

HOBBS OCD

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

JUN 11 2012

Form C-14  
Revised August 8, 2011

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office  
in accordance with 19.15.2 NMAC

RECEIVED

## Release Notification and Corrective Action

## OPERATOR

X ☐ Initial Report ☐ Final Report

Name of Company	Cimarex Energy	Contact	Mark Bishop
Address	2020 West Bender	Telephone No.	575-602-1002
Facility Name	Southeast Lusk 33 Fed #2H	Facility Type	Producing well
Surface Owner	Mineral Owner	BLM	API No. 30-0: 5-40255

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	33	19S	32E	530	North	737	East	Lea

Latitude N 32° 37' 21.59" Longitude W 103° 45' 53.92"

## NATURE OF RELEASE

Type of Release	Crude oil	Volume of Release	20bbl	Volume Recovered	5bbl
Source of Release	Flowline	Date and Hour of Occurrence	6/11/12	Date and Hour of Discovery	6/11/12
Was Immediate Notice Given?	X <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	BLM		
By Whom?	Mark Bishop	Date and Hour			
Was a Watercourse Reached?	<input type="checkbox"/> Yes X <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
GW @ 400'					

## Describe Cause of Problem and Remedial Action Taken.\*

3" poly flowline failed releasing crude oil on edge of neighboring oil company location and sprayed into pasture. Pooled oil on edge of location some saturation in deep sand and light over spray on soil and vegetation further east. Contacted BLM and Safety and Environmental Services to delineate impact to environment and recommend remediation course of action.

## Describe Area Affected and Cleanup Action Taken.\*

Recovered standing oil with vacuum truck. Removed contaminated calciche from well location. Instructed by BLM to cease clean-up in pasture until the land could be evaluated from previous archeological documents.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Mark Bishop</i>		OIL CONSERVATION DIVISION	
Printed Name: Mark Bishop		Approved by Environmental Specialist: <i>Geoff Jakins</i>	
Title: Production Foreman		Approval Date: 6/11/12	Expiration Date: 8/13/12
E-mail Address: Mbishop@Cimarex.com		Conditions of Approval: SUBMIT FINAL	Attached <input type="checkbox"/>
Date: 6-11-12	Phone: 575-602-1002	C-141 BY 8/13/12	IRP-7-12-2837

\* Attach Additional Sheets If Necessary

**HOBBS OCD**

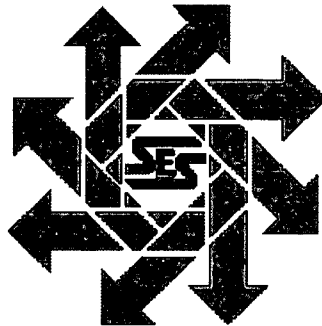
**JUN 29 2012**

**RECEIVED**

**Cimarex Energy Company  
Southeast Lusk 33 Federal #2  
Section 33, Township 19S, Range 32E  
Lea County, New Mexico**

**Work Plan**

**June 25, 2012**



**Prepared for:**

**Cimarex Energy Company  
600 North Mariefeld, Suite 600  
Midland, Texas 79701**

**By:**

**Safety & Environmental Solutions, Inc.  
703 East Clinton Street  
Hobbs, New Mexico 88240  
(575) 397-0510**

*Comments received  
Jeff Lebrun  
Env. Specialist  
NMOC - DIST 1  
06/29/12*

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## I. Company Contacts

Company Representative	Company	Telephone	E-mail
Mark Bishop	Cimarex Energy Co.	575-602-1002	mbishop@cimarex.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

## II. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged by Cimarex Energy Company to perform a site assessment at the Southeast Lusk 33 Federal #2H. This location is the site of an active well and battery. The location is located in Section 33, Township 19 South, and Range 32 East. According to the C-141 dated June 11, 20-12, a 3" poly flowline releasing crude oil on edge of neighboring oil company location and sprayed into pasture. Pooled oil on edge of location some saturation in deep sand and light over spray on soil and vegetation further east.

## III. Surface and Ground Water

According the database provided by the United States Geological Survey online database, the closest depth of water in this area located 1.1 miles southeast in section 34 of Township 19 South, Range 32 East. The depth of water is 246.19' February 1996.

## IV. Characterization

The target cleanup levels are reached by the application of the "Unlined Surface Impoundment Closure Guidelines New Mexico Oil Conservation Division (NMOCD) – February, 1993 to this site is 5000 parts per million (ppm) Total Petroleum Hydrocarbons (TPH). Application of the New Mexico Oil Conservation Division's ranking criteria for contaminated soils at this site is presented below:

<b>Depth to Ground Water:</b>			
(Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	20 points	
	50 feet to 99 feet	10 points	
	>100 feet	0 points	X
<b>Wellhead Protection Area:</b>			
(Less than 200 feet from a private domestic water source; or less than 1000 feet from all other water sources)	Yes	20 points	
	No	0 points	X
<b>Distance to Surface Water:</b>			
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	20 points	
	200 feet to 1000 feet	10 points	
	>1000 feet	0 points	X
<b>RANKING SCORE (TOTAL POINTS)</b>			<b>0</b>

## V. Work Performed

On June 12, 2012, Mr. Bob Allen SESI representative was onsite to assess release area. The location area was mapped utilizing a Trimble Geo Explorer XM handheld device.

Samples were collected and properly preserved and transported under chain of custody to Cardinal Labs of Hobbs, New Mexico. The samples were analyzed for Chlorides (EPA Method 4500Cl-B).

The results of the analysis are as follows:

Lab ID	Sample ID	Cl (mg/kg)
Analysis Date:		06/18/12
H201325-01	Chloride Sample Point 1	6,480
H201325-02	Chloride Sample Point 2	352
H201325-03	Chloride Sample Point 3	80

On June 14, 2012, Mr. Bob Allen SESI representative was onsite to delineate the release area. Three test trenches were installed ranging from depths of 1-4 ft bgs.

Samples were collected and properly preserved and transported under chain of custody to Cardinal Labs of Hobbs, New Mexico. The samples were analyzed for Chlorides (EPA Method 4500Cl-B), Total Petroleum Hydrocarbons (TPH)(EPA Method 8015M), and Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)(EPA Method 8021B).

The results of the analysis are as follows:

Lab ID	Sample ID	Cl- (mg/kg)	TPH (mg/kg)		Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)
			GRO C <sub>6</sub> -C <sub>10</sub>	DRO >C <sub>10</sub> -C <sub>28</sub>				
Analysis Date:		06/19/12	06/19/12	06/19/12	06/21/12	06/21/12	06/21/12	06/21/12
H201371-03	TT-1, 2'	976	106	681	<0.050	0.830	1.92	6.08
H201371-04	TT-1, 4'	80.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150
H201371-01	TT-2, 2'	3,760	1,430	13,100	0.598	11.5	17.3	52.7
H201371-02	TT-2, 3'	64.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150
H201371-05	TT-3, 1'	<16.0	<10.0	14.7	<0.050	<0.050	<0.050	<0.150

## VI. Action Plan

The results of the analysis indicate that the only distribution of chloride and TPH contamination is located in the immediate release area. The extent of contamination is restricted to the top 2 feet of topsoil/sand above the caliche layer.

It is requested that entire area of contamination will be excavated to a depth of 2' below ground surface. Samples will be transported to Cardinal Laboratories of Hobbs, New Mexico to be analyzed for Chlorides (EPA Method 4500-Cl B). Clean topsoil will then be used as backfill and contoured to grade.

The spray area away from the immediate release area shows minor levels of contamination only on the surface and 0" to 6" BGS. It is recommended that this area be mowed and/or disced in place.

Once all remediation is completed the area will be reseeded in the spring as per landowner's specifications.

After completion of the location a report will be filed with the New Mexico Oil Conservation Division (NMOCD).

## **VII. Figures and Appendices**

Figure 1 – Vicinity Map

Figure 2 – Site Map

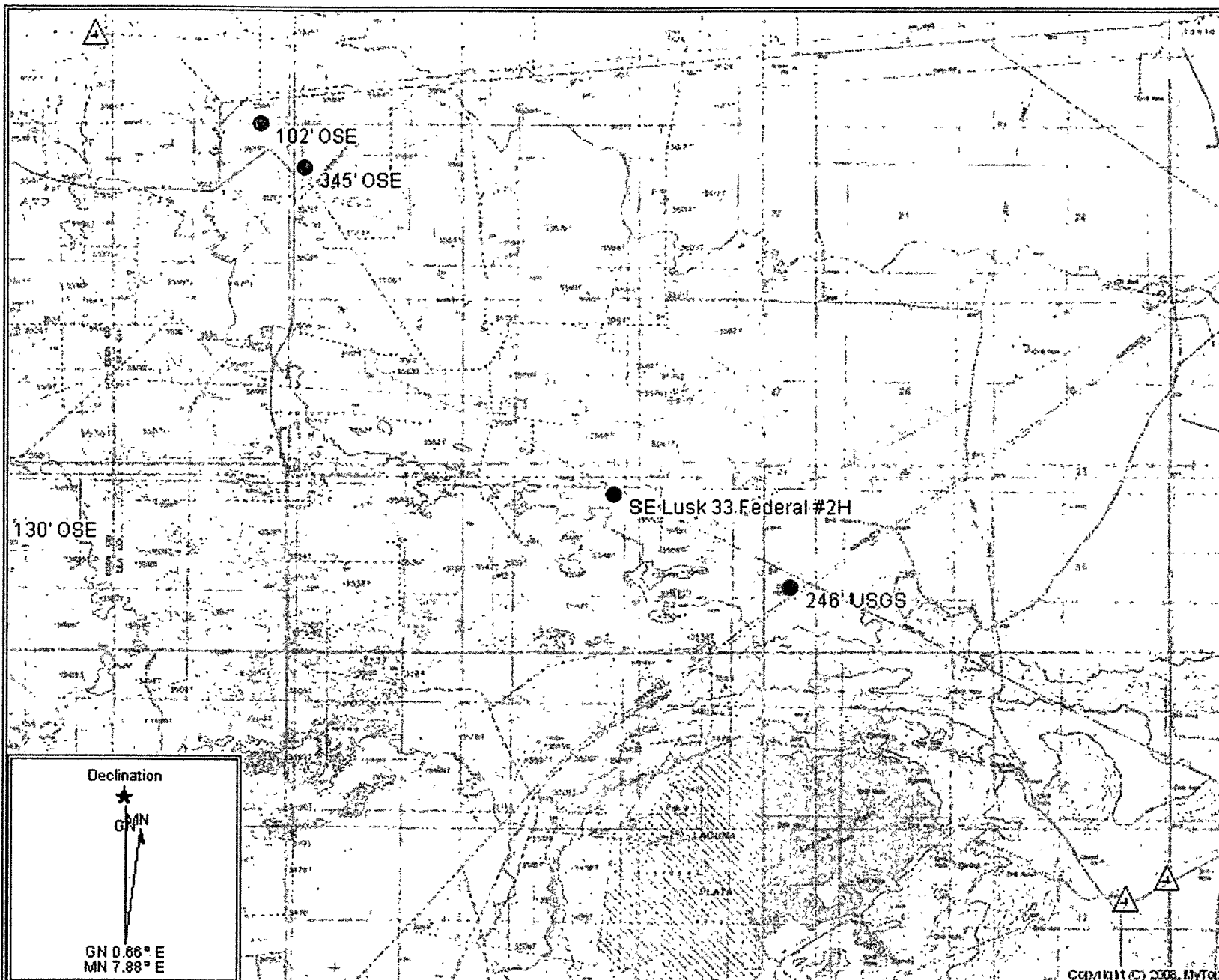
Appendix A – Analytical Results

Appendix B – C-141

# **Figure 1**

## **Vicinity Map**

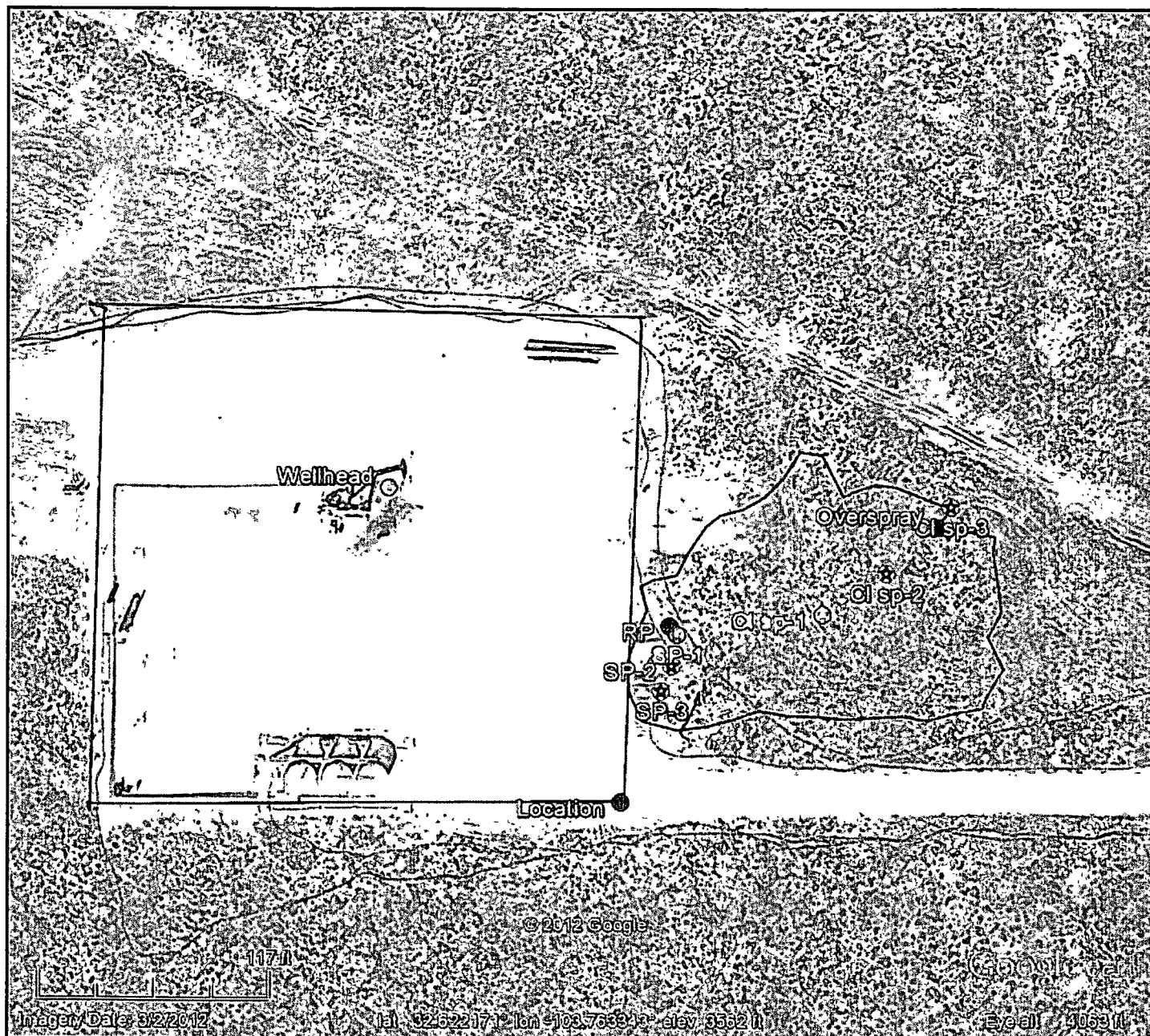
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## **Figure 2**

### **Site Map**



## **Appendix A**

### **Analytical Results**

## **Appendix B**

### **C-141**

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1625 N. French Dr., Hobbs, NM 88240  
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1000 Rio Brazos Road, Aztec, NM 87410  
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State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company	Cimarex Energy	Contact	Mark Bishop
Address	2020 West Bender	Telephone No.	575-602-1002
Facility Name	Southeast Lusk 33 Fed #2H	Facility Type	Producing well
Surface Owner	Mineral Owner	BLM	API No. 30-025-40255

**LOCATION OF RELEASE**

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Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	BLM		
By Whom?	Mark Bishop	Date and Hour			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken *					
3" poly flowline failed releasing crude oil on edge of neighboring oil company location and sprayed into pasture. Pooled oil on edge of location some saturation in deep sand and light over spray on soil and vegetation further east. Contacted BLM and Safety and Environmental Services to delineate impact to environment and recommend remediation course of action.					
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Recovered standing oil with vacuum truck. Removed contaminated caliche from well location. Instructed by BLM to cease clean-up in pasture until the land could be evaluated from previous archeological documents.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Signature.		<b>OIL CONSERVATION DIVISION</b>			
Printed Name: Mark Bishop		Approved by Environmental Specialist:			
Title: Production Foreman		Approval Date:		Expiration Date:	
E-mail Address: Mbishop@Cimarex.com		Conditions of Approval:		Attached <input type="checkbox"/>	
Date: 6-11-12		Phone: 575-602-1002			

\* Attach Additional Sheets If Necessary

June 18, 2012

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: CIM-12-009

Enclosed are the results of analyses for samples received by the laboratory on 06/13/12 8:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

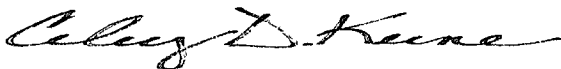
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 06/13/2012  
 Reported: 06/18/2012  
 Project Name: CIM-12-009  
 Project Number: SE LUSK FED 33-2  
 Project Location: MALJAMAR, NM

Sampling Date: 06/12/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: CHLORIDE SAMPLE #1 (H201325-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6480	16.0	06/18/2012	ND	432	108	400	3.77	

**Sample ID: CHLORIDE SAMPLE #2 (H201325-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	06/18/2012	ND	432	108	400	3.77	

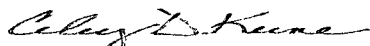
**Sample ID: CHLORIDE SAMPLE #3 (H201325-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/18/2012	ND	432	108	400	3.77	

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celest D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

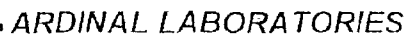
PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager





(505) 393-2326 Fax (505) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page of

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

Page 4 of 4

June 22, 2012

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: SE LUSK FED 33-2

Enclosed are the results of analyses for samples received by the laboratory on 06/15/12 16:13.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

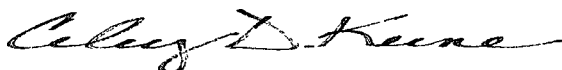
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Method EPA 524.2	Total Trihalomethanes (TTHM)
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Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

Safety & Environmental Solutions  
Bob Allen  
703 East Clinton  
Hobbs NM, 88240  
Fax To: (575) 393-4388

Received: 06/15/2012  
Reported: 06/22/2012  
Project Name: SE LUSK FED 33-2  
Project Number: NONE GIVEN  
Project Location: CIMAREX

Sampling Date: 06/14/2012  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: TEST TRENCH - 2, 2' (H201371-01)**

BTEX 8021B		mg/kg		Analyzed By: ZZZ				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.598</b>	0.500	06/21/2012	ND	1.90	95.1	2.00	5.97	
<b>Toluene*</b>	<b>11.5</b>	0.500	06/21/2012	ND	1.98	99.2	2.00	9.57	
<b>Ethylbenzene*</b>	<b>17.3</b>	0.500	06/21/2012	ND	2.08	104	2.00	13.6	
<b>Total Xylenes*</b>	<b>52.7</b>	1.50	06/21/2012	ND	6.46	108	6.00	15.1	

Surrogate. 4-Bromofluorobenzene (PIL) 167 % 89 4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>3760</b>	16.0	06/19/2012	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>1430</b>	50.0	06/19/2012	ND	180	90.1	200	2.33	
<b>DRO &gt;C10-C28</b>	<b>13100</b>	50.0	06/19/2012	ND	185	92.7	200	2.72	

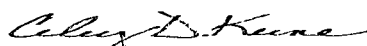
Surrogate. 1-Chlorooctane 274 % 65.2-140

Surrogate. 1-Chlorooctadecane 88.1 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

 Received: 06/15/2012  
 Reported: 06/22/2012  
 Project Name: SE LUSK FED 33-2  
 Project Number: NONE GIVEN  
 Project Location: CIMAREX

 Sampling Date: 06/14/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: TEST TRENCH - 2, 3' (H201371-02)**

BTEX 8021B			mg/kg Analyzed By: ZZZ							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2012	ND	1.90	95.1	2.00	5.97		
Toluene*	<0.050	0.050	06/21/2012	ND	1.98	99.2	2.00	9.57		
Ethylbenzene*	<0.050	0.050	06/21/2012	ND	2.08	104	2.00	13.6		
Total Xylenes*	<0.150	0.150	06/21/2012	ND	6.46	108	6.00	15.1		

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 89 4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/19/2012	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/19/2012	ND	180	90.1	200	2.33	
DRO >C10-C28	<10.0	10.0	06/19/2012	ND	185	92.7	200	2.72	

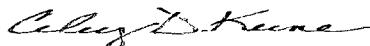
Surrogate: 1-Chlorooctane 98.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 117 % 63 6-154

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	06/15/2012	Sampling Date:	06/14/2012
Reported:	06/22/2012	Sampling Type:	Soil
Project Name:	SE LUSK FED 33-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	CIMAREX		

**Sample ID: TEST TRENCH - 1, 2' (H201371-03)**

BTX 8021B		mg/kg		Analyzed By: ZZZ				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2012	ND	1.90	95.1	2.00	5.97	
Toluene*	0.830	0.050	06/21/2012	ND	1.98	99.2	2.00	9.57	
Ethylbenzene*	1.92	0.050	06/21/2012	ND	2.08	104	2.00	13.6	
Total Xylenes*	6.08	0.150	06/21/2012	ND	6.46	108	6.00	15.1	

Surrogate: 4-Bromofluorobenzene (PIE) 159 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	976	16.0	06/19/2012	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	106	10.0	06/19/2012	ND	180	90.1	200	2.33	
DRO >C10-C28	681	10.0	06/19/2012	ND	185	92.7	200	2.72	

Surrogate: 1-Chlorooctane 106 % 65.2-140

Surrogate: 1-Chlorooctadecane 119 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

 Received: 06/15/2012  
 Reported: 06/22/2012  
 Project Name: SE LUSK FED 33-2  
 Project Number: NONE GIVEN  
 Project Location: CIMAREX

 Sampling Date: 06/14/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: TEST TRENCH - 1, 4' (H201371-04)**

BTEX 8021B			mg/kg		Analyzed By: ZZZ				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2012	ND	1.90	95.1	2.00	5.97	
Toluene*	<0.050	0.050	06/21/2012	ND	1.98	99.2	2.00	9.57	
Ethylbenzene*	<0.050	0.050	06/21/2012	ND	2.08	104	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/21/2012	ND	6.46	108	6.00	15.1	

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 89.4-126

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/19/2012	ND	432	108	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/19/2012	ND	180	90.1	200	2.33	
DRO >C10-C28	<10.0	10.0	06/19/2012	ND	185	92.7	200	2.72	

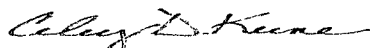
Surrogate: 1-Chlorooctane 91.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	06/15/2012	Sampling Date:	06/14/2012
Reported:	06/22/2012	Sampling Type:	Soil
Project Name:	SE LUSK FED 33-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	CIMAREX		

**Sample ID: TEST TRENCH - 3, 1' (H201371-05)**

BTEX 8021B		mg/kg		Analyzed By: ZZ				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2012	ND	1.90	95.1	2.00	5.97	
Toluene*	<0.050	0.050	06/21/2012	ND	1.98	99.2	2.00	9.57	
Ethylbenzene*	<0.050	0.050	06/21/2012	ND	2.08	104	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/21/2012	ND	6.46	108	6.00	15.1	

Surrogate: 4-Bromofluorobenzene (PIE) 108 % 89 4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/19/2012	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/19/2012	ND	180	90.1	200	2.33	
DRO >C10-C28	14.7	10.0	06/19/2012	ND	185	92.7	200	2.72	

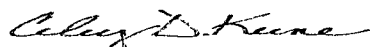
Surrogate: 1-Chlorooctane 96.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 120 % 63 6-154

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

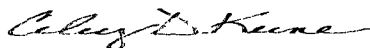
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager





# **CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240  
(505) 393-2326 Fax (505) 393-2476

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Page 1 of 1

Company Name: <b>Safety &amp; Environmental Solutions, Inc.</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																						
Project Manager: <b>Bob Allen</b>		P.O. #:																								
Address: <b>703 East Clinton</b>		Company: <b>Same</b>																								
City: <b>Hobbs</b> State: <b>NM</b> Zip: <b>88240</b>		Attn:																								
Phone #: <b>575-397-0510</b> Fax #: <b>575-393-4388</b>		Address:																								
Project #: Project Owner:		City:																								
Project Name: <b>SELISK FED 33-2</b>		State: Zip:																								
Project Location: <b>CHIMAROK</b>		Phone #:																								
Sampler Name: <b>BOWMAN</b>		Fax #:																								
FOR LAB USE ONLY		MATRIX		PRESERV.		SAMPLING																				
Lab I.D.	Sample I.D.	(G/RAB OR C/OMP. #) CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME													
<b>H201371</b>																										
1	TEST TRENCH 2, 2'	G 1			X				X			6/14	0813	X	X	X										
2	TEST TRENCH 2, 3'	G 1			X				X			6/14	0828	X	X	X										
3	TEST TRENCH 1, 2'	G 1			X				X			6/14	0824	X	X	X										
4	" 1, 4'	G 1			X				X			6/14	0841	X	X	X										
5	TEST TRENCH 3, 1'	G 1			X				X			6/14	0915	X	X	X										

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice and all costs of collections, including attorney's fees.

Sampler Relinquished By:		Date: <b>6-15-12</b>	Received By:		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:		Time: <b>1:50</b>	Received By:		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)		Date: <b>6/15/12</b>	Received By:		REMARKS:	
Sampler - UPS - Bus - Other:		Time: <b>4:13</b>	Temp. <b>25°C</b>			
		Sample Condition		CHECKED BY: (Initials)		
		Cool Intact				
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

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