



## INFORMATION ONLY

June 26, 2016

#5B23439-BG6

NMOCD District I  
1625 N French  
Hobbs, NM

SUBJECT: UPDATE REPORT FOR INCIDENT 1RP-3771 RED HILLS WEST SWD #001, LEA COUNTY, NEW MEXICO

Dear Ms. Jones:

Souder, Miller & Associates (SMA) responded at the request of Mewbourne Oil Company (MOC) to assess and reseed the affected soils associated with the Red Hills West SWD #001 well location. The release was initially reported to NMOCD by Mewbourne Oil Company on July 27, 2015 and was a result of damage caused by a lightning strike. The table below summarizes the results of the assessment, reseeding, and revegetation activities follow in the attached report.

Please feel free to contact either of us.

Submitted by:

SOUDER, MILLER & ASSOCIATES

Austin Weyant  
Project Scientist

Reviewed by:

Cynthia Gray, CHMM  
Senior Scientist

# UPDATED REPORT FOR REVEGETATION OF INCIDENT 1RP-3771

MEWBOURNE OIL COMPANY  
RED HILLS WEST SWD #001  
API# 30-025-40162  
SECTION 16, T26S R32E, NMPM  
LEA COUNTY, NM



Prepared for:  
Zach Thomas  
Mewbourne Oil Company  
P.O. Box 7698  
Tyler, TX 75711

Prepared by:  
Souder, Miller & Associates  
201 S. Halagueno  
Carlsbad, NM 88221  
575-689-7040



October 26, 2015  
SMA Reference  
5B23439 BG6

## Table of Contents

1.0	Introduction.....	4
2.0	Assessment and Results.....	4
3.0	Work Summary .....	4
4.0	Conclusions and Recommendation.....	5

### Figures:

Figure 1: Vicinity Map

Figure 2: Detailed Site and Sample Map

### Tables:

Table 3: Summary of Laboratory Analyses

### Appendices:

Appendix A: Laboratory Analytical Reports

## **1.0 Introduction**

On behalf of Mewbourne Oil Company (MOC), Souder, Miller & Associates (SMA) has prepared this report to describe the soil assessment, initial reseeding, and mitigation of a release associated with the Red Hills West SWD #001 release site. The site is located in Section 16, T 26S, R 32E NMPM, Lea County, New Mexico, on land owned by the State of New Mexico. Figure 1 illustrates the vicinity and location of the site.

## **2.0 Assessment and Results**

The release site is located approximately 15 miles northeast of the Pecos River, in an area owned by the State with an elevation of approximately 3,200 feet above sea level. After evaluation of the site using aerial photography and topographic maps, and New Mexico Office of the State Engineer's (NMOSE) records, depth to groundwater is estimated to be greater than 100 feet below ground surface (bgs).

SMA collected both discrete and composite soil samples across the affected location for contaminate and soil fertility data.

## **3.0 Work Summary**

On May 17<sup>th</sup> after receiving 811 clearances, Souder Miller & Associates and there sub-contractors began sampling and seeding operations. SMA Field personnel assessed the release area onsite with a gas powered auger, Photo Ionization Detector (PID), and a mobile chlorides titration kit. The potentially affected area was found contain no detectable hydrocarbons or elevated (higher than background) levels of chlorides.

The location was then amended with weed free hay to the recommended 2tons/acre using a 60hp tractor and 6inch disks. After hay amendment for seed bed preparation pre-emergent fertilizer was added to replace the soils low iron, potassium, and nitrogen. Then the location was seeded with the recommended BLM seed mix using a wildland seed drill and trash blade.

The site delineation potholes were carried to depths of 3 feet below surface grade (bgs). all samples were found to exhibit only background levels of all contaminants of concern. Specific sample locations for all samples are depicted on Figure 2 (Sample Location Map) along with sampling details. Field screening results are noted in Table 3 in the appendices along with the summary of laboratory analytical results. Samples were collected and processed by SMA field personnel according to NMOCD soil sampling procedures.

Because the field screening did not indicate the presence of petroleum, the samples were sent under chain-of-custody protocols to Cardinal Analysis Laboratory for analysis for Total Chlorides using EPA Method 300.0.

#### 4.0 Conclusions and Recommendations

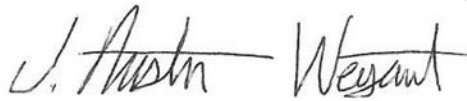
All the field samples collected on May 17th 2016 indicated that the salt plume has not moved in the soil profile and that capillary suction has not returned it to the root zone. The laboratory confirmed field data Figures 2. All raw data is located (Appendix A).

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-7040 or Cindy Gray at 505-325-7535.

Submitted by:

Reviewed by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant  
Project Scientist



Cynthia Gray, CHMM  
Senior Scientist

**Figures:**

Figure 1: Vicinity Map

Figure 2: Detailed Site and Sample Map

**Tables:**

Table 1: Summary of Field Analysis

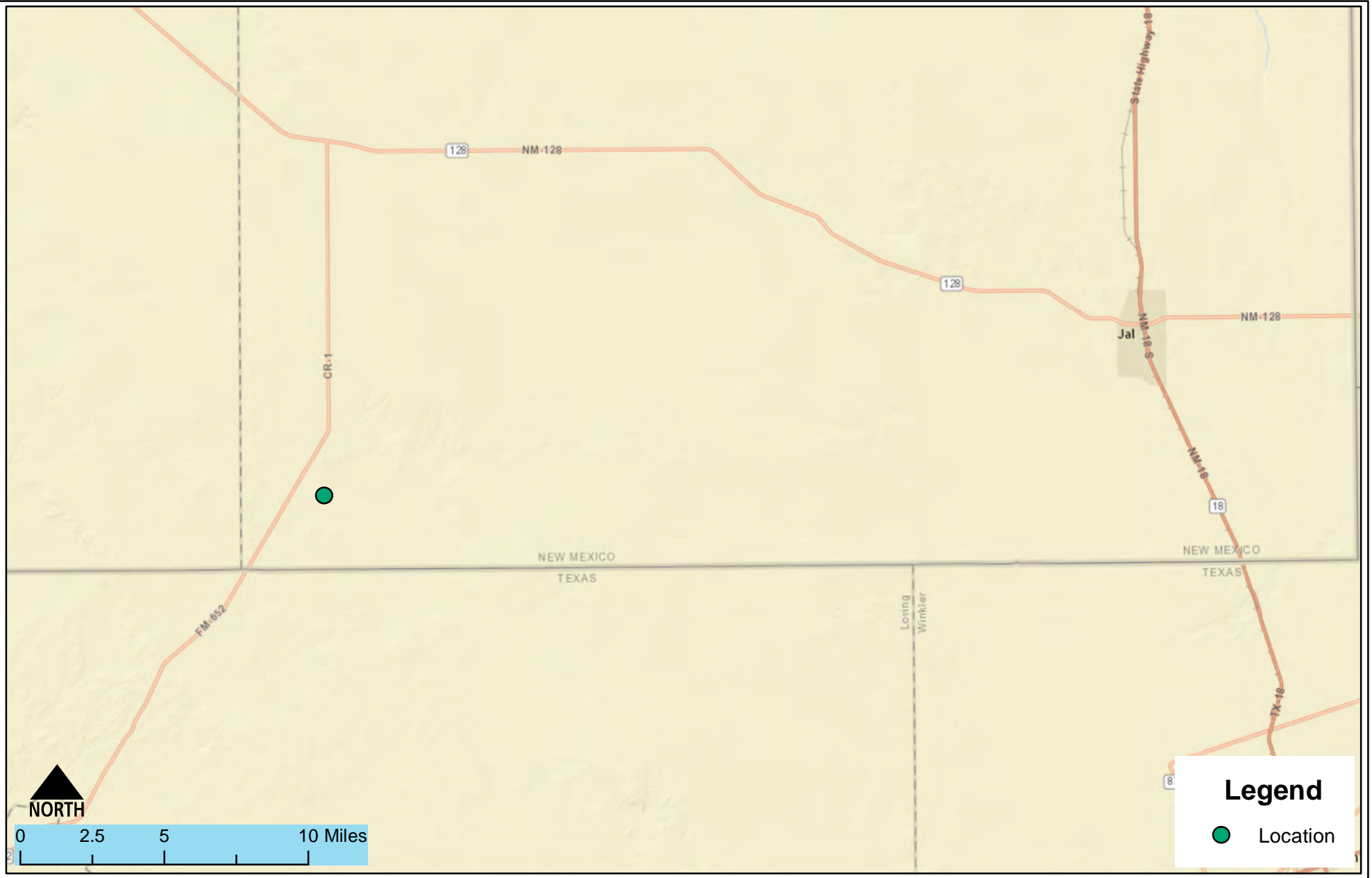
Table 2: Summary of Laboratory Analyses

**Appendices:**

Appendix A: Laboratory Analytical Reports

Appendix B: Field Notes

# FIGURE 1 VICINITY MAP



**Legend**

- Location

Vicinity Map  
 Mewbourne-Red Hills West SWD  
 Jal, New Mexico

Figure 1

Date Saved: 10/20/2015	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	<u>Lucas Middleton</u>
Checked	_____
Approved	_____

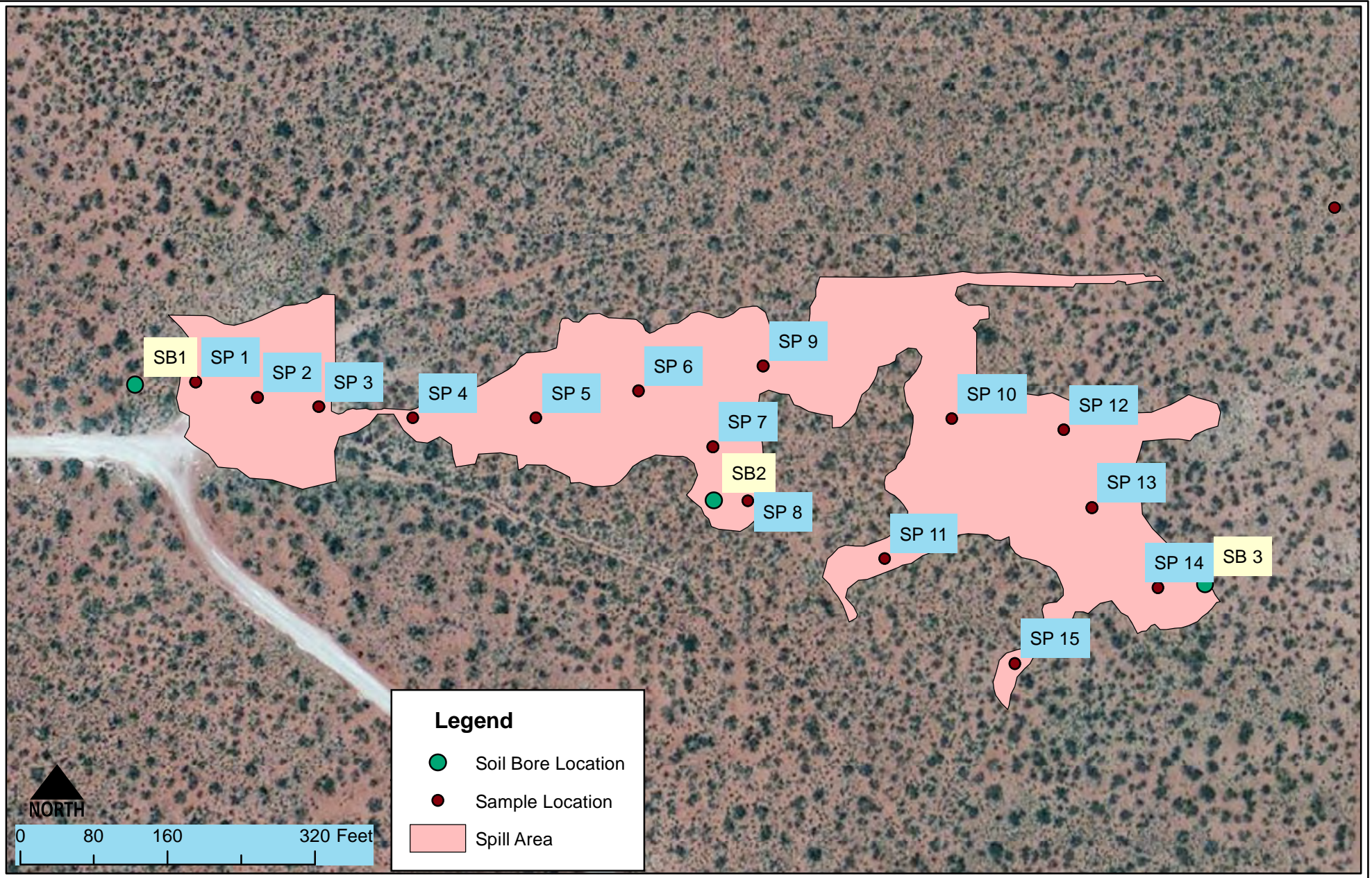


201 South Halaguena Street  
 Carlsbad, New Mexico 88221  
 (575) 689-7040  
 www.soudermiller.com  
 Serving the Southwest & Rocky Mountains



# FIGURE 2

## DETAILED SITE AND SAMPLE MAP



Detailed Site and Sample Map  
 Mewbourne-Red Hills West SWD  
 Jal, New Mexico

Figure 2

Date Saved: 10/20/2015	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	<u>Lucas Middleton</u>
Checked	_____
Approved	_____



201 South Halaguena Street  
 Carlsbad, New Mexico 88221  
 (575) 689-7040  
 www.soudermiller.com  
 Serving the Southwest & Rocky Mountains

# TABLE 1

## SUMMARY OF FIELD DATA

Table 1: Summary of Field Screening Results

Red Hills West SWD  
 Produced Water  
 5/18/16

<b>FIELD SCREENING RESULTS SUMMARY</b>					
Date	Time	Field Screening Reference	Sample Depth (Feet BGS)	Chlorides Results	Lab Sample Collected Y/N
5/28/2015	10:00	C1	0.5	ND	Y
5/28/2015	10:00	C2	0.5	ND	Y
5/28/2015	10:00	C3	0.5	ND	Y
5/28/2015	10:00	C4	0.5	ND	Y
5/28/2015	10:00	C5	0.5	ND	Y
5/28/2015	10:00	C6	0.5	ND	Y
5/28/2015	10:00	C7	3	ND	N
5/28/2015	10:00	C8	3	ND	N
5/28/2015	10:00	C9	3	ND	N
5/28/2015	10:00	C10	3	ND	N



Table 1b: Summary of Field Screening Results

<b>FIELD SCREENING RESULTS SUMMARY</b>					
Date	Time	Field Screening Reference	Sample Depth (Feet BGS)	PID Reading	Lab Sample Collected Y/N
5/28/2015	10:00	C1	0.5	ND	Y
5/28/2015	10:00	C2	0.5	ND	Y
5/28/2015	10:00	C3	0.5	ND	Y
5/28/2015	10:00	C4	0.5	ND	Y
5/28/2015	10:00	C5	0.5	ND	Y
5/28/2015	10:00	C6	0.5	ND	Y
5/28/2015	10:00	C7	3	ND	N
5/28/2015	10:00	C8	3	ND	N
5/28/2015	10:00	C9	3	ND	N
5/28/2015	10:00	C10	3	ND	N



# TABLE 2

## SUMMARY OF LAB DATA

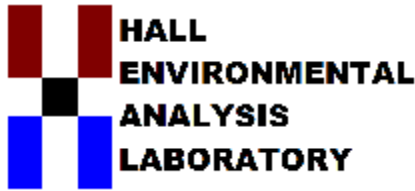
**Table 3: Summary of Laboratory Analyses**

Analytical Report- 1605A70	Sample Number on Figure 2 Map	Sample Date	Depth	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	Cl- mg/Kg
1605A70-001	C1	5/18/2016	.5'	N/A	N/A	N/A	N/A	BDL
1605A70-002	C2	5/18/2016	.5'	N/A	N/A	N/A	N/A	BDL
1605A70-003	C3	5/18/2016	.5'	N/A	N/A	N/A	N/A	BDL
1605A70-004	C4	5/18/2016	.5'	N/A	N/A	N/A	N/A	BDL
1605A70-005	C5	5/18/2016	.5'	N/A	N/A	N/A	N/A	BDL
1605A70-006	C6	5/18/2016	.5'	N/A	N/A	N/A	N/A	BDL

# APPENDIX A

## LABORATORY ANALYTICAL REPORTS





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 31, 2016

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Red Hill West

OrderNo.: 1605A70

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 6 sample(s) on 5/24/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**Lab Order: **1605A70**Date Reported: **5/31/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates  
**Project:** Red Hill West**Lab Order:** 1605A70**Lab ID:** 1605A70-001 **Collection Date:** 5/18/2016 11:00:00 AM**Client Sample ID:** C1 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	-----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**Analyst: **LGT**

Chloride	ND	30		mg/Kg	20	5/26/2016 1:53:41 PM	25539
----------	----	----	--	-------	----	----------------------	-------

**Lab ID:** 1605A70-002 **Collection Date:** 5/18/2016 11:00:00 AM**Client Sample ID:** C2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	-----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**Analyst: **LGT**

Chloride	ND	30		mg/Kg	20	5/26/2016 2:30:55 PM	25539
----------	----	----	--	-------	----	----------------------	-------

**Lab ID:** 1605A70-003 **Collection Date:** 5/18/2016 11:00:00 AM**Client Sample ID:** C3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	-----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**Analyst: **LGT**

Chloride	ND	30		mg/Kg	20	5/26/2016 2:43:20 PM	25539
----------	----	----	--	-------	----	----------------------	-------

**Lab ID:** 1605A70-004 **Collection Date:** 5/18/2016 11:00:00 AM**Client Sample ID:** C4 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	-----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**Analyst: **LGT**

Chloride	ND	30		mg/Kg	20	5/26/2016 2:55:45 PM	25539
----------	----	----	--	-------	----	----------------------	-------

**Lab ID:** 1605A70-005 **Collection Date:** 5/18/2016 11:00:00 AM**Client Sample ID:** C5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	-----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**Analyst: **LGT**

Chloride	ND	30		mg/Kg	20	5/26/2016 3:08:09 PM	25539
----------	----	----	--	-------	----	----------------------	-------

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

**Analytical Report**

Lab Order: **1605A70**

Date Reported: **5/31/2016**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Souder, Miller & Associates  
**Project:** Red Hill West

**Lab Order:** 1605A70

**Lab ID:** 1605A70-006

**Collection Date:** 5/18/2016 11:00:00 AM

**Client Sample ID:** C6

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	-----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**

Analyst: **LGT**

Chloride	ND	30		mg/Kg	20	5/26/2016 3:20:34 PM	25539
----------	----	----	--	-------	----	----------------------	-------

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1605A70

31-May-16

**Client:** Souder, Miller & Associates

**Project:** Red Hill West

Sample ID	<b>MB-25539</b>	SampType:	<b>mblk</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>25539</b>	RunNo:	<b>34533</b>					
Prep Date:	<b>5/26/2016</b>	Analysis Date:	<b>5/26/2016</b>	SeqNo:	<b>1065112</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-25539</b>	SampType:	<b>lcs</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>25539</b>	RunNo:	<b>34533</b>					
Prep Date:	<b>5/26/2016</b>	Analysis Date:	<b>5/26/2016</b>	SeqNo:	<b>1065113</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

**Sample Log-In Check List**

Client Name: **SMA-CARLSBAD** Work Order Number: **1605A70** RcptNo: 1

Received by/date: *Ja* **05/24/16**

Logged By: **Ashley Gallegos** **5/24/2016 9:40:00 AM** *Ag*

Completed By: **Ashley Gallegos** **5/24/2016 10:55:22 AM** *Ag*

Reviewed By: *Ja* **05/24/16**

**Chain of Custody**

- 1. Custody seals intact on sample bottles? Yes  No  Not Present
- 2. Is Chain of Custody complete? Yes  No  Not Present
- 3. How was the sample delivered? Courier

**Log In**

- 4. Was an attempt made to cool the samples? Yes  No  NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA
- 6. Sample(s) in proper container(s)? Yes  No
- 7. Sufficient sample volume for indicated test(s)? Yes  No
- 8. Are samples (except VOA and ONG) properly preserved? Yes  No
- 9. Was preservative added to bottles? Yes  No  NA
- 10. VOA vials have zero headspace? Yes  No  No VOA Vials
- 11. Were any sample containers received broken? Yes  No
- 12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes  No  # of preserved bottles checked for pH: (**<2 or >12 unless noted**)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No  Adjusted?
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes  No  Checked by:

**Special Handling (if applicable)**

- 16. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
 By Whom: \_\_\_\_\_ Via:  eMail  Phone  Fax  In Person  
 Regarding: \_\_\_\_\_  
 Client Instructions: \_\_\_\_\_

17. Additional remarks:

**18. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			



# APPENIDX B: FIELD NOTES





