12/08/16	10:10
1612045-CCB1	Calibration Blank	12/08/16	10:13
C161021-12	SS74-SS-00-EPA	12/08/16	10:16
C161021-15	SS75-SS-00-EPA	12/08/16	10:19
C161021-18	SS76-SS-00-EPA	12/08/16	10:22
C161021-21	SS77-SS-00-EPA	12/08/16	10:25
C161021-24	SS78-SS-00-EPA	12/08/16	10:29
C161021-27	SS78-SS-30-EPA	12/08/16	10:32
C161021-30	SS79-SS-00-EPA	12/08/16	10:35
C161021-33	SS80-SS-00-EPA	12/08/16	10:38
C161021-36	SS80-SS-90-EPA	12/08/16	10:41
C161021-39	SW81-SW-00-EPA	12/08/16	10:44
1612045-CCV2	Calibration Check	12/08/16	10:47
1612045-CCB2	Calibration Blank	12/08/16	10:50

Project Name: **Bonita Peak_Water 3_OCT_2016_A128** **Certificate of Analysis**

TDF #: **A-128**

TechLaw Inc., ESAT Region 8

INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8 **Total Recoverable** **Sequence ID#:** 1612046

Instrument ID #: ICPMS-PE DRC-II Water **LSR #:** A-128

Analysis ID	Sample Name	Analysis Date	Analysis Time
1612046-ICV1	Initial Cal Check	12/08/16	09:19
1612046-SCV1	Secondary Cal Check	12/08/16	09:22
1612046-ICB1	Initial Cal Blank	12/08/16	09:25
1612046-CRL1	Instrument RL Check	12/08/16	09:29
1612046-IFA1	Interference Check A	12/08/16	09:32
1612046-IFB1	Interference Check B	12/08/16	09:35
1612046-CCV1	Calibration Check	12/08/16	10:10
1612046-CCB1	Calibration Blank	12/08/16	10:13
1612046-CCV2	Calibration Check	12/08/16	10:47
1612046-CCB2	Calibration Blank	12/08/16	10:50
1611171-BLK2	Blank	12/08/16	10:56
C161021-02	SS71-SS-00-EPA	12/08/16	10:59
1611171-DUP2	Duplicate	12/08/16	11:02
1612046-SRD1	Serial Dilution	12/08/16	11:05
1611171-SRM2	Reference	12/08/16	11:08
1611171-MS2	Matrix Spike	12/08/16	11:11
C161021-05	SS72-SS-00-EPA	12/08/16	11:14
1611171-MS4	Matrix Spike	12/08/16	11:17
C161021-08	SS73-SS-00-EPA	12/08/16	11:20
1612046-CCV3	Calibration Check	12/08/16	11:26
1612046-CCB3	Calibration Blank	12/08/16	11:30
C161021-11	SS74-SS-00-EPA	12/08/16	11:33
C161021-14	SS75-SS-00-EPA	12/08/16	11:36
C161021-17	SS76-SS-00-EPA	12/08/16	11:39
C161021-20	SS77-SS-00-EPA	12/08/16	11:42
C161021-23	SS78-SS-00-EPA	12/08/16	11:45
C161021-26	SS78-SS-30-EPA	12/08/16	11:49
C161021-29	SS79-SS-00-EPA	12/08/16	11:52
C161021-32	SS80-SS-00-EPA	12/08/16	11:55
C161021-35	SS80-SS-90-EPA	12/08/16	11:58
C161021-38	SW81-SW-00-EPA	12/08/16	12:01
1612046-CCV4	Calibration Check	12/08/16	12:04
1612046-CCB4	Calibration Blank	12/08/16	12:07

US ENVIRONMENTAL PROTECTION AGENCY REGION 8 - Chain Of Custody

Region 8 Laboratory
16194 W. 45th Drive
Golden, CO 80403
Fax: 303-312-7880

PROJECT NAME: Bunita Peaks Seeps & Springs

LSR #:

SAMPLER(S):
Name: Anthony Calderon Signature: Date 2/16/017
Name: Signature: Date:

STATION ID.	STATION DESCRIPTION + NOTES	DATE	TIME	MATRIX	PRESERVATIVE	ANALYSIS: Anions (AN)	ANALYSIS: Total Metals (A)	ANALYSIS: Filtered Metals (F)					NUMBER OF CONTAINERS	Comments: BOTTLE ID.	Comments: LAB ID.
SS71-00	20161017BP-SS71-SS-00-EPA	20161017	1200	W	1	X	X	X					3		
SS72-00	20161017BP-SS72-SS-00-EPA	20161017	1300	W	1	X	X	X					3		
SS73-00	20161017BP-SS73-SS-00-EPA	20161017	1330	W	1	X	X	X					3		
SS74-00	20161017BP-SS74-SS-00-EPA	20161017	1400	W	1	X	X	X					3		
SS75-00	20161017BP-SS75-SS-00-EPA	20161017	1500	W	1	X	X	X					3		

1-Relinquished By: Date/Time 2/16/017
2-Relinquished By: Date/Time
3-Relinquished By: Date/Time

1-Received By: Date/Time 10-21-2016 8:36
2-Received By: Date/Time
3-Received By: Date/Time

PRESERVATIVES 1-HNO3 2-H2PO4 3-H2SO4 4-HCl 5-Na2S2O3 6-Ice 7-DI Ice 8-NaOH 9-Other

MATRIX W-Water S-Soil Sed-Sediment Bio-Bio Tissue O-Other

Shaded Areas = Lab use only
Cooler Temperature =

US ENVIRONMENTAL PROTECTION AGENCY REGION 8 - Chain Of Custody

Region 8 Laboratory
16194 W. 45th Drive
Golden, CO 80403
Fax: 303-312-7880

PROJECT NAME: Bonita Peak Seeps and Spings

LSR #:

SAMPLER(S):
Name: Anthony Culpepper Signature: [signature] Date: 20161018
Name: Signature: Date:

STATION ID.	STATION DESCRIPTION + NOTES	DATE	TIME	MATRIX	PRESERVATIVE	ANALYSIS: ANION (Ny)	TOTAL METALS (A)	FILTRATED METALS (F)					NUMBER OF CONTAINERS	Comments: BOTTLE ID.	LAB ID.
SS76-00	20161018BP-SS76-SS-00-EPA	20161018	1030	W	1	X	X	X					3		
SS77-00	20161018BP-SS77-SS-00-EPA	20161018	1115	W	1	X	X	X					3		
SS78-00	20161018BP-SS78-SS-00-EPA	20161018	1145	W	1	X	X	X					3		
SS78-30	20161018BP-SS78-SS-30-EPA	20161018	1145	W	1	X	X	X					3		
SS79-00	20161018BP-SS79-SS-00-EPA	20161018	1230	W	1	X	X	X					3		
SS80-00	20161018BP-SS80-SS-00-EPA	20161018	1300	W	1	X	X	X					3		
SS80-90	20161018BP-SS80SS-90-EPA	20161018	1400	W	1	X	X	X					3		
SW81-00	20161018BP-SW81-SW-00-EPA	20161018	1530	W	1	X	X	X					3		

1-Relinquished By:	Date/Time	2-Relinquished By:	Date/Time	3-Relinquished By:	Date/Time
[signature]	20161018				
1-Received By: [signature]	Date/Time 10-21-2016	2-Received By:	Date/Time	3-Received By:	Date/Time

PRESERVATIVES 1-HNO3 2-H2PO4 3-H2SO4 4-HCl 5-Na2S2O3 6-Ice 7-Dry Ice 8-NaOH 9-Other

MATRIX W-Water S-Soil Sed-Sediment Bio-Bio Tissue O-Other

Shaded Areas = Lab use only
Cooler Temperature =

Misdelivered to EJ
opened by Test America.
Call w/ questions:
Ashley Muniz
303.736.0195

TechLaw
Quality & Integrity

Sample Receipt Form - TLF-51.01

Project: Bonita Peak **TDF #:** A-128

Date Received: ~~10-21-2016~~ 10-21-2016 **Time Received:** 08:30 **By:** S. Walker

1	Airbill/shipping documents present?	Drop Off	Yes	No
2	Custody seals on **shipping** containers present and intact?	None	Yes	No
3	Custody seals on **sample** containers present and intact?	None	Yes	No
4	Chain of Custody (COC) present?		Yes	No
5	COC and sample container information agree?		Yes	No
6	Aqueous samples preserved correctly, if required?	N/A	Yes	No
7	Samples received within holding times for requested analyses?		Yes	No
8	Sufficient sample volume for requested analyses?		Yes	No
9	Sample containers intact and not leaking?		Yes	No
10	Sample containers appropriate for requested analyses?		Yes	No
11	Samples shipped on ice?		Yes	No
12	Cooler temperature(s) ≤ 6.0 °C?	N/A	Yes	No

Cooler #:	1	2	3	4	5
Temperature (°C):	12.8°C				

pH Strip Lot #: HC 123181

Preservation Name and Lot #: Nitric Acid 70% 0017414

Comments and Additional Information:

Dissolved Metals not preserved upon receipt ad ESDT
Cooler temp above 6°C.

Client notified of anomalies, if necessary?	N/A	Yes	No
Anomalies noted in case narrative and data qualified, if necessary ?	N/A	Yes	No

C16/021

ESAT Technical Direction Form

Contract No. EPW13028
EPA Region 8

Site ID: A8M5 ***Date Issued:*** 9/8/2016 ***Date Closed By:***
TDF ID: A-128 ***Date Updated:***

Name: Bonita Peak Seeps/Springs 2016 Analytical Support OCT

Details: The Contractor shall analyze several water samples that will be collected from various seep and spring sources at the Bonita Peak Mining District Superfund site. The water samples will be analyzed for dissolved (including hardness calculation) and total recoverable metals by 200.7/200.8 and anions as indicated below in the Analytical Information Section.

Site RPMs are Rebecca Thomas and Jamie Miller

TO02/Subtask 02b: Inorganic Chemistry

Analytical Information:

MATRIX

☑ Water ☐ Soils ☐ Vegetation ☐ Biota

WET CHEM

☐ TSS ☐ TDS ☐ DOC ☐ Alk ☑ Chloride ☑ Sulfate ☑ Fluoride ☑ Nitrate ☑ Nitrite
Other Report as combined NO2-NO3

METALS

☑ Dissolved ☑ Total Recoverable ☐ Total ☑ Hardness (Calc)

200.7: ☐ Ag ☑ Al ☐ As ☐ Ba ☑ Be ☐ B ☑ Ca ☐ Cd ☐ Co ☐ Cr ☐ Cu ☑ Fe ☐ K ☑ Mg
☑ Mn ☐ Mo ☐ Na ☐ Ni ☐ Pb ☐ Sb ☐ Se ☑ Sr ☐ Ti ☐ Tl ☐ V ☑ Zn ☑ SiO2

200.8: ☑ Ag ☐ Al ☑ As ☐ Ba ☑ Be ☑ Cd ☐ Co ☑ Cr ☑ Cu ☑ Mn ☐ Mo ☑ Ni ☑ Pb ☑ Sb
☑ Se ☐ Th ☑ Tl ☐ U ☐ V ☑ Zn

7470/7471/747 ☐ Hg

h
12/08/16

FIBERS

☐ PLM ☐ TEM

Deliverables

ID	*Description*	*Due Date*	*Submission Date*
1	Provide final deliverable package to Task Monitor no later than 45 days after delivery of final sample(s).		

TLF-07.01	SOP: QAQ-04.00	Eff. Date: 1/17/2007

ESAT Region 8

Final Report Review Form

LIMS: C16021	Project: Bonita Peak waters 3 of 2016
TDF: A-128	Due Date: 12/5/2016

QA/QC Review – Level III

Compare TDF to performed analysis / Ensure all analyses are complete	☒ Yes	☐ No
Review each Analytical Data Review form noting discrepancies for narrative	☒ Yes	☐ No
Examine each analytical sequence in LIMS using Data Entry Review application	☒ Yes	☐ No
Generate draft report, print QC section	☒ Yes	☐ No
Confirm presence of each analytical batch, QC samples	☒ Yes	☐ No
Examine analytical results (Form I) for accuracy and completeness	☒ Yes	☐ No
Check spike recoveries of LCSs, matrix spikes and post-digestion spikes	☒ Yes	☐ No
Verify serial dilution %D and duplicate RPD for each metals batch	☒ Yes	☐ No

Narrative Comments

None.

Review By: [signature]	Date: 12/9/2016

ESAT Management Review – Level IV

All analytical data and deliverable review forms present and complete	☑ Yes	☐ No
COC copy, received temp. noted, preservatives noted, signature present, holding times met	☑ Yes	☐ No
Copy of TDF present, Analytical requirements met	☑ Yes	☐ No
Case narrative checked for spelling, grammar, technical content and completeness	☑ Yes	☐ No
10% Validation of raw data to reported data on Form Ones	☑ Yes	☐ No
Standard Traceability COAs and ICP / ICP-MS MDL forms present	☑ Yes	☐ No
Final Report cover letter including DCN present	☑ Yes	☐ No
Deficiencies noted requiring correction before delivery to EPA Project Officer	☑ Yes	☐ No

Manager Review Comments

None.

Review By: [signature]	Date: 12/15/16
Corrections By:	Date: