

### LINN ENERGY

2130 W. Bender Blvd.Hobbs, NM 88241Phone 575.738.1739

### J.L. Keel A #28 2RP-2028

# Termination Request

API No. 3001528231

Release Date: Discovered on June 27th, 2011

Unit Letter J, Section 7, Township 17S, Range 31E



CONSULTING & SAFETY

PO Box 2948 | Hobbs, NM 88241 | Phone 575.393.2967

April 21<sup>st</sup>, 2014

#### Mike Bratcher

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau – District 2 811 S. First St. Artesia, NM 88210

> RE: Termination Request Linn Energy – J.L. Keel A #28 (2RP-2028) UL/J sec. 7 T17S R31E API No. 3001528231

Mr. Bratcher:

Linn Energy (Linn) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

#### **Background and Previous Work**

The site is located approximately 4.7 miles northeast of Loco Hills, New Mexico at UL/J sec. 7 T17S R31E. This site is in an area of no known groundwater.

While BLM was inspecting another site in the area on June 27<sup>th</sup>, 2011, BLM discovered a flow line release to the J.L. Keel A #28 injection well. A total of 6,762 sq ft of pasture land was affected by the release. An initial C-141 was sent to NMOCD and BLM on October 28<sup>th</sup>, 2013 (Appendix A). NMOCD responded on October 29<sup>th</sup>, 2013 with the remediation permit number.

RECS personnel were on site beginning on October 25<sup>th</sup>, 2013 to assess the site. The release was sampled at the surface and at depth at six points throughout the release area (Figure 1). The samples were field tested for chlorides and hydrocarbons and representative samples were taken to a commercial laboratory for analysis (Appendix B). The release on the east side of the road was located over a former pit area. Laboratory chloride readings from the surface on the east side were above 250 mg/kg, except at Point 4 where the chloride reading was non-detect. Gasoline Range Organics (GRO) readings and BTEX readings from the surface samples on the east side were non-detect. Diesel Range Organics (DRO) readings at the surface on the east side were elevated, except for Point 4, but still below regulatory standards. Point 2 was augured to determine the depth of contamination. At 7 ft bgs, laboratory sampling showed a chloride value below 250 mg/kg and GRO, DRO and BTEX values of non-detect.

On the west side of the release road, laboratory analysis showed chloride, GRO, DRO and BTEX values of non-detect or near non-detect.

On November 1<sup>st</sup>, 2013, RECS met with BLM at the site. BLM recommended that the release on the east side of the lease road and the pit area be capped with 6 inches of caliche and then 2 ft of clean, imported topsoil. The site would then be seeded with a blend of native vegetation. Vegetation provides an infiltration barrier for the site, since plants capture water through their roots thereby reducing the amount of water traveling through the vadose zone.

The area to the west side of the lease road did not need to be addressed since sampling indicates no ecological detriment occurred to the area.

A Corrective Action Plan (CAP) detailing these actions was submitted to NMOCD and BLM on November 14<sup>th</sup>, 2013. BLM approved the CAP on November 15<sup>th</sup>, 2013 and NMOCD approved the CAP on February 13<sup>th</sup>, 2014. CAP activities began at the site on February 18<sup>th</sup>, 2014. A total of 180 yards of caliche was imported to the site and used to top-cap the east release area and pit. The caliche was watered and roller packed to provide a compact surface. A total of 694 yards of clean topsoil was imported to the site to backfill over the caliche to a depth of 2 ft. A sample of the imported soil was taken to a commercial laboratory for analysis and returned a chloride result of non-detect (Appendix C). On March 10<sup>th</sup>, 2014, soil amendments were added to the site and the site was seeded with BLM mix #2 and #4.

Photo documentation of all activities can be found in Appendix D.

Given that the corrective actions have been completed as approved by NMOCD and BLM, Linn respectfully requested 'remediation termination' and site closure. A final C-141 for the site can be found in Appendix E.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer

**Project Scientist** 

**RECS** 

(575) 441-0431

#### Attachments:

Figure 1 – Initial Sampling Data

Appendix A – Initial C-141

Appendix B – Initial Laboratory Analyses

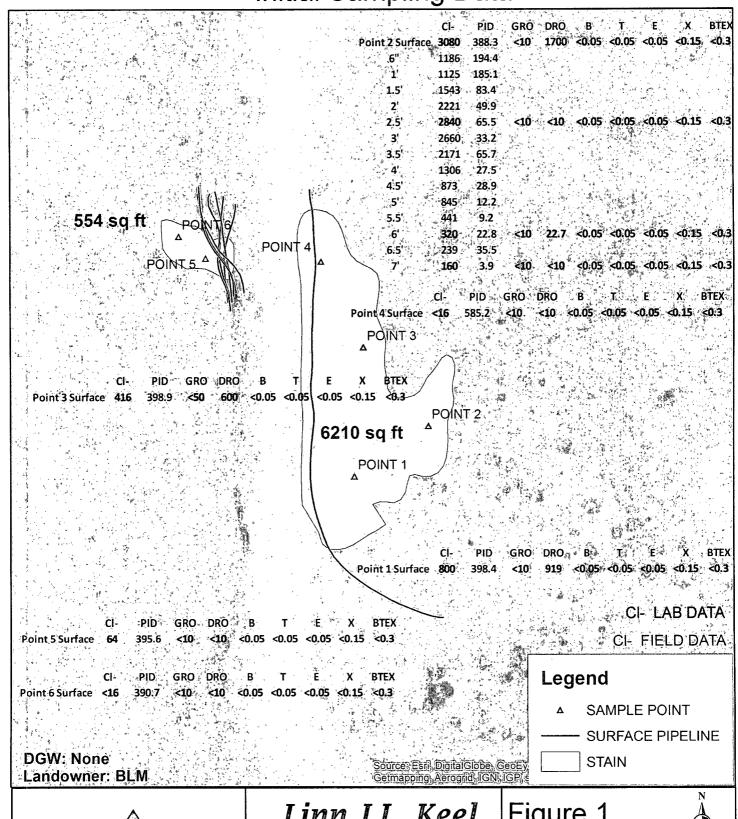
Appendix C – Imported Soil Lab

Appendix D – Photo Documentation

Appendix E – Final C-141

Figures

Initial Sampling Data





### Linn J.L. Keel A #28

LEGALS: UL/J sec. 7 T-17-S R-31-E EDDY COUNTY, NM NMOCD Case #: 2RP-2028

### Figure 1



0	25	50
E	$\pm$ H $-$	Feet

GPS date: 10/25/13 KS Drawing date: 11/4/13 Drafted by: L. Weinheimer



RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

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

Form C-141
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 19.15.29 NMAC.

Release Notification and Corrective Action										
OPERATOR Initial Report Final Re	eport									
Name of Company Linn Energy Contact Brian Wall										
Address 2130 W. Bender Blvd., Hobbs, NM 88240 Telephone No. (806) 367-0645										
Facility Name J.L. Keel A #28 Facility Type Flow Line Release										
	=									
Surface Owner BLM Mineral Owner API No. 3001528231										
LOCATION OF RELEASE										
Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County										
J 7 17S 31E 2196 FSL 2028 FEL EDDY										
Latitude 32°50'52.24"N Longitude 103°54'26.222"W										
NATURE OF RELEASE										
Type of Release Produced water/Oil Volume of Release Unknown Volume Recovered None										
Source of Release Break in flow line Date and Hour of Occurrence Date and Hour of Discovery										
Unknown 6/27/11										
Was Immediate Notice Given?  Yes No Not Required  If YES, To Whom?										
By Whom? Date and Hour										
Was a Watercourse Reached?  If YES, Volume Impacting the Watercourse.										
☐ Yes ☒ No RECEIVED	1									
If a Watercourse was Impacted, Describe Fully.*										
APR <b>2 2</b> 2014										
NMOCD ARTESIA!										
Describe Cause of Problem and Remedial Action Taken.*										
While BLM was inspecting another site in the area, BLM discovered a flow line release to the J.L. Keel A #28 injection well. A total of 6762 sq ft of	ŀ									
pasture land was affected by the release.										
Describe Area Affected and Cleanup Action Taken.*	$\neg$									
The site will be assessed vertically and horizontally and a Corrective Action Plan will be written with recommendations to remediate the site.										
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	1									
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	ŀ									
should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health	h									
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.										
	_									
OIL CONSERVATION DIVISION										
Signature: Fred B Wall										
Approved by Environmental Specialist:	ŀ									
Printed Name: Brian Wall										
Title: Construction Foreman II Approval Date: Expiration Date:										
E-mail Address: Bwall@linnenergy.com Conditions of Approval:  Attached										
Date: Phone: (806) 367-0645										

<sup>\*</sup> Attach Additional Sheets If Necessary

Appendix B
Initial Laboratory Analyses

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967



November 04, 2013

JACOB KAMPLAIN
RICE ENVIRONMENTAL CONSULTING & SAFETY LLC
419 W. CAIN
HOBBS, NM 88240

RE: J. L. KEEL A #28

Enclosed are the results of analyses for samples received by the laboratory on 10/25/13 16:20.

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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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.

Celeg D. Keine

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



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/25/2013

Sampling Date:

10/25/2013

Reported:

11/04/2013

Sampling Type:

Soil

Project Name:

J. L. KEEL A #28 NONE GIVEN

Sampling Condition:

Cool & Intact

Project Number: Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

#### Sample ID: POINT 1 @ SURFACE (H302605-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	1.68	83.8	2.00	3.80	
Toluene*	< 0.050	0.050	10/29/2013	ND	1.71	85.5	2.00	3.52	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	1.72	86.0	2.00	3.73	
Total Xylenes*	< 0.150	0.150	10/29/2013	ND	5.10	85.0	6.00	3.31	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	107 %	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	800	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	919	10.0	10/29/2013	ND	202	101	200	1.03	
Surrogate: 1-Chlorooctane	98.8	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	127 9	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celeg D. Keine



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(575) 397-1471 Fax To:

Received:

10/25/2013

Sampling Date:

10/25/2013

Reported:

11/04/2013

Sampling Type:

Soil

J. L. KEEL A #28

Sampling Condition:

Cool & Intact

Project Name: Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 2 @ SURFACE (H302605-02)

BTEX 8021B	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	1.68	83.8	2.00	3.80	
Toluene*	< 0.050	0.050	10/29/2013	ND	1.71	85.5	2.00	3.52	
Ethylbenzene*	< 0.050	0.050	10/29/2013	ND	1.72	86.0	2.00	3.73	
Total Xylenes*	<0.150	0.150	10/29/2013	ND	5.10	85.0	6.00	3.31	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	107 9	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3080	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	1700	10.0	10/29/2013	ND	202	101	200	1.03	
Surrogate: 1-Chlorooctane	98.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	142 9	63.6-15	4						

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\*=Accredited Analyte

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Celey D. Keine



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Fax To:

(575) 397-1471

Received:

10/25/2013

Sampling Date:

10/25/2013

Reported:

11/04/2013

Sampling Type:

Soil

Project Name:

J. L. KEEL A #28

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 3 @ SURFACE (H302605-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	1.68	83.8	2.00	3.80	
Toluene*	<0.050	0.050	10/29/2013	ND	1.71	85.5	2.00	3.52	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	1.72	86.0	2.00	3.73	
Total Xylenes*	<0.150	0.150	10/29/2013	ND	5.10	85.0	6.00	3.31	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	105 %	6 89.4-12	6						-
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	600	50.0	10/29/2013	ND	202	101	200	1.03	
Surrogate: 1-Chlorooctane	89.05	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	121 %	63.6-15	4						

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\*=Accredited Analyte

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Fax To:

(575) 397-1471

Received:

10/25/2013

Sampling Date:

10/25/2013

Reported:

11/04/2013

Sampling Type:

Soil

Project Name:

J. L. KEEL A #28

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 4 @ SURFACE (H302605-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	1.68	83.8	2.00	3.80	
Toluene*	<0.050	0.050	10/29/2013	ND	1.71	85.5	2.00	3.52	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	1.72	86.0	2.00	3.73	
Total Xylenes*	< 0.150	0.150	10/29/2013	ND	5.10	85.0	6.00	3.31	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	105 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride .	<16.0	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	202	101	200	1.03	
Surrogate: 1-Chlorooctane	96.3	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	100 9	63.6-15	4						

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Celey D. Kune



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Fax To: (575) 397-1471

Received:

10/25/2013

Sampling Date:

10/25/2013

Reported:

11/04/2013

Sampling Type:

Soil

DTEV 00310

Sampling Condition:

Cool & Intact

Project Name: Project Number: J. L. KEEL A #28 NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 5 @ SURFACE (H302605-05)

Analyte :ne* ne* penzene* Xylenes*	Result <0.050 <0.050 <0.050 <0.050 <0.150	0.050 0.050 0.050	Analyzed 10/29/2013 10/29/2013	Method Blank ND ND	BS 1.68 1.71	% Recovery 83.8 85.5	True Value QC 2.00	RPD 3.80	Qualifier
ne* penzene*	<0.050 <0.050	0.050	10/29/2013						
enzene*	<0.050		, ,	ND	1.71	Q 5 5			
		0.050				03.3	2.00	3.52	
Xylenes*	< 0.150		10/29/2013	ND	1.72	86.0	2.00	3.73	
		0.150	10/29/2013	ND	5.10	85.0	6.00	3.31	
BTEX	<0.300	0.300	10/29/2013	ND.					
gate: 4-Bromofluorobenzene (l	PIE 106%	6 89.4-120	6						
ide, SM4500CI-B	mg/k	kg	Analyze	d By: AP					
Anatyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
ride	64.0	16.0	10/29/2013	ND	400	100	400	3.92	
015M	mg/k	кg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPĎ	Qualifier
C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
	-10.0	10.0	10/29/2013	ND	202	101	200	1.03	
>C10-C28	<10.0								
	<10.0 100 %	65.2-14	0						<del>-</del>
C6-C10									

Analysis of Dyn MC

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\*=Accredited Analyte

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Celey D. Keine



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/25/2013

Sampling Date: 10/25/2013

Reported:

11/04/2013

Sampling Type: Soil

Sampling Condition:

Sample Received By:

Project Name: Project Number: J. L. KEEL A #28 NONE GIVEN

Cool & Intact Jodi Henson

Project Location:

NOT GIVEN

#### Sample ID: POINT 6 @ SURFACE (H302605-06)

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	104 9	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	202	101	200	1.03	
Surrogate: 1-Chlorooctane	97.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	97.4	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celeg D. Keens

Celey D. Keene, Lab Director/Quality Manager



ND

#### **Notes and Definitions**

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

Analyte NOT DETECTED at or above the reporting limit

Cardinal Laboratories

\*=Accredited Analyte

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Celey & Keene

# Ø

#### ARDINAL LABORATORIES

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

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name	(505) 393-2326 FAX (505) 393-2 RECS	476 (323) 613	7-7001 FA			LL 70		ā .				ANA	LYSIS	- DE	OUE	OT.		<del></del>	
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Project Location	n: J.L. Keel A #28			Phon	1e #:	, <u></u>	. !	」 <u> </u>	100	ּוֹשְׁן	\ \s	Cations/Anions	TDS		1			1	
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Lab I.D. H302605 1 2 3 4 5	Sample I.D.  foint 1@ Surface foint 2@ Surface foint 3@ Surface foint 4@ Surface foint 5@ Surface foint 6@ Surface foint 6 @ Surface	(G)RAB OR (C)OMP.  ———— # CONTAINERS  GROUNDWATER  WASTEWATER	MATRIX  OIL  OIL  A  A  A  A  A  A  A  A  A  A  A  A  A	ij	ACIDIBASE: 20 AC		TIME 1:45 1:55 2:00 2:05 2:16	RAXXXX	T	XXXXX	Ð.	Complete							
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analyses. All claims includin service. In no event shall Ca affiliates or successors arisin	nd Damages. Cardinat's fiability and client's exclusive remedy for ng those for negligence and any other cause whatsoever shall be ardinal be liable for incidental or consequental damages, includir ing out of or related to the performance of services hereunder by	e deemed waived unless maing without limitation, busines or Cardinal, regardless of whet	nade in writing and i ess interruptions, lo nether such claim is	d received loss of use	d by Cardinal w se, or loss of pr	within 30 days afte profits incurred by o	ter completion of the client, its subsidia easons or otherwis	the applications lianes, vise.											
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Relinquished By	Time:	Received By:					kschn Knorm Kjone	man@	@rice	e-ec	s.cor	m 🗀	mnla	in@r	rico-	ane r	om		
Delivered By: Sampler - UPS	: (Circle One) - Bus - Other:		nple Condition of Intact Yes Yes		CHECK	KED BY:	hcond											com	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393, 2476



November 04, 2013

JACOB KAMPLAIN
RICE ENVIRONMENTAL CONSULTING & SAFETY LLC
419 W. CAIN
HOBBS, NM 88240

RE: J. L. KEEL A #28

Enclosed are the results of analyses for samples received by the laboratory on 10/28/13 16:20.

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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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.

Celeg & Keine

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



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/28/2013

Sampling Date:

10/28/2013

Reported:

11/04/2013

Sampling Type:

Soil

Project Name:

J. L. KEEL A #28

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

#### Sample ID: POINT 2 @ 2.5' (H302611-01)

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND .	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIE	107 9	% 89.4-12	6				,		
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP				. <u>.</u>	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2840	16.0	10/29/2013	ND	416	104	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	
Surrogate: 1-Chlorooctane	89.6	% 65.2-14	o						
Surrogate: 1-Chlorooctadecane	97.8	% 63.6-15	4						

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 faible for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or 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.

Celegio Kreene



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/28/2013

Sampling Date:

10/28/2013

Reported:

BTEX 8021B

11/04/2013

Sampling Type:

Soil

Project Name:

J. L. KEEL A #28

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

mg/kg

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 2 @ 6' (H302611-02)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	<0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	<0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	<0.300	0.300	11/01/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 9	% 89.4-12	6	-					
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	10/29/2013	ND	416	104	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	22.7	10.0	10/29/2013	ND	189	94.6	200	5.97	

Analyzed By: MS

Surrogate: 1-Chlorooctane

74.2 %

65.2-140

Surrogate: 1-Chlorooctadecane

76.4%

63.6-154

Cardinal Laboratories \*=Accredited Analyte

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Celeg D. Keene

Celey D. Keene, Lab Director/Quality Manager



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/28/2013

Sampling Date:

10/28/2013

Reported:

11/04/2013

Sampling Type:

Soil

Project Name:

J. L. KEEL A #28 NONE GIVEN Sampling Condition: Sample Received By: Cool & Intact Jodi Henson

Project Number: Project Location:

NOT GIVEN

Sample ID: POINT	2@	7'	(H302611-03)
DTEV 0021D			ma/le

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	zene* <0.050 0.050		11/01/2013	ND	2.06	103	2.00	0.153	
Toluene*	<0.050	0.050	11/01/2013	ND	2.05	103	2.00	0.309	
Ethylbenzene*	< 0.050	0.050	11/01/2013	ND	2.07	104	2.00	0.301	
Total Xylenes*	< 0.150	0.150	11/01/2013	ND	5.96	99.4	6.00	0.106	
Total BTEX	tal BTEX <0.300 0.300								
Surrogate: 4-Bromofluorobenzene (PIE	106 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	10/29/2013 ND		416	104	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	199	99.5	200	3.71	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	189	94.6	200	5.97	
Surrogate: 1-Chlorooctane	89.1 % 65.2-14		0						
Surrogate: 1-Chlorooctadecane	93.9	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celeg & Keens

Celey 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

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Celeg D. Keine

# ARD

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

#### ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: RECS	BILL TO												
Project Manager: Jacob Kamplain	, P.O. #:												
Address:	Company:												
City: Hobbs State: NM Zip: 88240	Attn:												
Phone #: Fax #:	Address:												
Project #: Project Owner:	City:												
Project Name:	State: Zip:	alorides H 8015 M BTEX Ass TPH Cations/Anions TDS											
Project Location: J.L. Keel A #28	Phone #:	Illorid STEY STEY TDS											
Sampler Name: Kyle Schnaidt	Fax #:												
Lab I.D. Sample I.D.  H3DZ611  I post 2@25'  Z point 2@6  3 point 2@7  4 1	MATRIX PRESERV. SAMPLING  INCOMPLEX STANDARD STANDARD SAMPLING  INCOMPLEX STANDARD SAMPLING  INCOMPLEX SAM	ME COMPIE											
	nade in writing and received by Cardinal within 30 days after completings interruptions, loss of use, or loss of profits incurred by client, its either such claim is based upon any of the above stated reasons or or its profits of the state	tion of the applicable subsidiaries,											

#54

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

## Appendix C Imported Soil Lab



February 25, 2014

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: J, L. KEEL A #28

Enclosed are the results of analyses for samples received by the laboratory on 02/19/14 16:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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.

Celeg D. Keine

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



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received: Reported: 02/19/2014

02/25/2014

J. L. KEEL A #28

Project Name: Project Number:

NONE GIVEN

Project Location:

T17S R31E

Sampling Date:

02/19/2014

Sampling Type: Soil

Cool & Intact

Sampling Condition: Sample Received By:

Jodi Henson

#### Sample ID: IMPORTED SOIL (H400504-01)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/24/2014	ND	448	112	400	0.00	

\*=Accredited Analyte Cardinal Laboratories

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



ND

#### **Notes and Definitions**

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

Analyte NOT DETECTED at or above the reporting limit

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keine

# ARDINAL LABORA

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

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

hconder@rice-ecs.com; Lweinheimer@rice-ecs.com;

sedwards@rice-ecs.com; lflores@rice-ecs.com; agroves@rice-ecs.com

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

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PLEASE NOTE: Liability a	nd Damages. Cardinal's liability and client's exclusive remedy for	any clair	n arisin	g wheth	er based	in con	ntract o	r tort, s	nall be i	imited	to the amount pa	id by the client fo	r the	Lie		<del> </del>	٠	<u> </u>		+	<del></del>	<del></del>		
service. In no event shall C	ing those for negligence and any other cause whatsoever shall be cardinal be liable for incidental or consequental damages, includir ing out of or related to the performance of services hereunder by	ng withou	t limital	ion, bus	iness int	terrupti	ons, lo	ss of us	e, or lo	ss of p	rofits incurred by	client, its subsidia	aries,	iDie										•
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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



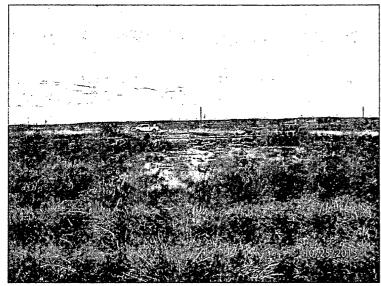
Sample Condition
Cool Intact
Dives Gres
No No

# Appendix D Photo Documentation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

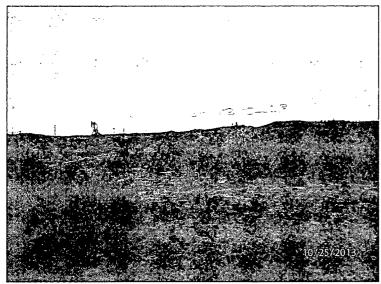
### Linn J.L. Keel A #28

Unit Letter J, Section 7, T17S, R31E



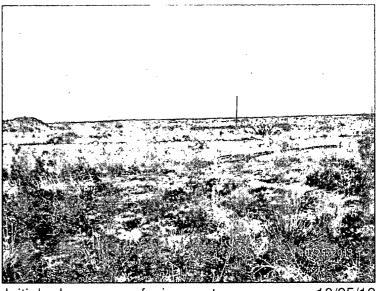
Initial release area, facing south

10/25/13



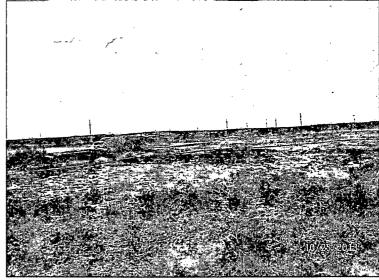
Initial release area, facing northwest

10/25/13



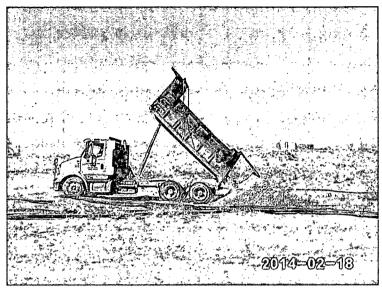
Initial release area, facing east

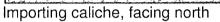
10/25/13



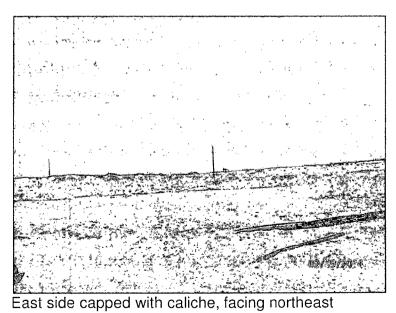
Initial release area, facing southwest

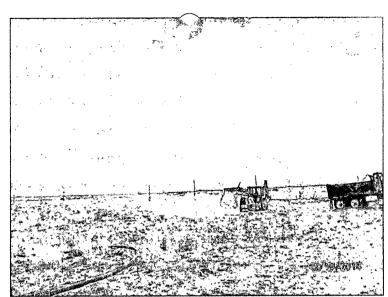
10/25/13



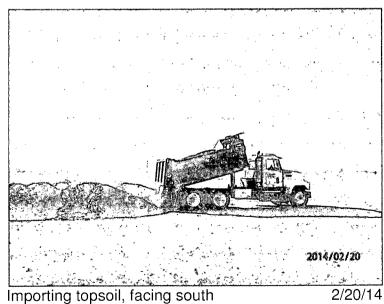


2/18/14



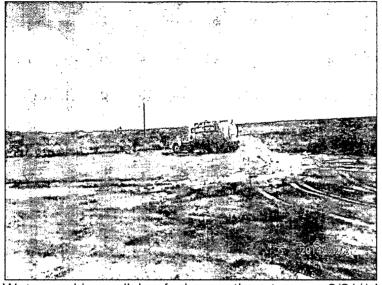


Spreading caliche over east side, facing southeast 2/19/14

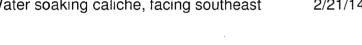


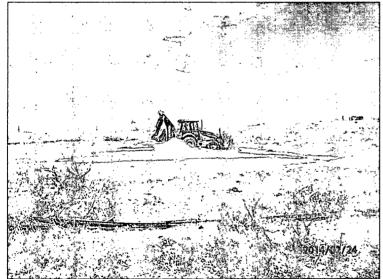
Importing topsoil, facing south

2/19/14

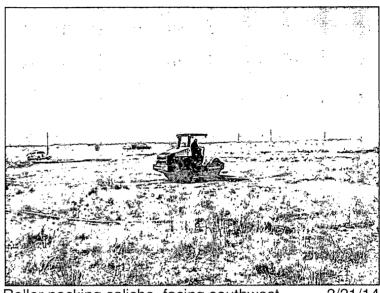


Water soaking caliche, facing southeast

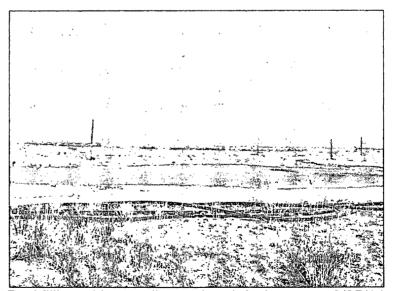




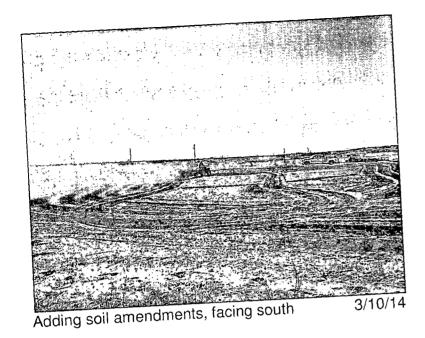
Backfilling site with topsoil, facing northwest

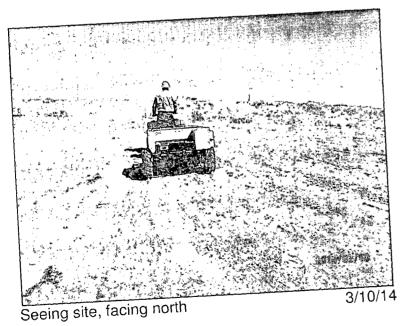


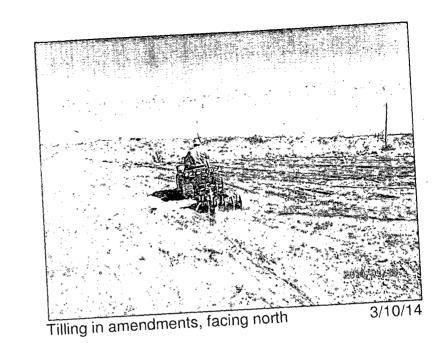
Roller packing caliche, facing southwest

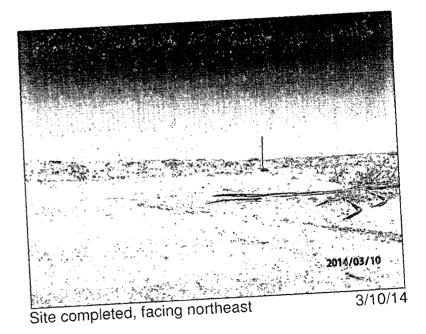


Backfilling with topsoil completed, facing east 2/25/14









Appendix E Final C-141

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

Form C-141 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 19.15.29 NMAC.

Release Notification and Corrective Action															
						<b>OPERA</b>	$\boxtimes$	Final Report							
Name of Co			L. I. I ND	4 00240		Contact Brian Wall									
Facility Na		der Blvd., F	lobbs, ini	VI 88240		Telephone No. (806) 367-0645 Facility Type Flow Line Release									
Surface Ow				Mineral C					·A DI Ma	. 3001528:	221				
Surface Ow	ner BLM			•					APINO	5001326	231				
LOCATION Description of the North Control of the No							LEASE Feet from the	East/We	ot Line						
Unit Letter	Section	Township	Range	Feet from the	North/,	South Line	County								
J	7	178	31E	2196	F	SL	2028	FE	L	EDDY					
Latitude 32°50'52.24"N Longitude 103°54'26.222"W															
				NAT	URE	OF REL	EASE								
Type of Rele							Release Unknow			Recovered N					
Source of Re	iease Break	in flow line				Unknown	Iour of Occurrenc		5/27/11	Hour of Disc	covery				
Was Immedi	ate Notice C		υ K	1		If YES, To	Whom?								
D 33/1 0			Yes 🗵	No Not Ro	equired	D . 11									
By Whom? Was a Water	course Reac	hed?				Date and F	lour Dlume Impacting t	he Watero	ourse.						
			Yes 🛚	No		,	1 0								
If a Watercon	ırse was Im	pacted, Descr	ibe Fully.	*											
Describe Cau	ise of Proble	em and Reme	dial Actio	n Taken.* While	BLM wa	as inspecting a	another site in the a	irea, BLM	discovere	ed a flow line	release	e to the J.L.			
Keel A #28 ir	jection well.	A total of 67	62 sq ft of	pasture land was a	ffected b	y the release.									
							nning on October tested for chlorides								
taken to a cor	nmercial lab	oratory for ana	lysis. The	release on the cas	t side of t	he road was b	ocated over a forme he pit area be capp	er pit area.	On Nov	ember 1 <sup>st</sup> , 20	13, RE	CS met with			
imported tops	oil. The site	would then be	e seeded w	ith a blend of nativ	e vegetat	ion. The area	to the west side of	f the lease	road did	not need to be	e addres	ssed since			
sampling indi	cates no ecol	logical detrime M approved th	ent occurre	d to the area. A C	orrective	Action Plan (	CAP) detailing the oved the CAP on F	se actions Sebruary 13	was subn 8 <sup>th</sup> 2014	nitted to NM0 CAP activiti	OCD ar	nd BLM on			
on February I	8 <sup>th</sup> , 2014. A	A total of 180	ards of ca	liche was imported	l to the si	te and used to	top-cap the east re	elease area	and pit.	The caliche v	vas wat	tered and			
the imported	to provide a soil was take	compact surfa n to a commer	ce. A tota cial labora	l of 694 yards of cl tory for analysis a	ean topso nd returne	oil was import ed a chloride i	red to the site to bar result of non-detect	ckfill over t. On Mar	the calicl ch 10 <sup>th</sup> , 20	he to a depth 014, soil ame	of 2 ft. ndment	A sample of ts were added			
to the site and	the site was	seeded with E	BLM mix #	2 and #4.											
							knowledge and u nd perform correc								
public health	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										f liability				
or the enviro	operations in ment. In a	ddition, NMC	adequatery CD accep	otance of a C-141	report de	e comaminati oes not reliev	e the operator of i	eat to grot responsibi	and water	r, surrace wa ompliance w	uer, nu ⁄ith any	man neattn y other			
federal, state	, or local lav	vs and/or regu	lations.		<sub>1</sub>		OH GOV	OEDII.	TO N						
	- 1						OIL CON	SER V A	TION	DIVISIC	<u>)N</u>				
Signature:	tred B	vall													
Printed Nam	e: Brian W	all				Approved by Environmental Specialist:									
Title: Const	ruction Fore	eman II				Approval Da	te:	Ex	piration	Date:					
E-mail Addr	ess: Bwall	@linnenergy.	com		Conditions of Approval:										
Date: 4/21				: (806) 367-0645						Littlemou					
Attach Addi	tional Shee	ets If Necess	arv									· · · · ·			

#### Patterson, Heather, EMNRD

From:

Thanks!

Sent: To: Cc: Subject:	Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD 'Hack Conder'; 'Jacob Kamplain' FW: Linn H.E. West B #2 Battery - West B #88 (2RP-1189) Termination Request Approval from BLM
•	
Lara, This Termination reque Thanks	st is approved.
Mike Burton BLM-CFO Environmental Prote 575-234-2226 office 575-361-3574 cell mburton@blm.gov	ction Specialist
not the intended recipie any review, disseminati herein, is prohibited. If	NOTICE: The information in this email may be confidential and/or privileged. If you are not or an authorized representative of the intended recipient, you are hereby notified that on or copying of this email and its attachments, if any, or the information contained you have received this email in error, please immediately notify the sender by return nail from your system. Thank you.
On Fri, Apr 4, 2014 at 1 NU12136TG	1:27 AM, Lara Weinheimer < lweinheimer@rice-ecs.com > wrote:
	nn H.E. West B #2 Battery/ West B #88 (2RP-1189) Termination Request. If you have t us know. Otherwise we await your approval.

Lara Weinheimer < lweinheimer@rice-ecs.com>

#### Lara Weinheimer

Rice Environmental Consulting & Safety

Project Scientist

419 West Cain

Hobbs, NM 88240

(575) 441-0431

