July 17, 2014

Carlos Lujan, Reclamation Program Lead
Northwest Region Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
796 Megan Ave., Suite 201
Rifle, Colorado 81650

Submitted via Email
carlos.lujan@state.co.us

RE: North Vega 2B Release – Incident Closure Report
COGCC Incident Tracking #2148252

Dear Mr. Lujan,

Olsson Associates (Olsson) was contracted by Piceance Energy LLC (Piceance) to assist them in the assessment and response to a fluid release at their North Vega 2B Pad (Fac ID #334433). The following report summarizes the incident, assessment, initial reporting and response.

Incident History

On March 14, 2014, approximately 107 barrels of produced water was released out of a cracked weld on a frac tank. It was originally assumed that the water did not leave lined containment. Please review the Form 19 filed on March 25, 2014 for further information on the incident.

Incident Response

The tank was immediately emptied into another vessel and all other tanks and lines were inspected to insure no further leak was occurring. As a safeguard, Olsson collected a sample inside and outside of containment (See Table 1) to ensure that no produced water had left the berm. It was determined that the spill did breach containment but stayed on location.

The spill area was field-screened for VOCs using a Photoionization detector on June 11, 2014. The results of the field-screening indicated minimal hydrocarbon impact to the soils in the surrounding area (See Figure 3). Based upon the water data and PID screening, any impact to the soil is not expected to exceed COGCC Table 910-1 levels.

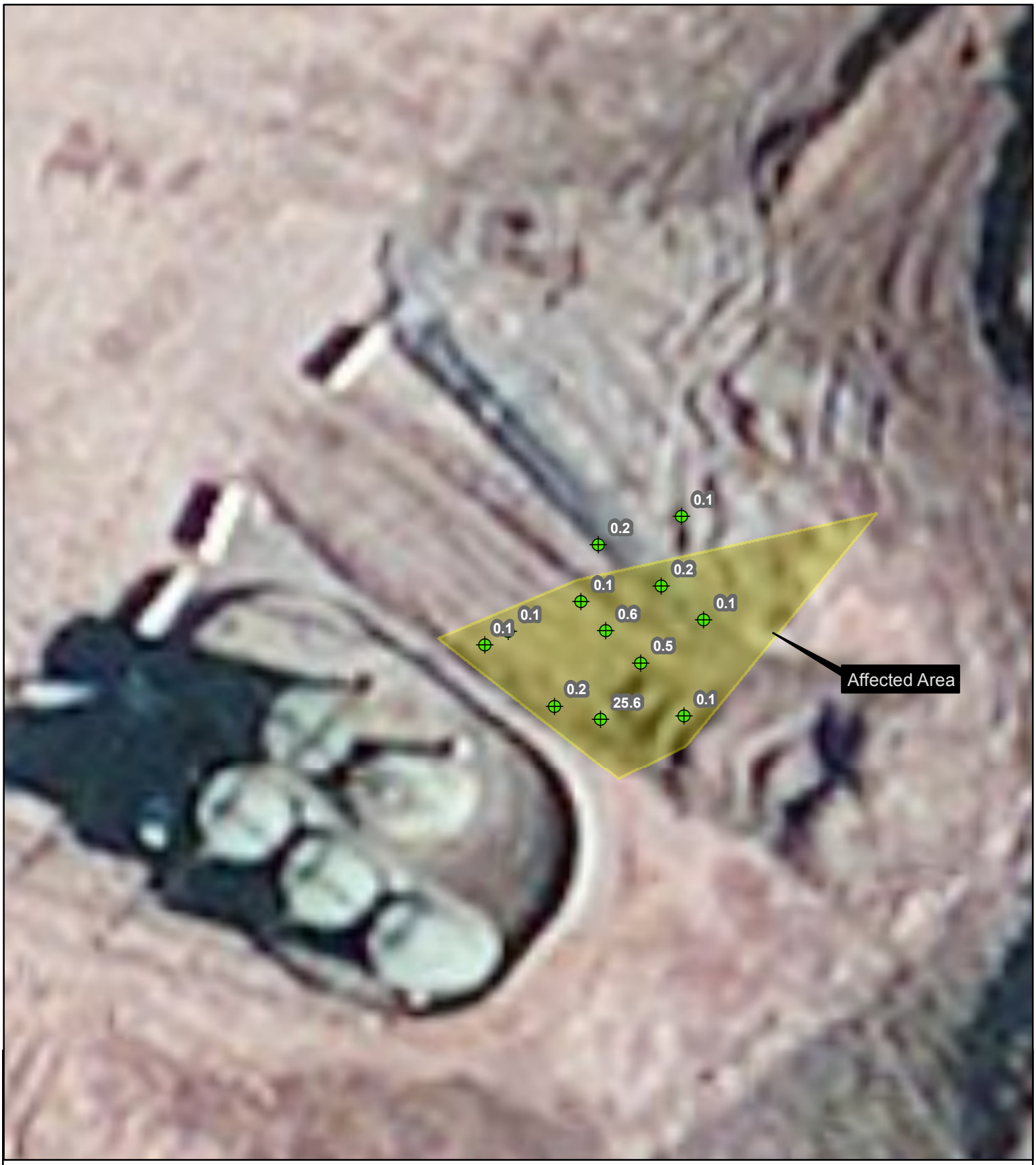
Request for Closure

Olsson recommends that the incident response executed for this incident was sufficient to protect the environment. No further action should be required in order to close the file on this incident. Olsson appreciates your time in reviewing this documentation. Please contact me if you have any questions regarding the incident.

Sincerely,
OLSSON ASSOCIATES

Stuart Hall
Senior Scientist

Cc: COGCC Form 4 Sundry Notice



PID Sample Location (ppm)

Affected Area

0 25 50 Feet

N

PROJECT	014-0806
DRAWN BY:	JWH
DATE:	03/24/2014

Piceance Energy LLC
NVEGA 2A
PID Reading Locations

OLSSON ASSOCIATES
760 HORIZON DRIVE, SUITE 102
GRAND JUNCTION, CO 81506
TEL 970.263.7800
FAX 970.263.7456

FIGURE

3

N. Vega 2A Spill
Analytical Summary
Piceance Energy, LLC

Analyte	***SAMPLE1***	***SAMPLE2***	***COGCC LIMIT***
BTEX			
Benzene (µg/L)	8.3	75.3	5
Toluene (µg/L)	17.9	152	560 to 1,000
Ethylbenzene (µg/L)	U(0.25)	7.1	700
Total Xylenes (µg/L)	5.8	196	1,400 to 10,000
Chloride (mg/L)	1300	1340	< 1.25 x BG
Total Dissolved Solids (mg/L)	2620	2570	< 1.25 x BG
Sulfate (mg/L)	106	41.4	< 1.25 x BG
pH (su)	7.74	7.95	NA

Notes: U = analysis performed but not detected
mg/L = milligrams per liter
µg/L = micrograms per liter

Mountain States ACCUTEST LABORATORIES

04/02/14

Technical Report for

Olsson Associates

Laramie N. Vega 2A Spill

Accutest Job Number: D56328

Sampling Date: 03/26/14

Report to:

Olsson Associates
760 Horizon Drive Suite 102
Grand Junction, CO 81506
shall@olssonassociates.com

ATTN: Stuart Hall

Total number of pages in report: **27**

NELAP ACCREDITED TNI LABORATORY

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.

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)

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

Olsson Associates

Laramie N. Vega 2A Spill

Job No: D56328

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D56328-1	03/26/14	10:15	KR	03/27/14	AQ	Ground Water	WS1 (INSIDE LOCATION)
D56328-2	03/26/14	10:25	KR	03/27/14	AQ	Ground Water	WS2 (OUTSIDE LOCATION)

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Olsson Associates	**Job No**	D56328
Site:	Laramie N. Vega 2A Spill	**Report Date**	4/2/2014 4:07:40 PM

On 03/27/2014, 2 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 D56328 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:** V3V1745

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56328-2MS, D56373-2DUP were used as the QC samples indicated.

Matrix AQ **Batch ID:** V6V1352

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56306-1MS, D56306-1MSD were used as the QC samples indicated.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ **Batch ID:** GP12259

- 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) D56328-1MS, D56328-1MSD were used as the QC samples for the Chloride, Sulfate, Chloride analysis.

Wet Chemistry By Method SM 2540C-2011

Matrix AQ **Batch ID:** GN24151

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56293-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

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.

Summary of Hits

Job Number: D56328
Account: Olsson Associates
Project: Laramie N. Vega 2A Spill
Collected: 03/26/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D56328-1	**WS1 (INSIDE LOCATION)**					
Benzene		8.3	1.0	0.25	ug/l	SW846 8260B
Toluene		17.9	2.0	1.0	ug/l	SW846 8260B
Xylene (total)		5.8	3.0	2.0	ug/l	SW846 8260B
Chloride		1300	50		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved		2620	10		mg/l	SM 2540C-2011
Sulfate		106	2.5		mg/l	EPA 300.0/SW846 9056
pH		7.74			su	SM4500HB+ -2011/9040C
D56328-2	**WS2 (OUTSIDE LOCATION)**					
Benzene		75.3	1.0	0.25	ug/l	SW846 8260B
Toluene		152	10	5.0	ug/l	SW846 8260B
Ethylbenzene		7.1	2.0	0.25	ug/l	SW846 8260B
Xylene (total)		196	3.0	2.0	ug/l	SW846 8260B
Chloride		1340	50		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved		2570	10		mg/l	SM 2540C-2011
Sulfate		41.4	2.5		mg/l	EPA 300.0/SW846 9056
pH		7.95			su	SM4500HB+ -2011/9040C

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: WS1 (INSIDE LOCATION)
Lab Sample ID: D56328-1
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: Laramie N. Vega 2A Spill

Date Sampled: 03/26/14
Date Received: 03/27/14
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6V23974.D	1	03/27/14	BR	n/a	n/a	V6V1352
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	8.3	1.0	0.25	ug/l	
108-88-3	Toluene	17.9	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.25	ug/l	
1330-20-7	Xylene (total)	5.8	3.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	103%		62-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	91%		69-130%

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: WS1 (INSIDE LOCATION)
Lab Sample ID: D56328-1
Matrix: AQ - Ground Water
Project: Laramie N. Vega 2A Spill

Date Sampled: 03/26/14
Date Received: 03/27/14
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	1300	50	mg/l	100	03/31/14 13:53	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	2620	10	mg/l	1	03/31/14	BF	SM 2540C-2011
Sulfate	106	2.5	mg/l	5	03/31/14 11:51	SK	EPA 300.0/SW846 9056
pH	7.74		su	1	03/27/14 13:15	JB	SM4500HB+ -2011/9040C

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WS2 (OUTSIDE LOCATION)		
Lab Sample ID:	D56328-2	**Date Sampled:**	03/26/14
Matrix:	AQ - Ground Water	**Date Received:**	03/27/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Laramie N. Vega 2A Spill		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6V23975.D	1	03/27/14	BR	n/a	n/a	V6V1352
Run #2	3V29826.D	5	03/31/14	BR	n/a	n/a	V3V1745

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	75.3	1.0	0.25	ug/l	
108-88-3	Toluene	152 [a]	10	5.0	ug/l	
100-41-4	Ethylbenzene	7.1	2.0	0.25	ug/l	
1330-20-7	Xylene (total)	196	3.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	107%	96%	62-130%
2037-26-5	Toluene-D8	101%	97%	70-130%
460-00-4	4-Bromofluorobenzene	92%	93%	69-130%

(a) Result is from Run# 2

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: WS2 (OUTSIDE LOCATION)
Lab Sample ID: D56328-2
Matrix: AQ - Ground Water
Project: Laramie N. Vega 2A Spill

Date Sampled: 03/26/14
Date Received: 03/27/14
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	1340	50	mg/l	100	03/31/14 14:29	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	2570	10	mg/l	1	03/31/14	BF	SM 2540C-2011
Sulfate	41.4	2.5	mg/l	5	03/31/14 12:04	SK	EPA 300.0/SW846 9056
pH	7.95		su	1	03/27/14 13:15	JB	SM4500HB+ -2011/9040C

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST LABORATORIES

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL. 303-425-6021 877-737-4521
FAX 303-425-6021

PAGE 1 OF 1

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # D56328

Client / Reporting Information

Company Name: OLSSON ASSOCIATES
Street Address: 760 HORIZON DRIVE
City State Zip: GRAND JUNCTION CO 81501
Project Contact: STUART HALL E-mail: shall@ols.
Phone #: (970)263 7800 Fax #:
Sampler(s) Name(s): K. RICHARDS Phone #: 263-7800

Project Information

Project Name: LARAMIE N. VEGA 2A SPILL
Street:
City: Colbran Colorado
Project#:
Client PO#:
Project Manager: STUART HALL

Billing Information (if different from Report to)
Company Name:
Street Address:
City State Zip:
Attention: PO#

Requested Analysis (see TEST CODE sheet): BTEX, TDS, Chloride, Sulfate, PH

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfate	BTEX	TDS	Chloride	Sulfate	PH	LAB USE ONLY
	~~SW~~ WS1 (INSIDE LOCATION)		3-26-14	10:15	KR	GW	6										✓	✓	✓	✓	✓	01
	WS2 (OUTSIDE LOCATION)		3-26-14	10:25	KR	GW	6										✓	✓	✓	✓	✓	02

Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Water, SW - Surface Water, SO - Soil, SL- Sludge, SED-Sediment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB-Field Blank, EB- Equipment Blank, RB- Rinse Blank, TB-Trip Blank

LAB USE ONLY: 3/27/14 [initials]

Turnaround Time (Business days)
- [x] Std. 10 Business Days
- [ ] Std. 5 Business Days (By Contract only)
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information
- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] Commercial "B" +Narrative
- [ ] FULLT1 (Level 3+4)
- [ ] State Forms
- [ ] EDD Format
- [ ] PDF

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary

Comments / Special Instructions
~~VOA's not preserved~~ 3/27/14 VOA's are preserved

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1 K	Date Time: 3-26-14 1225	Received By: 1 Rifle Service Center	Relinquished By: 2 CO →	Date Time:	Received By: 2 [signature] 3-27-14 1305
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # ☑ Intact ☐ Not intact	Preserved where applicable ☑	On Ice ☑ Cooler Temp. 4.1

5.1

5

D56328: Chain of Custody
Page 1 of 1

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V1352-MB	6V23963.D	1	03/27/14	BR	n/a	n/a	V6V1352

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-1, D56328-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.25	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	2.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	100%	62-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	92%	69-130%

Method Blank Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1745-MB	3V29810.D	1	03/31/14	BR	n/a	n/a	V3V1745

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-2

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	96%	62-130%
2037-26-5	Toluene-D8	95%	70-130%
460-00-4	4-Bromofluorobenzene	94%	69-130%

Blank Spike Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V1352-BS	6V23962.D	1	03/27/14	BR	n/a	n/a	V6V1352

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-1, D56328-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	51.6	103	70-130
100-41-4	Ethylbenzene	50	52.7	105	70-130
108-88-3	Toluene	50	51.5	103	70-130
1330-20-7	Xylene (total)	150	158	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	62-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	100%	69-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1745-BS	3V29811.D	1	03/31/14	BR	n/a	n/a	V3V1745

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
108-88-3	Toluene	50	52.5	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	62-130%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	99%	69-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1745-BS	3V29812.D	1	03/31/14	BR	n/a	n/a	V3V1745

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	95%	62-130%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	96%	69-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56328-2MS	3V29827.D	5	03/31/14	BR	n/a	n/a	V3V1745
D56328-2	3V29826.D	5	03/31/14	BR	n/a	n/a	V3V1745

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-2

CAS No.	Compound	D56328-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
108-88-3	Toluene	152		250	411	104	60-130

CAS No.	Surrogate Recoveries	MS	D56328-2	Limits
17060-07-0	1,2-Dichloroethane-D4	94%	96%	62-130%
2037-26-5	Toluene-D8	96%	97%	70-130%
460-00-4	4-Bromofluorobenzene	97%	93%	69-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56328-2MS	3V29828.D	5	03/31/14	BR	n/a	n/a	V3V1745
D56328-2	3V29826.D	5	03/31/14	BR	n/a	n/a	V3V1745

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-2

CAS No.	Compound	D56328-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits

CAS No.	Surrogate Recoveries	MS	D56328-2	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	96%	62-130%
2037-26-5	Toluene-D8	96%	97%	70-130%
460-00-4	4-Bromofluorobenzene	96%	93%	69-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56306-1MS	6V23977.D	100	03/27/14	BR	n/a	n/a	V6V1352
D56306-1MSD	6V23978.D	100	03/28/14	BR	n/a	n/a	V6V1352
D56306-1	6V23976.D	100	03/27/14	BR	n/a	n/a	V6V1352

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-1, D56328-2

CAS No.	Compound	D56306-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1340		5000	6110	95	6250	98	2	62-130/30
100-41-4	Ethylbenzene	427		5000	5240	96	5520	102	5	63-130/30
108-88-3	Toluene	10200		5000	15200	100	16100	118	6	60-130/30
1330-20-7	Xylene (total)	4300		15000	19600	102	20100	105	3	67-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D56306-1	Limits
17060-07-0	1,2-Dichloroethane-D4	106%	103%	101%	62-130%
2037-26-5	Toluene-D8	99%	102%	101%	70-130%
460-00-4	4-Bromofluorobenzene	96%	97%	91%	69-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: D56328
Account: CORCCOGJ Olsson Associates
Project: Laramie N. Vega 2A Spill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56373-2DUP	3V29818.D	5	03/31/14	BR	n/a	n/a	V3V1745
D56373-2	3V29816.D	1	03/31/14	BR	n/a	n/a	V3V1745
D56373-2	3V29817.D	5	03/31/14	BR	n/a	n/a	V3V1745

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56328-2

CAS No.	Compound	D56373-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
108-88-3	Toluene	ND		ND		nc	30

CAS No.	Surrogate Recoveries	DUP	D56373-2	D56373-2	Limits
17060-07-0	1,2-Dichloroethane-D4	96%	98%	98%	62-130%
2037-26-5	Toluene-D8	94%	96%	95%	70-130%
460-00-4	4-Bromofluorobenzene	94%	93%	92%	69-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

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: D56328
Account: CORCCOGJ - Olsson Associates
Project: Laramie N. Vega 2A Spill

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP12259/GN24156	0.50	0.0	mg/l	5	4.92	98.4	90-110%
Solids, Total Dissolved	GN24151	10	0.0	mg/l	400	396	99.0	90-110%
Sulfate	GP12259/GN24156	0.50	0.0	mg/l	5	5.16	103.2	90-110%
pH	GN24126			su	8.00	8.01	99.8	99.3-100.7%

Associated Samples:
Batch GN24126: D56328-1, D56328-2
Batch GN24151: D56328-1, D56328-2
Batch GP12259: D56328-1, D56328-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D56328
Account: CORCCOGJ - Olsson Associates
Project: Laramie N. Vega 2A Spill

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN24151	D56293-1	mg/l	1700	1710	0.6	0-20%

Associated Samples:
Batch GN24151: D56328-1, D56328-2
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D56328
Account: CORCCOGJ - Olsson Associates
Project: Laramie N. Vega 2A Spill

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP12259/GN24156	D56328-1	mg/l	1300	500	1850	110.0	80-120%
Chloride	GP12259/GN24156	D56328-1	mg/l	-940	500	1850	110.0	80-120%
Sulfate	GP12259/GN24156	D56328-1	mg/l	112	500	627	104.2	80-120%
Sulfate	GP12259/GN24156	D56328-1	mg/l	106	500	627	104.2	80-120%

Associated Samples:
Batch GP12259: D56328-1, D56328-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D56328
Account: CORCCOGJ - Olsson Associates
Project: Laramie N. Vega 2A Spill

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP12259/GN24156	D56328-1	mg/l	1300	500	1850	0.0	20%
Chloride	GP12259/GN24156	D56328-1	mg/l	-940	500	1850	0.0	20%
Sulfate	GP12259/GN24156	D56328-1	mg/l	112	500	624	0.5	20%
Sulfate	GP12259/GN24156	D56328-1	mg/l	106	500	624	0.5	20%

Associated Samples:
Batch GP12259: D56328-1, D56328-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits