



12/23/14

Technical Report for

LT Environmental

Logan Mesa Baseline Water

050814012

Accutest Job Number: D65601

Sampling Date: 12/10/14

Report to:

LT Environmental
820 Megan Avenue Unit B
Rifle, CO 81650
rzernis@ltenv.com; rfishburn@ltenv.com

ATTN: Ryan Zernis

Total number of pages in report: **56**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	8
Section 4: Sample Results	9
4.1: D65601-1: SWNWT7SR97WSEC2	10
4.2: D65601-1B: SWNWT7SR97WSEC2	15
4.3: D65601-1F: SWNWT7SR97WSEC2	16
Section 5: Misc. Forms	17
5.1: Chain of Custody	18
Section 6: GC Volatiles - QC Data Summaries	20
6.1: Method Blank Summary	21
6.2: Blank Spike Summary	23
6.3: Matrix Spike/Matrix Spike Duplicate Summary	25
Section 7: GC Semi-volatiles - QC Data Summaries	27
7.1: Method Blank Summary	28
7.2: Blank Spike Summary	29
7.3: Matrix Spike/Matrix Spike Duplicate Summary	30
Section 8: Metals Analysis - QC Data Summaries	31
8.1: Prep QC MP14773: B,Ca,Fe,Mg,Mn,K,Na,Sr	32
8.2: Prep QC MP14775: Ba,Se	40
Section 9: General Chemistry - QC Data Summaries	44
9.1: Method Blank and Spike Results Summary	45
9.2: Duplicate Results Summary	46
9.3: Matrix Spike Results Summary	47
9.4: Matrix Spike Duplicate Results Summary	48
Section 10: Misc. Forms (Accutest Laboratories Southeast, Inc.)	49
10.1: Chain of Custody	50
Section 11: GC/MS Volatiles - QC Data (Accutest Laboratories Southeast, Inc.)	53
11.1: Method Blank Summary	54
11.2: Blank Spike Summary	55
11.3: Matrix Spike/Matrix Spike Duplicate Summary	56



Sample Summary

LT Environmental

Job No: D65601

Logan Mesa Baseline Water
Project No: 050814012

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D65601-1	12/10/14	10:40 RZ	12/11/14	AQ	Ground Water	SWNWT7SR97WSEC2
D65601-1B	12/10/14	10:40 RZ	12/11/14	AQ	Ground Water	SWNWT7SR97WSEC2
D65601-1F	12/10/14	10:40 RZ	12/11/14	AQ	Groundwater Filtered	SWNWT7SR97WSEC2



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: LT Environmental

Job No D65601

Site: Logan Mesa Baseline Water

Report Date 12/23/2014 3:08:34 PM

On 12/11/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D65601 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: F:VP1096

- The data for SW846 8260B meets quality control requirements.
- D65601-1: Analysis performed at Accutest Laboratories, Orlando FL.

Volatiles by GC By Method RSK175 MOD

Matrix AQ

Batch ID: GFB594

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65764-1MS, D65764-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of Ethane, Propane are outside control limits. Outside control limits due to possible matrix interference.
- D65764-1MSD: The pH of the sample was >2 at time of analysis.
- D65764-1MS: The pH of the sample was >2 at time of analysis.

Volatiles by GC By Method SW846 8015B

Matrix AQ

Batch ID: GGB1509

- All samples were analyzed within the recommended method holding time.
- Sample(s) D65694-1MS, D65694-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix AQ

Batch ID: OP11084

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D60583-1MS, D60583-1MSD were used as the QC samples indicated.

Metals By Method EPA 200.7

Matrix AQ

Batch ID: MP14773

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65601-1FMS, D65601-1FMSD were used as the QC samples for the metals analysis.

Metals By Method EPA 200.8

Matrix AQ

Batch ID: MP14775

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65583-1FMS, D65583-1FMSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ

Batch ID: GP14222

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65571-3MS, D65571-3MSD were used as the QC samples for the Bromide, Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide analysis.
- D65601-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method HACH IRB-BART

Matrix AQ

Batch ID: MB475

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SLYM-BART

Matrix AQ

Batch ID: MB476

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SRB-BART

Matrix AQ

Batch ID: MB477

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH8190/SM4500P-B/E

Matrix AQ

Batch ID: GP14266

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65370-1MS, D65370-1MSD, D65601-1DUP were used as the QC samples for the Phosphorus, Total analysis.
- The duplicate RPD(s) for Phosphorus, Total are outside control limits for sample GP14266-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method SM 2320B-2011

Matrix AQ

Batch ID: GN27880

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65553-3DUP, D65553-3MS, D65553-3MSD were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

Matrix AQ

Batch ID: GN27881

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix AQ

Batch ID: GN27882

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM 2510B-2011

Matrix AQ

Batch ID: GP14269

- Sample(s) D65601-1DUP were used as the QC samples for the Specific Conductivity analysis.

Wet Chemistry By Method SM 2540C-2011

Matrix AQ

Batch ID: GN27895

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D65599-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix AQ

Batch ID: GN27871

- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: D65601-1

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Accutest Mountain States

Job No: D65601

Site: LTENVCOR: Logan Mesa Baseline Water

Report Date: 12/22/2014 9:23:53

1 Sample(s) were collected on 12/10/2014 and were received at Accutest SE on 12/12/2014 properly preserved, at 2.8 Deg. C and intact. These Samples received an Accutest job number of D65601. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ

Batch ID: VP1096

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) D65601-1MS, D65601-1MSD were used as the QC samples indicated.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Kim Benham, Client Services (signature on file)

Date: December 22, 2014

Summary of Hits

Page 1 of 1

Job Number: D65601
Account: LT Environmental
Project: Logan Mesa Baseline Water
Collected: 12/10/14



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

D65601-1 SWNWT7SR97WSEC2

Alkalinity, Bicarbonate as CaCO3	370	5.0	mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3	370	5.0	mg/l	SM 2320B-2011
Bromide	0.23	0.10	mg/l	EPA 300.0/SW846 9056
Chloride	27.1	1.0	mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.32	0.020	mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved	594	10	mg/l	SM 2540C-2011
Specific Conductivity	758	1.0	umhos/cm	SM 2510B-2011
Sulfate	115	5.0	mg/l	EPA 300.0/SW846 9056
pH	7.81		su	SM4500HB+ -2011/9040C

D65601-1B SWNWT7SR97WSEC2

Iron Reducing Bacteria	9000	25	CFU/ml	HACH IRB-BART
Slime Forming Bacteria	66500	500	CFU/ml	HACH SLYM-BART
Sulfate Reducing Bacteria	5000	200	CFU/ml	HACH SRB-BART

D65601-1F SWNWT7SR97WSEC2

Barium	69.1	4.0	ug/l	EPA 200.8
Calcium	77900	400	ug/l	EPA 200.7
Magnesium	42900	200	ug/l	EPA 200.7
Selenium	1.0	0.80	ug/l	EPA 200.8
Sodium	74300	400	ug/l	EPA 200.7
Strontium	1300	5.0	ug/l	EPA 200.7

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SWNWT7SR97WSEC2		Date Sampled:	12/10/14
Lab Sample ID:	D65601-1		Date Received:	12/11/14
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	SW846 8260B			
Project:	Logan Mesa Baseline Water			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	P29608.D	1	12/17/14	AFL	n/a	n/a	F:VP1096
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.24	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.28	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.66	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	105%		85-112%
460-00-4	4-Bromofluorobenzene	104%		83-118%

(a) Analysis performed at Accutest Laboratories, Orlando FL.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	SWNWT7SR97WSEC2	Date Sampled:	12/10/14
Lab Sample ID:	D65601-1	Date Received:	12/11/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Logan Mesa Baseline Water		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB28022.D	1	12/16/14	EP	n/a	n/a	GGB1509
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	89%		60-140%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SWNWT7SR97WSEC2	Date Sampled:	12/10/14
Lab Sample ID:	D65601-1	Date Received:	12/11/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSK175 MOD		
Project:	Logan Mesa Baseline Water		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB12793.D	1	12/18/14	JJ	n/a	n/a	GFB594
Run #2							

Run #	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.0 Deg. C
Run #2				

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SWNWT7SR97WSEC2	Date Sampled:	12/10/14
Lab Sample ID:	D65601-1	Date Received:	12/11/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	Logan Mesa Baseline Water		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD38239.D	1	12/16/14	JJ	12/15/14	OP11084	GFD1718
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	69%		10-130%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SWNWT7SR97WSEC2

Lab Sample ID: D65601-1

Matrix: AQ - Ground Water

Project: Logan Mesa Baseline Water

Date Sampled: 12/10/14

Date Received: 12/11/14

Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	370	5.0	mg/l	1	12/15/14	TJ	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	12/15/14	TJ	SM 2320B-2011
Alkalinity, Total as CaCO ₃	370	5.0	mg/l	1	12/15/14	TJ	SM 2320B-2011
Bromide	0.23	0.10	mg/l	2	12/11/14 15:36	JB	EPA 300.0/SW846 9056
Chloride	27.1	1.0	mg/l	2	12/11/14 15:36	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.32	0.020	mg/l	2	12/11/14 15:36	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite ^a	< 0.0080	0.0080	mg/l	2	12/11/14 15:36	JB	EPA 300.0/SW846 9056
Phosphorus, Total	< 0.010	0.010	mg/l	1	12/18/14 08:00	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	594	10	mg/l	1	12/16/14	JF	SM 2540C-2011
Specific Conductivity	758	1.0	umhos/cm	1	12/18/14	AK	SM 2510B-2011
Sulfate	115	5.0	mg/l	10	12/11/14 19:39	JB	EPA 300.0/SW846 9056
pH	7.81		su	1	12/15/14 08:30	TB	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SWNWT7SR97WSEC2	Date Sampled:	12/10/14
Lab Sample ID:	D65601-1B	Date Received:	12/11/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Logan Mesa Baseline Water		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron Reducing Bacteria	9000	25	CFU/ml	1	12/15/14	MM	HACH IRB-BART
Slime Forming Bacteria	66500	500	CFU/ml	1	12/15/14	MM	HACH SLYM-BART
Sulfate Reducing Bacteria	5000	200	CFU/ml	1	12/15/14	MM	HACH SRB-BART

RL = Reporting Limit

Report of Analysis

Client Sample ID: SWNWT7SR97WSEC2
 Lab Sample ID: D65601-1F
 Matrix: AQ - Groundwater Filtered
 Project: Logan Mesa Baseline Water

Date Sampled: 12/10/14
 Date Received: 12/11/14
 Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	69.1	4.0	ug/l	2	12/15/14	12/18/14 JB	EPA 200.8 ³	EPA 200.8 ⁵
Boron	< 50	50	ug/l	1	12/15/14	12/16/14 KV	EPA 200.7 ²	EPA 200.7 ⁴
Calcium	77900	400	ug/l	1	12/15/14	12/16/14 KV	EPA 200.7 ²	EPA 200.7 ⁴
Iron	< 10	10	ug/l	1	12/15/14	12/16/14 KV	EPA 200.7 ²	EPA 200.7 ⁴
Magnesium	42900	200	ug/l	1	12/15/14	12/15/14 KV	EPA 200.7 ¹	EPA 200.7 ⁴
Manganese	< 5.0	5.0	ug/l	1	12/15/14	12/15/14 KV	EPA 200.7 ¹	EPA 200.7 ⁴
Potassium	< 1000	1000	ug/l	1	12/15/14	12/15/14 KV	EPA 200.7 ¹	EPA 200.7 ⁴
Selenium	1.0	0.80	ug/l	2	12/15/14	12/18/14 JB	EPA 200.8 ³	EPA 200.8 ⁵
Sodium	74300	400	ug/l	1	12/15/14	12/16/14 KV	EPA 200.7 ²	EPA 200.7 ⁴
Strontium	1300	5.0	ug/l	1	12/15/14	12/15/14 KV	EPA 200.7 ¹	EPA 200.7 ⁴

(1) Instrument QC Batch: MA5586

(2) Instrument QC Batch: MA5590

(3) Instrument QC Batch: MA5599

(4) Prep QC Batch: MP14773

(5) Prep QC Batch: MP14775

RL = Reporting Limit

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.accutest.com

[illegible]

5.1

D65601: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D65601 **Client:** LT **Project:** _____
Date / Time Received: 12/11/2014 12:15:00 PM **Delivery Method:** _____ **Airbill #'s:** CO
Cooler Temps (Initial/Adjusted): #1: (4.1/4.1):

Cooler Security
Y or N

- | | |
|--|---|
| 1. Custody Seals Present: <input checked="" type="checkbox"/> <input type="checkbox"/> | 3. COC Present: <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2. Custody Seals Intact: <input checked="" type="checkbox"/> <input type="checkbox"/> | 4. Smpl Dates/Time OK: <input checked="" type="checkbox"/> <input type="checkbox"/> |

Cooler Temperature
Y or N

- | | |
|---|--|
| 1. Temp criteria achieved: <input checked="" type="checkbox"/> <input type="checkbox"/> | |
| 2. Cooler temp verification: <u>Bar Therm;</u> | |
| 3. Cooler media: <u>Ice (Bag)</u> | |
| 4. No. Coolers: <u>1</u> | |

Quality Control Preservation
Y or N
N/A

- | | |
|---|--|
| 1. Trip Blank present / cooler: <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| 2. Trip Blank listed on COC: <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| 3. Samples preserved properly: <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| 4. VOCs headspace free: <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |

Comments

Sample Integrity - Documentation
Y or N

- | | |
|---|--|
| 1. Sample labels present on bottles: <input checked="" type="checkbox"/> <input type="checkbox"/> | |
| 2. Container labeling complete: <input checked="" type="checkbox"/> <input type="checkbox"/> | |
| 3. Sample container label / COC agree: <input checked="" type="checkbox"/> <input type="checkbox"/> | |

Sample Integrity - Condition
Y or N

- | | |
|---|--|
| 1. Sample recvd within HT: <input checked="" type="checkbox"/> <input type="checkbox"/> | |
| 2. All containers accounted for: <input checked="" type="checkbox"/> <input type="checkbox"/> | |
| 3. Condition of sample: <u>Intact</u> | |

Sample Integrity - Instructions
Y or N
N/A

- | | |
|--|--|
| 1. Analysis requested is clear: <input checked="" type="checkbox"/> <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests: <input type="checkbox"/> <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: <input checked="" type="checkbox"/> <input type="checkbox"/> | |
| 4. Compositing instructions clear: <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> | |
| 5. Filtering instructions clear: <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> | |

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D65601

Account: LTENVCOR LT Environmental

Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1509-MB	GB28010.D	1	12/16/14	EP	n/a	n/a	GGB1509

The QC reported here applies to the following samples:

Method: SW846 8015B

D65601-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	89% 60-140%

Method Blank Summary

Page 1 of 1

Job Number: D65601

Account: LTENVCOR LT Environmental

Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB594-MB	FB12773.D	1	12/18/14	JJ	n/a	n/a	GFB594

The QC reported here applies to the following samples:

Method: RSK175 MOD

D65601-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

Blank Spike Summary

Page 1 of 1

Job Number: D65601

Account: LTENVCOR LT Environmental

Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1509-BS	GB28011.D	1	12/16/14	EP	n/a	n/a	GGB1509

The QC reported here applies to the following samples:

Method: SW846 8015B

D65601-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.32	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	93%	60-140%

* = Outside of Control Limits.

Blank Spike Summary

Page 1 of 1

Job Number: D65601

Account: LTENVCOR LT Environmental

Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB594-BS	FB12774.D	10	12/18/14	JJ	n/a	n/a	GFB594

The QC reported here applies to the following samples:

Method: RSK175 MOD

D65601-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.512	0.531	104	70-130
74-84-0	Ethane	0.923	0.966	105	70-130
74-98-6	Propane	1.38	1.44	104	67-130

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D65601
Account: LTENVCOR LT Environmental
Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D65694-1MS	GB28013.D	1	12/16/14	EP	n/a	n/a	GGB1509
D65694-1MSD	GB28014.D	1	12/16/14	EP	n/a	n/a	GGB1509
D65694-1	GB28012.D	1	12/16/14	EP	n/a	n/a	GGB1509

The QC reported here applies to the following samples:

Method: SW846 8015B

D65601-1

CAS No.	Compound	D65694-1 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	2.29	104	2.2	2.26	103	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D65694-1	Limits
120-82-1	1,2,4-Trichlorobenzene	93%	91%	90%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D65601
Account: LTENVCOR LT Environmental
Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D65764-1MS ^a	FB12778.D	20	12/18/14	JJ	n/a	n/a	GFB594
D65764-1MSD ^a	FB12779.D	20	12/18/14	JJ	n/a	n/a	GFB594
D65764-1 ^a	FB12775.D	1	12/18/14	JJ	n/a	n/a	GFB594
D65764-1 ^a	FB12777.D	20	12/18/14	JJ	n/a	n/a	GFB594

The QC reported here applies to the following samples:

Method: RSK175 MOD

D65601-1

CAS No.	Compound	D65764-1 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	7.22 ^c	1.02	7.89	65	1.02	8.86	160* ^b	12	51-155/30
74-84-0	Ethane	0.0183	1.85	0.841	45* ^d	1.85	0.844	45* ^d	0	58-130/30
74-98-6	Propane	ND	2.76	1.23	45* ^d	2.76	1.25	45* ^d	2	46-130/30

- (a) The pH of the sample was > 2 at time of analysis.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Result is from Run #2.
(d) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D65601
Account: LTENVCOR LT Environmental
Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11084-MB	FD38225.D	1	12/16/14	JJ	12/15/14	OP11084	GFD1718

The QC reported here applies to the following samples:

Method: SW846-8015B

D65601-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	61% 10-130%

Blank Spike Summary

Page 1 of 1

Job Number: D65601

Account: LTENVCOR LT Environmental

Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11084-BS	FD38227.D	1	12/16/14	JJ	12/15/14	OP11084	GFD1718

The QC reported here applies to the following samples:

Method: SW846-8015B

D65601-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	2.08	42	33-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	63%	10-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D65601
Account: LTENVCOR LT Environmental
Project: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11084-MS	FD38229.D	1	12/16/14	JJ	12/15/14	OP11084	GFD1718
OP11084-MSD	FD38231.D	1	12/16/14	JJ	12/15/14	OP11084	GFD1718
D60583-1	FD38233.D	1	12/16/14	JJ	12/15/14	OP11084	GFD1718

The QC reported here applies to the following samples:

Method: SW846-8015B

D65601-1

CAS No.	Compound	D60583-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		5	2.46	49	5	2.65	53	7	33-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D60583-1	Limits
84-15-1	o-Terphenyl	81%	90%	93%	10-130%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

QC Batch ID: MP14773
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/15/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	8.6	11		
Antimony	30	3.2	21		
Arsenic	25	5.2	9		
Barium	10	1.4	1.4		
Beryllium	10	.8	1.7		
Boron	50	6.7	6.6	2.3	<50
Cadmium	10	.4	.36		
Calcium	400	2.2	66	6.9	<400
Chromium	10	.4	1.4		
Cobalt	5.0	.4	.51		
Copper	10	1.2	1.5		
Iron	10	2.2	3.2	3.5	<10
Lead	50	3.6	4.1		
Lithium	5.0	1.9	1.9		
Magnesium	200	14	29	9.8	<200
Manganese	5.0	.01	.29	0.20	<5.0
Molybdenum	10	.8	1.1		
Nickel	30	.9	.87		
Phosphorus	100	15	24		
Potassium	1000	130	230	85.1	<1000
Selenium	50	8.8	9.3		
Silicon	50	5.2	5.6		
Silver	30	.4	.4		
Sodium	400	4.9	36	2.1	<400
Strontium	5.0	.01	.12	1.1	<5.0
Thallium	10	2.9	4.9		
Tin	50	13	13		
Titanium	10	.15	.43		
Uranium	50	3.7	3.9		
Vanadium	10	.4	.39		
Zinc	30	.6	1.9		

Associated samples MP14773: D65601-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

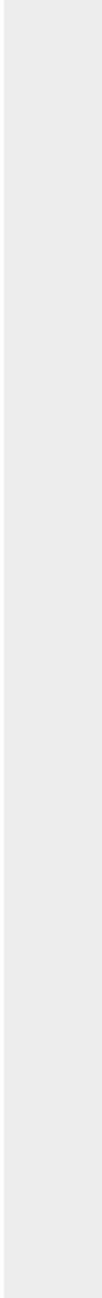
QC Batch ID: MP14773
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/15/14

Metal	RL	IDL	MDL	MB raw	final
-------	----	-----	-----	-----------	-------

(anr) Analyte not requested



8.1.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65601
 Account: LTENVCOR - LT Environmental
 Project: Logan Mesa Baseline Water

QC Batch ID: MP14773
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 12/15/14

Metal	D65601-1F Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron	37.6	1120	1000	108.2	70-130
Cadmium					
Calcium	77900	101000	25000	92.4	70-130
Chromium					
Cobalt					
Copper					
Iron	9.3	5070	5000	101.2	70-130
Lead					
Lithium					
Magnesium	42900	67900	25000	100.0	70-130
Manganese	1.3	550	500	109.7	70-130
Molybdenum					
Nickel					
Phosphorus					
Potassium	894	26200	25000	101.2	70-130
Selenium					
Silicon					
Silver					
Sodium	74300	98200	25000	95.6	70-130
Strontium	1300	1800	500	100.0	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP14773: D65601-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65601
 Account: LTENVCOR - LT Environmental
 Project: Logan Mesa Baseline Water

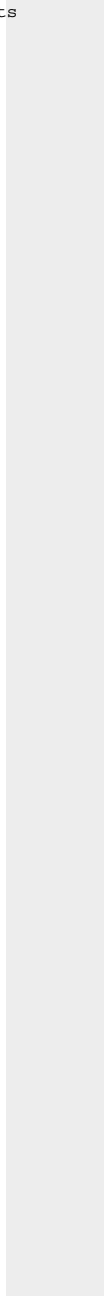
QC Batch ID: MP14773
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 12/15/14

Metal	D65601-1F Original MS	SpikeLot ICPALL2 % Rec	QC Limits
-------	--------------------------	---------------------------	--------------

(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested



8.1.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

QC Batch ID: MP14773
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/15/14

Metal	D65601-1F Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	37.6	1130	1000	109.2	0.9	20
Cadmium						
Calcium	77900	102000	25000	96.4	1.0	20
Chromium						
Cobalt						
Copper						
Iron	9.3	5100	5000	101.8	0.6	20
Lead						
Lithium						
Magnesium	42900	68600	25000	102.8	1.0	20
Manganese	1.3	550	500	109.7	0.0	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	894	26300	25000	101.6	0.4	20
Selenium						
Silicon						
Silver						
Sodium	74300	99000	25000	98.8	0.8	20
Strontium	1300	1820	500	104.0	1.1	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP14773: D65601-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65601
 Account: LTENVCOR - LT Environmental
 Project: Logan Mesa Baseline Water

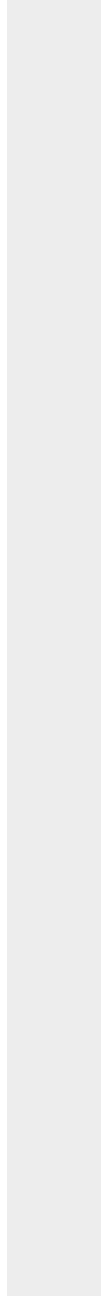
QC Batch ID: MP14773
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 12/15/14

Metal	D65601-1F Original MSD	SpikeLot ICPALL2 % Rec	MSD RPD	QC Limit
-------	---------------------------	---------------------------	------------	-------------

(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested



8.1.2

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

QC Batch ID: MP14773
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/15/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1070	1000	107.0	85-115
Cadmium				
Calcium	24300	25000	97.2	85-115
Chromium				
Cobalt				
Copper				
Iron	5220	5000	104.4	85-115
Lead				
Lithium				
Magnesium	26000	25000	104.0	85-115
Manganese	566	500	113.2	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	25100	25000	100.4	85-115
Selenium				
Silicon				
Silver				
Sodium	24900	25000	99.6	85-115
Strontium	539	500	107.8	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP14773: D65601-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

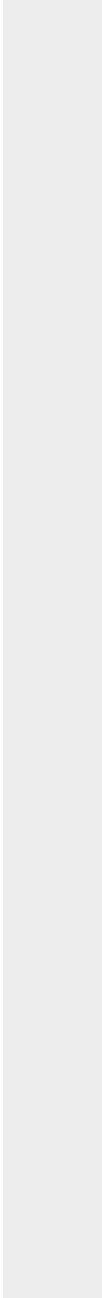
QC Batch ID: MP14773
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 12/15/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
-------	---------------	---------------------	-------	--------------

(anr) Analyte not requested



8.1.3
8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

QC Batch ID: MP14775
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 12/15/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.1	2		
Antimony	0.40	.0022	.011		
Arsenic	0.20	.017	.044		
Barium	2.0	.016	.079	0.068	<2.0
Beryllium	0.20	.016	.069		
Boron	40	.49	2.1		
Cadmium	0.10	.036	.042		
Calcium	400	5.6	12		
Chromium	2.0	.053	.053		
Cobalt	0.20	.0049	.015		
Copper	2.0	.06	.13		
Iron	10	3.5	4.6		
Lead	0.50	.0079	.008		
Magnesium	100	1.3	1.3		
Manganese	1.0	.12	.13		
Molybdenum	1.0	.049	.029		
Nickel	2.0	.0088	.027		
Phosphorus	60	2.6	4.3		
Potassium	200	2.9	2.9		
Selenium	0.40	.06	.21	-0.022	<0.40
Silver	0.10	.0019	.008		
Sodium	500	4.9	4.9		
Strontium	20	.01	.015		
Thallium	0.20	.0024	.005		
Tin	10	.063	1.3		
Titanium	2.0	.059	.092		
Uranium	0.20	.0017	.002		
Vanadium	1.0	.037	.2		
Zinc	10	.21	.96		

Associated samples MP14775: D65601-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65601
 Account: LTENVCOR - LT Environmental
 Project: Logan Mesa Baseline Water

QC Batch ID: MP14775
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 12/15/14

Metal	D65583-1F Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	43.1	457	400	103.5	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	3.2	200	200	98.4	70-130
Silver	anr				
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP14775: D65601-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D65601
 Account: LTENVCOR - LT Environmental
 Project: Logan Mesa Baseline Water

QC Batch ID: MP14775
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 12/15/14

Metal	D65583-1F Original MSD	Spikelot ICPAL2	% Rec	MSD RPD	QC Limit
Aluminum					
Antimony					
Arsenic	anr				
Barium	43.1	462	400	104.7	1.1
Beryllium					20
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	3.2	200	200	98.4	0.0
Silver	anr				20
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP14775: D65601-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

QC Batch ID: MP14775
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 12/15/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	412	400	103.0	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	194	200	97.0	85-115
Silver	anr			
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP14775: D65601-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN27881	5.0	2.1	mg/l	100	93.6	93.6	90-110%
Alkalinity, Carbonate	GN27882	5.0	2.1	mg/l	100	93.6	93.6	80-120%
Alkalinity, Total as CaCO3	GN27880	5.0	2.1	mg/l	100	93.6	93.6	90-110%
Bromide	GP14222/GN27836	0.050	0.0	mg/l	0.5	0.486	97.2	90-110%
Chloride	GP14222/GN27836	0.50	0.0	mg/l	5	4.98	99.6	90-110%
Iron Reducing Bacteria	MB475	25	<25	CFU/ml				
Nitrogen, Nitrate	GP14222/GN27836	0.010	0.0	mg/l	0.1	0.101	101.0	90-110%
Nitrogen, Nitrite	GP14222/GN27836	0.0040	0.0	mg/l	0.05	0.0501	100.2	90-110%
Phosphorus, Total	GP14266/GN27941	0.010	0.0	mg/l	0.38	0.38	100.6	80-120%
Slime Forming Bacteria	MB476	500	<500	CFU/ml				
Solids, Total Dissolved	GN27895	10	0.0	mg/l	400	402	100.5	90-110%
Specific Conductivity	GP14269/GN27933			umhos/cm	99.4	96.7	97.3	90-110%
Sulfate	GP14222/GN27836	0.50	0.0	mg/l	5	5.01	100.2	90-110%
Sulfate Reducing Bacteria	MB477	200	<200	CFU/ml				
pH	GN27871			su	8.00	7.98	99.8	99.1-100.9%

Associated Samples:

Batch MB475: D65601-1B
Batch MB476: D65601-1B
Batch MB477: D65601-1B
Batch GN27871: D65601-1
Batch GN27880: D65601-1
Batch GN27881: D65601-1
Batch GN27882: D65601-1
Batch GN27895: D65601-1
Batch GP14222: D65601-1
Batch GP14266: D65601-1
Batch GP14269: D65601-1
(*) Outside of QC limits

9.1
6

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO ₃	GN27880	D65553-3	mg/l	104	104	0.2	0-20%
Phosphorus, Total	GP14266/GN27941	D65601-1	mg/l	0.0080	0.011	27.3(a)	0-20%
Solids, Total Dissolved	GN27895	D65599-1	mg/l	17700	17800	0.6	0-20%
Specific Conductivity	GP14269/GN27933	D65601-1	umhos/cm	758	764	0.8	0-20%

Associated Samples:

Batch GN27880: D65601-1

Batch GN27895: D65601-1

Batch GP14266: D65601-1

Batch GP14269: D65601-1

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN27880	D65553-3	mg/l	104	100	196	91.3	80-120%
Bromide	GP14222/GN27836	D65571-3	mg/l	0.0	0.5	0.53	106.0	80-120%
Chloride	GP14222/GN27836	D65571-3	mg/l	1.3	5	6.1	96.0	80-120%
Nitrogen, Nitrate	GP14222/GN27836	D65571-3	mg/l	0.0	0.1	0.098	98.0	80-120%
Nitrogen, Nitrite	GP14222/GN27836	D65571-3	mg/l	0.0	0.05	0.051	102.0	80-120%
Phosphorus, Total	GP14266/GN27941	D65370-1	mg/l	0.10	0.40	0.47	92.1	80-120%
Sulfate	GP14222/GN27836	D65571-3	mg/l	5.5	5	10.5	100.0	80-120%

Associated Samples:

Batch GN27880: D65601-1

Batch GP14222: D65601-1

Batch GP14266: D65601-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D65601
Account: LTENVCOR - LT Environmental
Project: Logan Mesa Baseline Water

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN27880	D65553-3	mg/l	104	100	196	0.1	20%
Bromide	GP14222/GN27836	D65571-3	mg/l	0.0	0.5	0.52	1.9	20%
Chloride	GP14222/GN27836	D65571-3	mg/l	1.3	5	6.1	0.0	20%
Nitrogen, Nitrate	GP14222/GN27836	D65571-3	mg/l	0.0	0.1	0.098	0.0	20%
Nitrogen, Nitrite	GP14222/GN27836	D65571-3	mg/l	0.0	0.05	0.050	2.0	20%
Phosphorus, Total	GP14266/GN27941	D65370-1	mg/l	0.10	0.40	0.45	4.5	20%
Sulfate	GP14222/GN27836	D65571-3	mg/l	5.5	5	10.5	0.0	20%

Associated Samples:

Batch GN27880: D65601-1

Batch GP14222: D65601-1

Batch GP14266: D65601-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

9.4

9

Misc. Forms

Custody Documents and Other Forms

(Accutest Laboratories Southeast, Inc.)

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: D65601 CLIENT: AMS PROJECT: D65601
 DATE/TIME RECEIVED: 12-12-14 1030 (MM/DD/YY 24:00) NUMBER OF COOLERS RECEIVED: 1
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER DELIVERY OTHER: _____
 AIRBILL NUMBERS: 5810 2761 9903

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☒ TRIP BLANK PROVIDED
- ☐ TRIP BLANK NOT PROVIDED
- ☐ TRIP BLANK NOT ON COC
- ☒ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☒ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM _____ 5-GRAM _____
 NUMBER OF 5035 FIELD KITS ? _____
 NUMBER OF LAB FILTERED METALS ? _____

pH PAPER LOT# WIDE RANGE A036122

NARROW RANGE HC421754 OTHER (specify) 405-230010

SUMMARY OF COMMENTS: _____

TEMPERATURE INFORMATION

IR THERM ID 1 CORR. FACTOR +0.4
 OBSERVED TEMPS: 2.4
 CORRECTED TEMPS: 2.8

SAMPLE INFORMATION

- ☐ INCORRECT NUMBER OF CONTAINERS USED
- ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
- ☐ INSUFFICIENT VOLUME FOR ANALYSIS
- ☐ DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- ☐ ID'S ON COC DO NOT MATCH LABEL
- ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- ☐ UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- ☐ SAMPLE CONTAINER(S) RECEIVED BROKEN
- ☐ 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- ☐ BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- ☐ % SOLIDS JAR NOT RECEIVED
- ☐ RESIDUAL CHLORINE PRESENT LOT# _____

(APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

TECHNICIAN SIGNATURE/DATE

[Signature] 12-15-14

REVIEWER SIGNATURE/DATE

[Signature] 12-15-14

NF 10/14

receipt confirmation 102914.xls

D65601: Chain of Custody

Page 2 of 3

SHIP DATE: 11DEC14
ACT WT: 26.0 LB MIN
CART: 738853/CFE2704

ORIGIN TO: (803) 425-6021
ACCUTEST FLORIDA
4026 YOUNGFIELD STREET
HEAT RIDGE, CO 800333862
UNITED STATES US

BILL SENDER

TO: SAMPLE RECEIVING
ACCUTEST FLORIDA
4405 VINELAND ROAD
ORLANDO FL 32811

SHIP DATE: 11DEC14

FedEx
EXPRESS

156149-434 RT2 09/12

IRK 5810 2761 9903 FRI - 12 DEC 14
STANDARD OVERNIGHT

XH TIXA 2.8 32811
FL-US MCO

Post # 156149-434 RT2 09/12

D65601: Chain of Custody
Page 3 of 3

GC/MS Volatiles

QC Data Summaries

(Accutest Laboratories Southeast, Inc.)

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D65601
Account: ALMS Accutest Mountain States
Project: LTENVCOR: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1096-MB	P29598.D	1	12/17/14	SP	n/a	n/a	VP1096

The QC reported here applies to the following samples:

Method: SW846 8260B

D65601-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.24	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.28	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.66	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	99% 83-118%
17060-07-0	1,2-Dichloroethane-D4	94% 79-125%
2037-26-5	Toluene-D8	101% 85-112%
460-00-4	4-Bromofluorobenzene	103% 83-118%

Blank Spike Summary

Page 1 of 1

Job Number: D65601
Account: ALMS Accutest Mountain States
Project: LTENVCOR: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1096-BS	P29597.D	1	12/17/14	SP	n/a	n/a	VP1096

The QC reported here applies to the following samples:

Method: SW846 8260B

D65601-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	22.8	91	81-122
100-41-4	Ethylbenzene	25	25.5	102	81-121
108-88-3	Toluene	25	23.8	95	80-120
1330-20-7	Xylene (total)	75	81.3	108	80-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	79-125%
2037-26-5	Toluene-D8	100%	85-112%
460-00-4	4-Bromofluorobenzene	94%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D65601
Account: ALMS Accutest Mountain States
Project: LTENVCOR: Logan Mesa Baseline Water

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D65601-1MS	P29619.D	1	12/17/14	SP	n/a	n/a	VP1096
D65601-1MSD	P29620.D	1	12/17/14	SP	n/a	n/a	VP1096
D65601-1	P29608.D	1	12/17/14	SP	n/a	n/a	VP1096

The QC reported here applies to the following samples:

Method: SW846 8260B

D65601-1

CAS No.	Compound	D65601-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	25	22.4	90	25	21.7	87	3	81-122/14
100-41-4	Ethylbenzene	ND	25	25.0	100	25	24.5	98	2	81-121/14
108-88-3	Toluene	ND	25	21.5	86	25	21.9	88	2	80-120/14
1330-20-7	Xylene (total)	ND	75	79.7	106	75	78.1	104	2	80-126/15

CAS No.	Surrogate Recoveries	MS	MSD	D65601-1	Limits
1868-53-7	Dibromofluoromethane	103%	102%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	97%	96%	79-125%
2037-26-5	Toluene-D8	97%	97%	105%	85-112%
460-00-4	4-Bromofluorobenzene	90%	89%	104%	83-118%

* = Outside of Control Limits.