

## **LINN ENERGY**

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

**H.E. West B #83**  
**(2RP-2032)**

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# **Corrective Action Plan**

API No. 3001528483

Release Date: Unknown

Unit Letter D, Section 4, Township 17S, Range 31E

April 4<sup>th</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: **Corrective Action Plan**  
**Linn Energy – H.E. West B #83 (2RP-2032)**  
**UL/D sec. 4 T17S R31E**  
**API No. 3001528483**

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 6.8 miles northeast of Loco Hills, New Mexico at UL/D sec. 4 T17S R31E. This site is in an area of no known groundwater.

A total of 4,180 square feet of pasture land was affected by a release of 12 barrels of oil. None of this fluid was recovered. An initial C-141 was written for this release, which was received by NMOCD on October 30<sup>th</sup>, 2013. NMOCD approved the initial C-141 on October 31<sup>st</sup>, 2013 (Appendix A).

Another environmental company had control of the remediation process for this site prior to RECS obtaining it on August 27<sup>th</sup>, 2013. The previous company sampled the site at the surface and with depth and representative samples were taken to a commercial laboratory for analysis (Figure 1). SP-4 through SP-8 returned laboratory chloride values near or at non-detectable levels at the surface and with depth (Appendix B). Gasoline Range Organics (GRO) returned values of non-detect at all points and all depths. Diesel Range Organics (DRO) were below regulatory standards at all samples and at all depths except in SP-4, where the surface DRO value was 7,210 mg/kg, which dropped to 3,320 mg/kg at 2 ft bgs and at SP-7, where the surface DRO value was 5,880 mg/kg, which dropped to 405 mg/kg at 2 ft bgs.

RECS personnel were on site beginning on September 3<sup>rd</sup>, 2013. The site was GPS mapped and two samples, SP-1 and SP-2 were sampled at the surface and with depth to replace the samples taken by the previous environmental company. The previous company took sample points at such impractical depths that it was impossible to tell at what depths contamination dropped below regulatory standards. Representative samples from SP-1 and SP-2 were taken to a

commercial laboratory for analysis. SP-1 returned laboratory chloride values below regulatory standards starting at 1 ft bgs and SB-2 returned laboratory chloride values below regulatory standards starting at 6 inches bgs. GRO values were non-detect in both sample points and at all depth, except for SP-2 at 1 ft, where the GRO value was 106 mg/kg. DRO values in SP-1 and SP-2 were below regulatory standards. BTEX readings in both SP-1 and SP-2 were non-detect at all depths.

Photo documentation for the site can be found in Appendix C.

### **Corrective Action Plan**

Based on the laboratory sampling data, the areas around SP-1, SP-2, SP-5 and SP-6 will be scraped down 6 inches (Figure 2). The areas around SP4, SP-7 and SP-8 will be scraped down 1 foot. The excavated soils will be evaluated for use as backfill and any soils that do not meet regulatory standards of chlorides below 1,000 mg/kg and TPH below 1,000 mg/kg will be disposed of at a NMOCD approved facility. The remaining soil will be blended on site to serve as backfill. Clean soil will be imported to the site as needed to replace any soils taken for disposal. A sample of the blended backfill will be taken to a commercial laboratory for analysis to verify the constituents are below regulatory standards. The scraped will be backfilled with the blended soil and contoured to the surrounding location. Soil amendments will be added as necessary and the site will be seeded with a blend of native vegetation. Vegetation acts as an infiltration barrier for the site, since plants capture water through their roots thereby reducing the amount of water traveling through the vadose zone to groundwater.

Once these activities have been completed, a report detailing these actions will be submitted to NMOCD and BLM with a request for 'remediation termination' and site closure.

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.

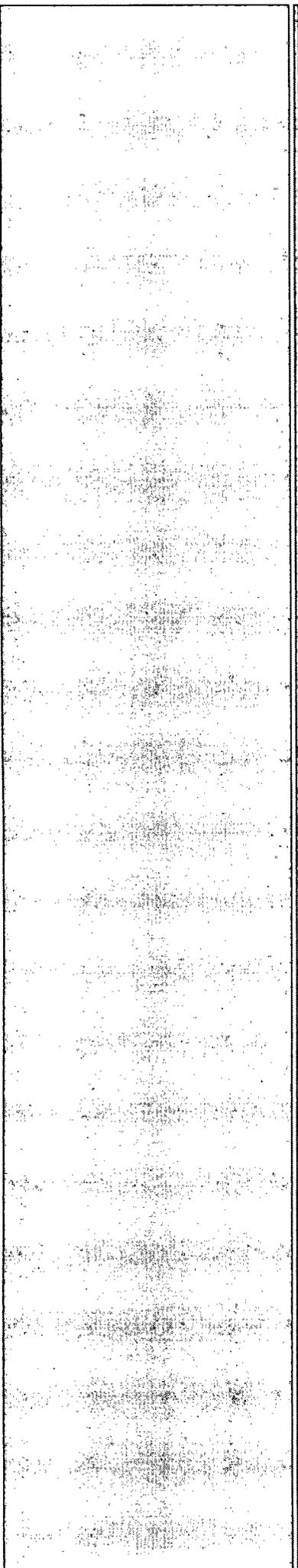
Sincerely,



Lara Weinheimer  
Project Scientist  
RECS  
(575) 441-0431

#### Attachments:

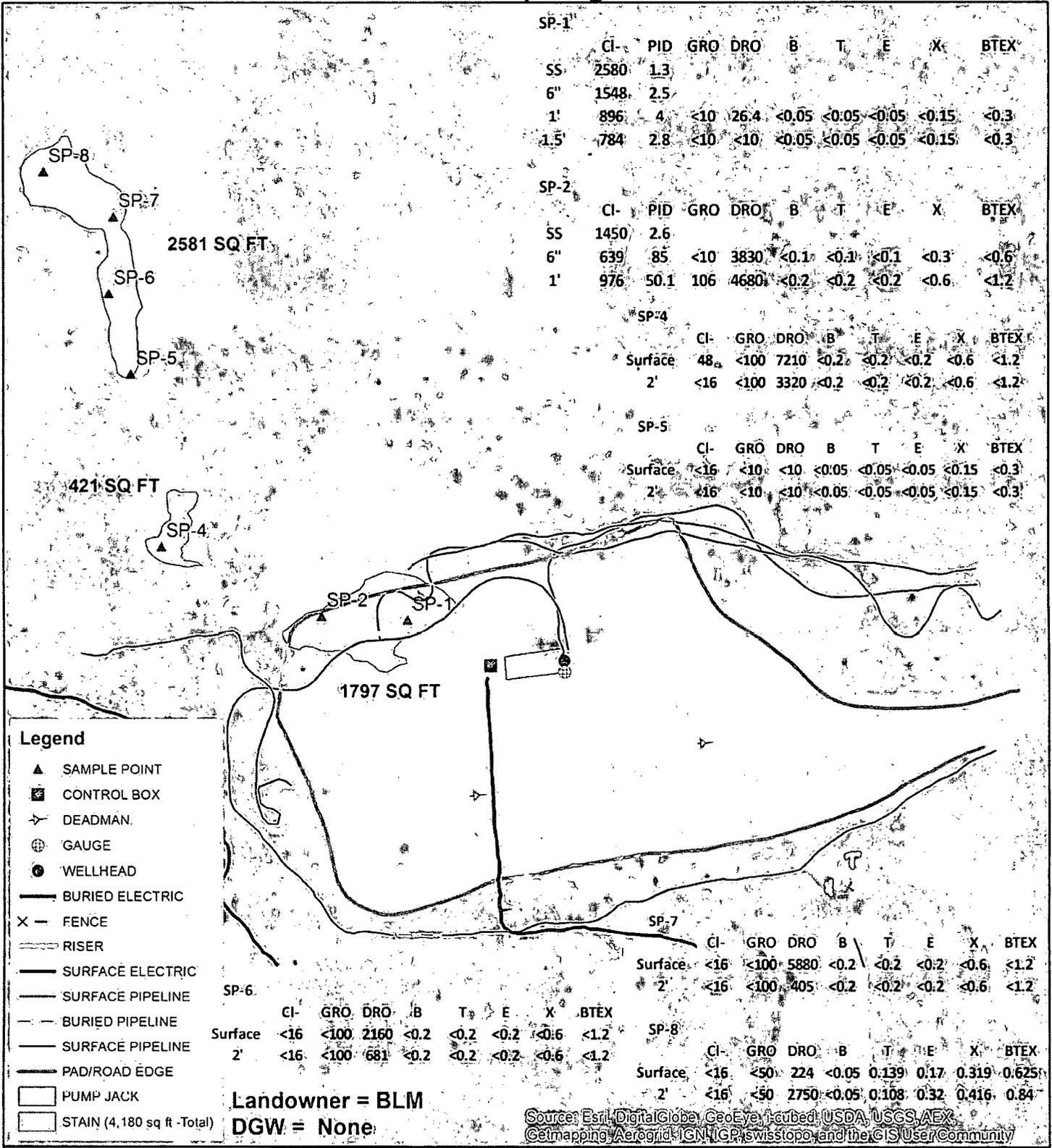
- Figure 1 – Initial Sampling Data
- Figure 2 – Proposed Corrective Actions
- Appendix A – Initial C-141
- Appendix B – Initial Sampling Labs
- Appendix C – Photo Documentation



# Figures

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

# Initial Sampling Data



**SP-1**

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
SS	2580	1.3							
6"	1548	2.5							
1'	896	4	<10	26.4	<0.05	<0.05	<0.05	<0.15	<0.3
1.5'	784	2.8	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

**SP-2**

	CI-	PID	GRO	DRO	B	T	E	X	BTEX
SS	1450	2.6							
6"	639	85	<10	3830	<0.1	<0.1	<0.1	<0.3	<0.6
1'	976	50.1	106	4680	<0.2	<0.2	<0.2	<0.6	<1.2

**\*SP-4**

	CI-	GRO	DRO	B	T	E	X	BTEX
Surface	48	<100	7210	<0.2	<0.2	<0.2	<0.6	<1.2
2'	<16	<100	3320	<0.2	<0.2	<0.2	<0.6	<1.2

**SP-5**

	CI-	GRO	DRO	B	T	E	X	BTEX
Surface	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
2'	<16	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

**SP-7**

	CI-	GRO	DRO	B	T	E	X	BTEX
Surface	<16	<100	5880	<0.2	<0.2	<0.2	<0.6	<1.2
2'	<16	<100	405	<0.2	<0.2	<0.2	<0.6	<1.2

**SP-6**

	CI-	GRO	DRO	B	T	E	X	BTEX
Surface	<16	<100	2160	<0.2	<0.2	<0.2	<0.6	<1.2
2'	<16	<100	681	<0.2	<0.2	<0.2	<0.6	<1.2

**SP-8**

	CI-	GRO	DRO	B	T	E	X	BTEX
Surface	<16	<50	224	<0.05	0.139	0.17	0.319	0.625
2'	<16	<50	2750	<0.05	0.108	0.32	0.416	0.84

Source: Esri, DigitalGlobe, GeoEye, iSat, USDA, USGS, AEX, Getmapping, Aergrid, IGN, IGP, swisstopo, and the GIS User Community



**LINN H.E. WEST B  
FEDERAL #083**

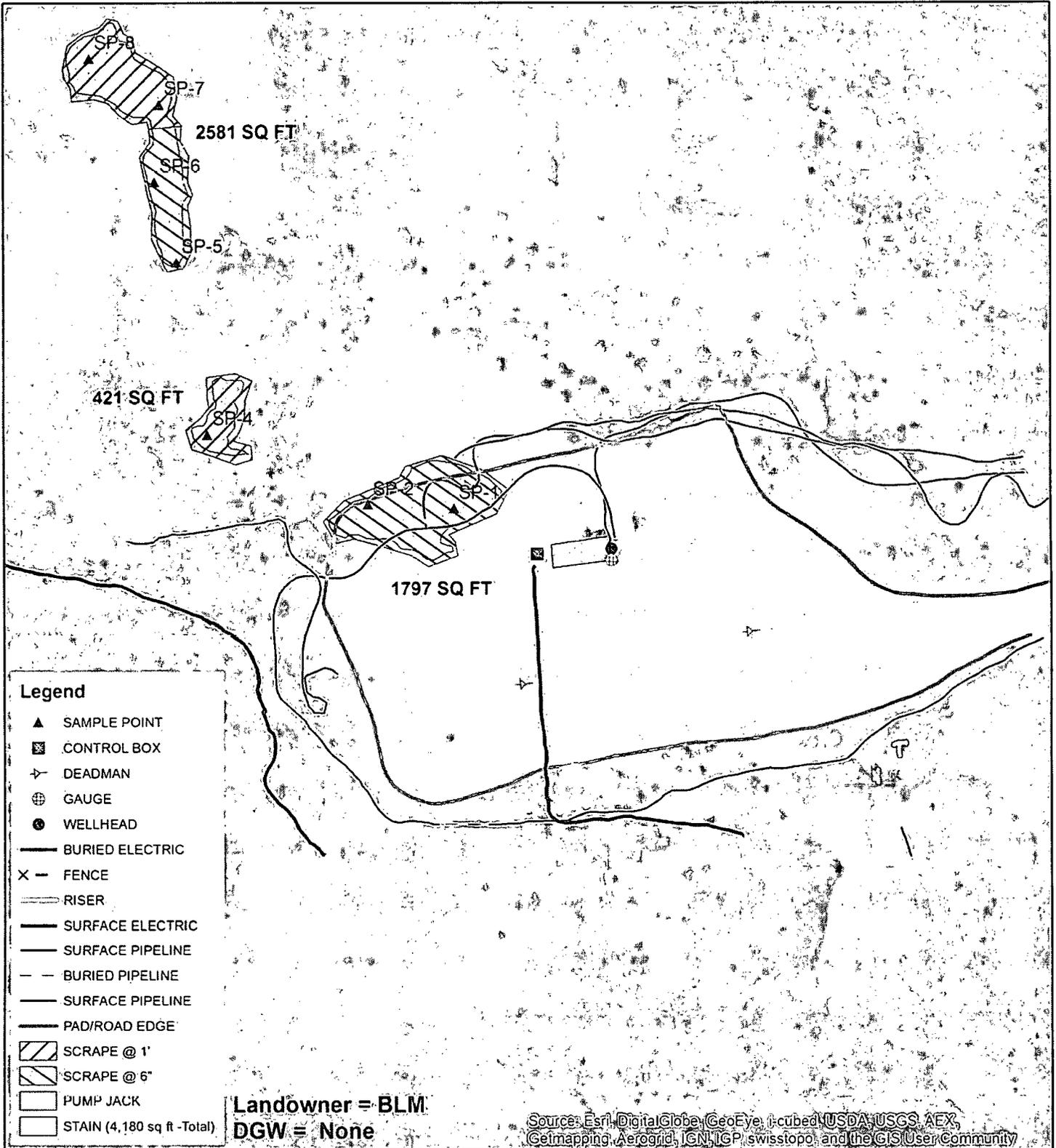
2RP-2032

LEGALS: UL/ D SEC. 4  
T17S - R31E  
EDDY COUNTY, NM

**Figure 1**

GPS date: 2/18/14 BC, 2/24/14 KS  
Drawing date: 2/25/2014  
Drafted by: L. Weinheimer, T. Grieco

# Proposed Corrective Actions



## LINN H.E. WEST B FEDERAL #083

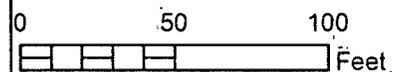
2RP-2032

LEGALS: UL/ D SEC. 4

T17S - R31E

EDDY COUNTY, NM

## Figure 2



GPS date: 2/18/14 BC, 2/24/14 KS  
Drawing date: 2/25/2014  
Drafted by: L. Weinheimer, T. Grieco

# Appendix A

Initial C-141

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

Form C-141  
Revised August 8, 2011  
Copy to appropriate District Office in accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

*njm 1330436821*

Name of Company: <i>Linn Energy</i>	OPERATOR: <input checked="" type="checkbox"/> Initial Report <input type="checkbox"/> Final Report
Address: <i>2130 W. Bender Blvd., Hobbs, NM 88240</i>	Contact: <i>Brian Wall</i>
Facility Name: <i>H.E. West B #83</i>	Telephone No.: <i>(806) 367-0645</i>
Facility Type: <i>Unknown</i>	Facility Type: <i>Unknown</i>
Surface Owner: <i>BLM</i>	Mineral Owner: <i>API No. 3001528483</i>

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
<i>D</i>	<i>4</i>	<i>17S</i>	<i>31E</i>	<i>1143</i>	<i>PNL</i>	<i>1263</i>	<i>EWL</i>	<i>Eddy</i>
Latitude: <i>32°52'3.417"N</i>				Longitude: <i>103°52'45.861"W</i>				

**NATURE OF RELEASE**

Type of Release: <i>Oil</i>	Volume of Release: <i>12 bbls</i>	Volume Recovered: <i>0 bbls</i>
Source of Release: <i>Unknown</i>	Date and Hour of Occurrence: <i>Unknown</i>	Date and Hour of Discovery: <i>Unknown</i>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES: To Whom?	
By Whom?	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:  
A total of 4,980 sq ft of lease pad and pasture land was affected by the release of 12 bbls of oil. On August 1, 2013, personnel were on site to assess the release.

Describe Area Affected and Cleanup Action Taken:  
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 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>Fred B. Wall</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <i>Brian Wall</i>	Approved by Environmental Specialist By: <i>M. L. Berman</i>	
Title: <i>Construction Foreman II</i>	Approval Date: <i>OCT 31 2013</i>	Expiration Date:
E-mail Address: <i>BWall@linenergy.com</i>	Conditions of Approval: Remediation per OCD Rule & Guidelines, & like approval by BLM: <b>SUBMIT REMEDIATION</b>	Attached: <input type="checkbox"/>
Date:	Phone: <i>(806) 367-0645</i>	

\* Attach Additional Sheets, if Necessary

PROPOSAL NO LATER THAN:  
*November 30, 2013*

*2RP-2032*

# Appendix B

## Initial Sampling Labs

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

August 12, 2013

GARY WINK  
LINN ENERGY  
RR1, BOX 24 B  
KINGFISHER, OK 73750

RE: H. E. WEST B #83

Enclosed are the results of analyses for samples received by the laboratory on 08/06/13 16:05.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

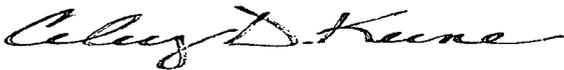
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/01/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 1 @ SURFACE (H301837-01)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.150	0.150	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<0.300	0.300	08/09/2013	ND						

Surrogate: Dibromofluoromethane 101 % 61.3-142

Surrogate: Toluene-d8 95.1 % 71.3-129

Surrogate: 4-Bromofluorobenzene 99.2 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1250	16.0	08/08/2013	ND	416	104	400	0.00		

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	08/09/2013	ND	184	92.1	200	8.72		
DRO >C10-C28	125	10.0	08/09/2013	ND	190	95.0	200	11.6		

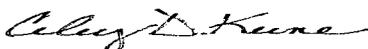
Surrogate: 1-Chlorooctane 94.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 115 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/01/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 1 @ 4' (H301837-02)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.150	0.150	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<0.300	0.300	08/09/2013	ND						

Surrogate: Dibromofluoromethane 99.7 % 61.3-142

Surrogate: Toluene-d8 94.5 % 71.3-129

Surrogate: 4-Bromofluorobenzene 96.0 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	08/08/2013	ND	416	104	400	0.00		

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	08/09/2013	ND	184	92.1	200	8.72		
DRO >C10-C28	<10.0	10.0	08/09/2013	ND	190	95.0	200	11.6		

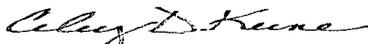
Surrogate: 1-Chlorooctane 98.9 % 65.2-140

Surrogate: 1-Chloroocadecane 120 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
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 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/01/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 2 @ SURFACE (H301837-03)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<b>0.285</b>	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<b>0.408</b>	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<b>0.834</b>	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
<b>Total BTEX</b>	<b>1.53</b>	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 99.5 % 61.3-142

Surrogate: Toluene-d8 95.3 % 71.3-129

Surrogate: 4-Bromofluorobenzene 103 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1100</b>	16.0	08/08/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/09/2013	ND	184	92.1	200	8.72			
<b>DRO &gt;C10-C28</b>	<b>13500</b>	100	08/09/2013	ND	190	95.0	200	11.6			

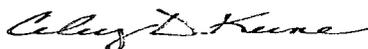
Surrogate: 1-Chlorooctane 91.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 360 % 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:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/02/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 2 @ 5' (H301837-04)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 98.0 % 61.3-142

Surrogate: Toluene-d8 95.4 % 71.3-129

Surrogate: 4-Bromofluorobenzene 118 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	08/08/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<200	200	08/09/2013	ND	184	92.1	200	8.72			
DRO >C10-C28	7600	200	08/09/2013	ND	190	95.0	200	11.6			

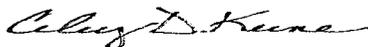
Surrogate: 1-Chlorooctane 97.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 253 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 08/06/2013  
 Reported: 08/12/2013  
 Project Name: H. E. WEST B #83  
 Project Number: NONE GIVEN  
 Project Location: MALJAMAR, NM

 Sampling Date: 08/02/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 3 @ SURFACE (H301837-05)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 101 % 61.3-142

Surrogate: Toluene-d8 94.7 % 71.3-129

Surrogate: 4-Bromofluorobenzene 103 % 65.7-141

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	08/08/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/09/2013	ND	184	92.1	200	8.72			
DRO >C10-C28	5510	100	08/09/2013	ND	190	95.0	200	11.6			

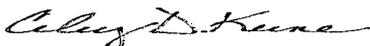
Surrogate: 1-Chlorooctane 92.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 227 % 63.6-154

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/02/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 3 @ 2' (H301837-06)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 98.2 % 61.3-142

Surrogate: Toluene-d8 96.9 % 71.3-129

Surrogate: 4-Bromofluorobenzene 106 % 65.7-141

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	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/09/2013	ND	184	92.1	200	8.72			
<b>DRO &gt;C10-C28</b>	<b>2450</b>	100	08/09/2013	ND	190	95.0	200	11.6			

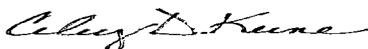
Surrogate: 1-Chlorooctane 92.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 170 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/02/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 4 @ SURFACE (H301837-07)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 97.4 % 61.3-142

Surrogate: Toluene-d8 97.2 % 71.3-129

Surrogate: 4-Bromofluorobenzene 120 % 65.7-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/09/2013	ND	184	92.1	200	8.72			
DRO >C10-C28	7210	100	08/09/2013	ND	190	95.0	200	11.6			

Surrogate: 1-Chlorooctane 109 % 65.2-140

Surrogate: 1-Chlorooctadecane 243 % 63.6-154

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/02/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 4 @ 2' (H301837-08)**

BTEX 8260B		mg/kg		Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 98.3 % 61.3-142

Surrogate: Toluene-d8 95.1 % 71.3-129

Surrogate: 4-Bromofluorobenzene 142 % 65.7-141

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	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<100	100	08/09/2013	ND	191	95.5	200	0.596		
<b>DRO &gt;C10-C28</b>	<b>3320</b>	100	08/09/2013	ND	204	102	200	0.0598		

Surrogate: 1-Chlorooctane 107 % 65.2-140

Surrogate: 1-Chlorooctadecane 181 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/02/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 5 @ SURFACE (H301837-09)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.150	0.150	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<0.300	0.300	08/09/2013	ND						

*Surrogate: Dibromofluoromethane* 97.5 % 61.3-142

*Surrogate: Toluene-d8* 96.0 % 71.3-129

*Surrogate: 4-Bromofluorobenzene* 98.5 % 65.7-141

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	08/09/2013	ND	416	104	400	0.00		

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	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

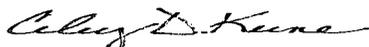
*Surrogate: 1-Chlorooctane* 99.3 % 65.2-140

*Surrogate: 1-Chlorooctadecane* 121 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/02/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 5 @ 2' (H301837-10)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.050	0.050	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.150	0.150	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<0.300	0.300	08/09/2013	ND						

Surrogate: Dibromofluoromethane 99.4 % 61.3-142

Surrogate: Toluene-d8 95.5 % 71.3-129

Surrogate: 4-Bromofluorobenzene 98.1 % 65.7-141

Chloride, SM4500CI-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	08/09/2013	ND	416	104	400	0.00		

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	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	<10.0	10.0	08/10/2013	ND	189	94.4	200	3.98		

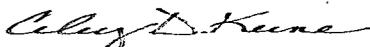
Surrogate: 1-Chlorooctane 97.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 120 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 08/06/2013  
 Reported: 08/12/2013  
 Project Name: H. E. WEST B #83  
 Project Number: NONE GIVEN  
 Project Location: MALJAMAR, NM

 Sampling Date: 08/02/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 6 @ SURFACE (H301837-11)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

*Surrogate: Dibromofluoromethane* 99.8 % 61.3-142

*Surrogate: Toluene-d8* 96.0 % 71.3-129

*Surrogate: 4-Bromofluorobenzene* 97.8 % 65.7-141

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	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/10/2013	ND	183	91.3	200	3.63			
<b>DRO &gt;C10-C28</b>	<b>2160</b>	100	08/10/2013	ND	189	94.4	200	3.98			

*Surrogate: 1-Chlorooctane* 91.6 % 65.2-140

*Surrogate: 1-Chlorooctadecane* 213 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 08/06/2013  
 Reported: 08/12/2013  
 Project Name: H. E. WEST B #83  
 Project Number: NONE GIVEN  
 Project Location: MALJAMAR, NM

 Sampling Date: 08/02/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 6 @ 2' (H301837-12)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 98.6 % 61.3-142

Surrogate: Toluene-d8 95.8 % 71.3-129

Surrogate: 4-Bromofluorobenzene 99.1 % 65.7-141

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	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/10/2013	ND	183	91.3	200	3.63			
<b>DRO &gt;C10-C28</b>	<b>681</b>	100	08/10/2013	ND	189	94.4	200	3.98			

Surrogate: 1-Chlorooctane 95.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 180 % 63.6-154

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 08/06/2013  
 Reported: 08/12/2013  
 Project Name: H. E. WEST B #83  
 Project Number: NONE GIVEN  
 Project Location: MALJAMAR, NM

 Sampling Date: 08/02/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 7 @ SURFACE (H301837-13)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

*Surrogate: Dibromofluoromethane* 97.2 % 61.3-142

*Surrogate: Toluene-d8* 97.2 % 71.3-129

*Surrogate: 4-Bromofluorobenzene* 99.4 % 65.7-141

Chloride, SM4500CI-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	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10	<100	100	08/10/2013	ND	183	91.3	200	3.63			
<b>DRO &gt;C10-C28</b>	<b>5880</b>	100	08/10/2013	ND	189	94.4	200	3.98			

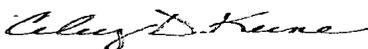
*Surrogate: 1-Chlorooctane* 87.7 % 65.2-140

*Surrogate: 1-Chlorooctadecane* 282 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 08/06/2013  
 Reported: 08/12/2013  
 Project Name: H. E. WEST B #83  
 Project Number: NONE GIVEN  
 Project Location: MALJAMAR, NM

 Sampling Date: 08/02/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 7 @ 2' (H301837-14)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	08/09/2013	ND	2.36	118	2.00	1.28		
Toluene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.44		
Ethylbenzene*	<0.200	0.200	08/09/2013	ND	2.18	109	2.00	1.12		
Total Xylenes*	<0.600	0.600	08/09/2013	ND	6.44	107	6.00	1.13		
Total BTEX	<1.20	1.20	08/09/2013	ND						

Surrogate: Dibromofluoromethane 97.9 % 61.3-142

Surrogate: Toluene-d8 96.1 % 71.3-129

Surrogate: 4-Bromofluorobenzene 99.7 % 65.7-141

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	08/09/2013	ND	416	104	400	0.00		

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	08/10/2013	ND	183	91.3	200	3.63		
DRO >C10-C28	405	10.0	08/10/2013	ND	189	94.4	200	3.98		

Surrogate: 1-Chlorooctane 98.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 128 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 08/06/2013  
 Reported: 08/12/2013  
 Project Name: H. E. WEST B #83  
 Project Number: NONE GIVEN  
 Project Location: MALJAMAR, NM

 Sampling Date: 08/02/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 8 @ SURFACE (H301837-15)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/10/2013	ND	2.17	108	2.00	3.04		
<b>Toluene*</b>	<b>0.139</b>	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
<b>Ethylbenzene*</b>	<b>0.167</b>	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
<b>Total Xylenes*</b>	<b>0.319</b>	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
<b>Total BTEX</b>	<b>0.625</b>	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 97.8 % 61.3-142

Surrogate: Toluene-d8 94.1 % 71.3-129

Surrogate: 4-Bromofluorobenzene 98.7 % 65.7-141

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	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	08/10/2013	ND	183	91.3	200	3.63		
<b>DRO &gt;C10-C28</b>	<b>224</b>	50.0	08/10/2013	ND	189	94.4	200	3.98		

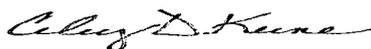
Surrogate: 1-Chlorooctane 93.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 129 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 LINN ENERGY  
 GARY WINK  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	08/06/2013	Sampling Date:	08/02/2013
Reported:	08/12/2013	Sampling Type:	Soil
Project Name:	H. E. WEST B #83	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	MALJAMAR, NM		

**Sample ID: SP 8 @ 2' (H301837-16)**

BTEX 8260B		mg/kg		Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/10/2013	ND	2.17	108	2.00	3.04		
Toluene*	<b>0.108</b>	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03		
Ethylbenzene*	<b>0.316</b>	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23		
Total Xylenes*	<b>0.416</b>	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41		
<b>Total BTEX</b>	<b>0.840</b>	0.300	08/10/2013	ND						

Surrogate: Dibromofluoromethane 99.6 % 61.3-142

Surrogate: Toluene-d8 95.0 % 71.3-129

Surrogate: 4-Bromofluorobenzene 162 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/09/2013	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	08/10/2013	ND	183	91.3	200	3.63		
<b>DRO &gt;C10-C28</b>	<b>2750</b>	50.0	08/10/2013	ND	189	94.4	200	3.98		

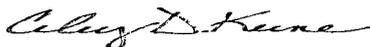
Surrogate: 1-Chlorooctane 105 % 65.2-140

Surrogate: 1-Chlorooctadecane 168 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

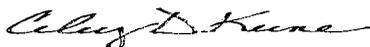
- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED 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





March 05, 2014

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: H. E. WEST B FEDERAL #083

Enclosed are the results of analyses for samples received by the laboratory on 03/04/14 16:30.

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 [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:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	03/04/2014	Sampling Date:	03/04/2014
Reported:	03/05/2014	Sampling Type:	Soil
Project Name:	H. E. WEST B FEDERAL #083	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LINN ENERGY		

**Sample ID: POINT 1 @ 1' (H400660-01)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/05/2014	ND	2.24	112	2.00	0.979		
Toluene*	<0.050	0.050	03/05/2014	ND	2.33	117	2.00	0.332		
Ethylbenzene*	<0.050	0.050	03/05/2014	ND	2.28	114	2.00	2.39		
Total Xylenes*	<0.150	0.150	03/05/2014	ND	6.91	115	6.00	1.92		
Total BTEX	<0.300	0.300	03/05/2014	ND						

Surrogate: Dibromofluoromethane 97.0 % 61.3-142

Surrogate: Toluene-d8 102 % 71.3-129

Surrogate: 4-Bromofluorobenzene 100 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	896	16.0	03/05/2014	ND	416	104	400	3.92		

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	03/05/2014	ND	208	104	200	7.01		
DRO >C10-C28	26.4	10.0	03/05/2014	ND	204	102	200	6.86		

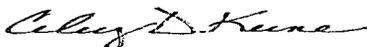
Surrogate: 1-Chlorooctane 103 % 65.2-140

Surrogate: 1-Chlorooctadecane 108 % 63.6-154

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	03/04/2014	Sampling Date:	03/04/2014
Reported:	03/05/2014	Sampling Type:	Soil
Project Name:	H. E. WEST B FEDERAL #083	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LINN ENERGY		

**Sample ID: POINT 1 @ 1.5' (H400660-02)**

BTEX 8260B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/05/2014	ND	2.24	112	2.00	0.979		
Toluene*	<0.050	0.050	03/05/2014	ND	2.33	117	2.00	0.332		
Ethylbenzene*	<0.050	0.050	03/05/2014	ND	2.28	114	2.00	2.39		
Total Xylenes*	<0.150	0.150	03/05/2014	ND	6.91	115	6.00	1.92		
Total BTEX	<0.300	0.300	03/05/2014	ND						

Surrogate: Dibromofluoromethane 97.1 % 61.3-142

Surrogate: Toluene-d8 103 % 71.3-129

Surrogate: 4-Bromofluorobenzene 102 % 65.7-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	784	16.0	03/05/2014	ND	416	104	400	3.92		

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	03/05/2014	ND	208	104	200	7.01		
DRO >C10-C28	<10.0	10.0	03/05/2014	ND	204	102	200	6.86		

Surrogate: 1-Chlorooctane 101 % 65.2-140

Surrogate: 1-Chlorooctadecane 102 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	03/04/2014	Sampling Date:	03/04/2014
Reported:	03/05/2014	Sampling Type:	Soil
Project Name:	H. E. WEST B FEDERAL #083	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LINN ENERGY		

**Sample ID: POINT 2 @ 6" (H400660-03)**

BTEX 8260B		mg/kg		Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.100	0.100	03/05/2014	ND	2.24	112	2.00	0.979		
Toluene*	<0.100	0.100	03/05/2014	ND	2.33	117	2.00	0.332		
Ethylbenzene*	<0.100	0.100	03/05/2014	ND	2.28	114	2.00	2.39		
Total Xylenes*	<0.300	0.300	03/05/2014	ND	6.91	115	6.00	1.92		
Total BTEX	<0.600	0.600	03/05/2014	ND						

Surrogate: Dibromofluoromethane 99.3 % 61.3-142

Surrogate: Toluene-d8 103 % 71.3-129

Surrogate: 4-Bromofluorobenzene 187 % 65.7-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	639	16.0	03/05/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<100	100	03/05/2014	ND	208	104	200	7.01		
DRO >C10-C28	3830	100	03/05/2014	ND	204	102	200	6.86		

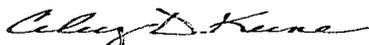
Surrogate: 1-Chlorooctane 83.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 192 % 63.6-154

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RICE ENVIRONMENTAL CONSULTING & SAFETY  
 JACOB KAMPLAIN  
 419 W. CAIN  
 HOBBS NM, 88240  
 Fax To: (575) 397-1471

Received:	03/04/2014	Sampling Date:	03/04/2014
Reported:	03/05/2014	Sampling Type:	Soil
Project Name:	H. E. WEST B FEDERAL #083	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LINN ENERGY		

**Sample ID: POINT 2 @ 1' (H400660-04)**

BTEX 8260B	mg/kg		Analyzed By: MS				S-04			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	03/05/2014	ND	2.24	112	2.00	0.979		
Toluene*	<0.200	0.200	03/05/2014	ND	2.33	117	2.00	0.332		
Ethylbenzene*	<0.200	0.200	03/05/2014	ND	2.28	114	2.00	2.39		
Total Xylenes*	<0.600	0.600	03/05/2014	ND	6.91	115	6.00	1.92		
Total BTEX	<1.20	1.20	03/05/2014	ND						

Surrogate: Dibromofluoromethane 99.0 % 61.3-142

Surrogate: Toluene-d8 99.5 % 71.3-129

Surrogate: 4-Bromofluorobenzene 171 % 65.7-141

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	03/05/2014	ND	416	104	400	3.92		

TPH 8015M	mg/kg		Analyzed By: ms				S-06			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	106	100	03/05/2014	ND	208	104	200	7.01		
DRO >C10-C28	4680	100	03/05/2014	ND	204	102	200	6.86		

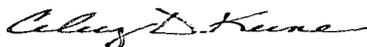
Surrogate: 1-Chlorooctane 135 % 65.2-140

Surrogate: 1-Chlorooctadecane 301 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

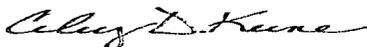
- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED 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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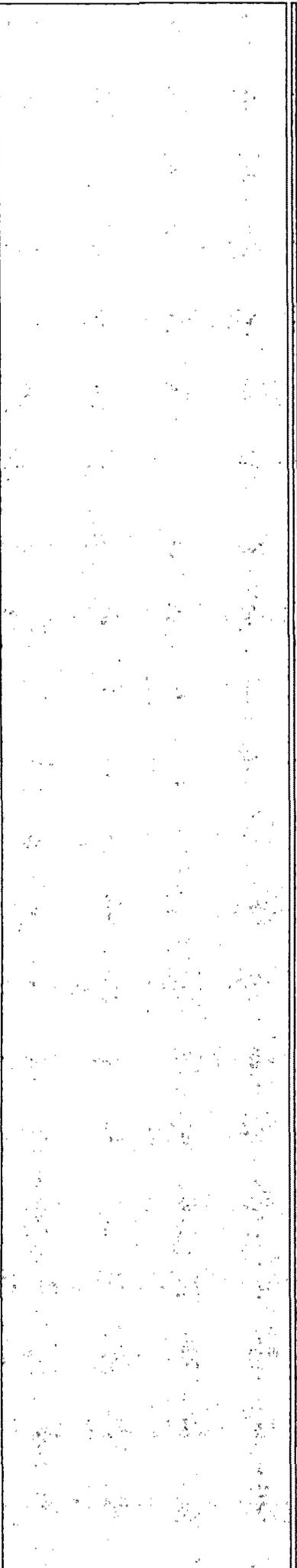
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived 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.



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Celely D. Keene, Lab Director/Quality Manager





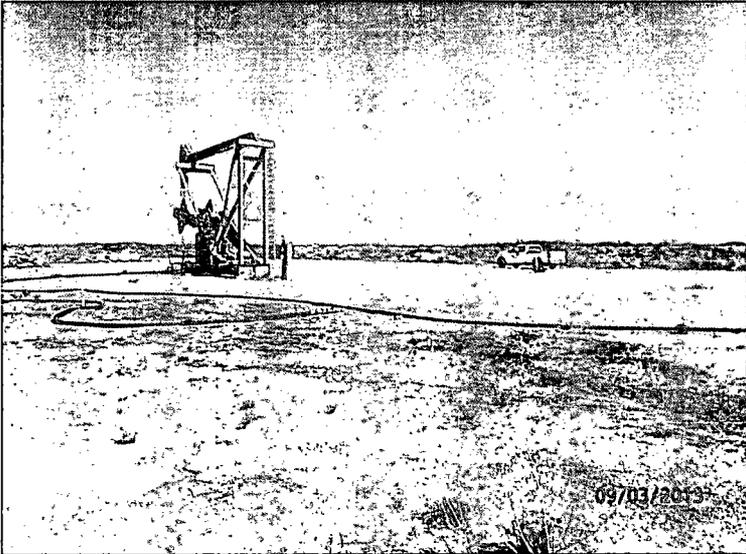
# Appendix C

Photo Documentation

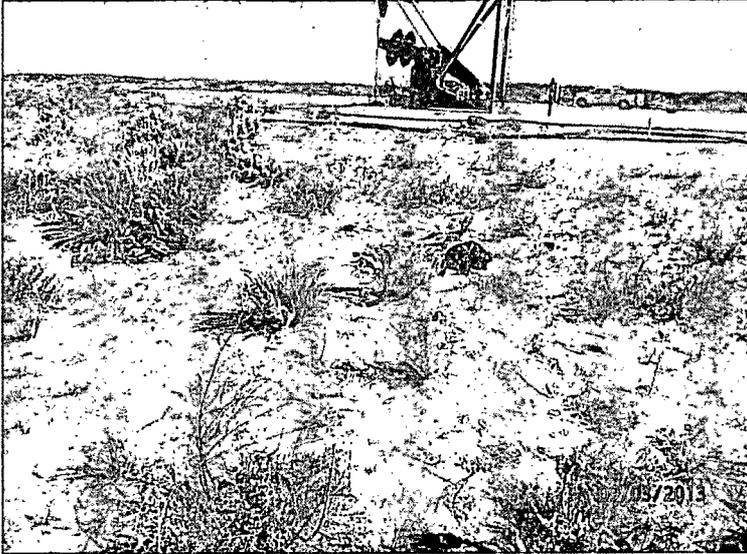
**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967

# Linn H.E. West B Federal #83

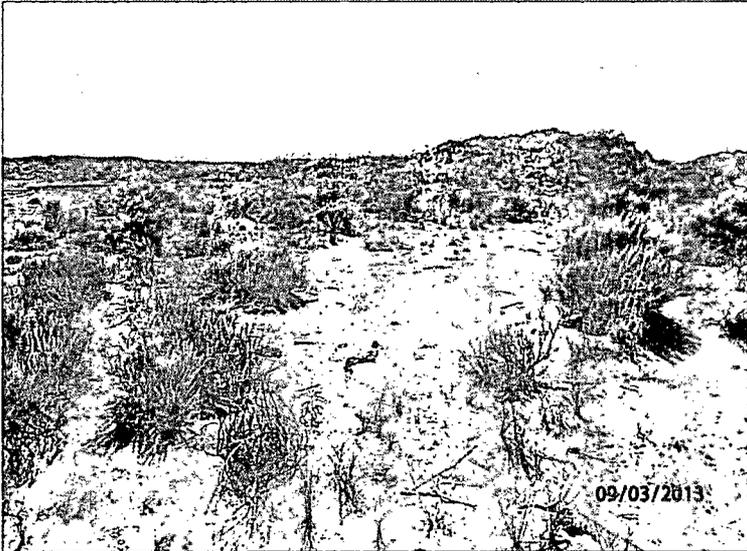
Unit Letter D, Section 4, T17S, R31E



Initial site photo, facing east 9/3/13



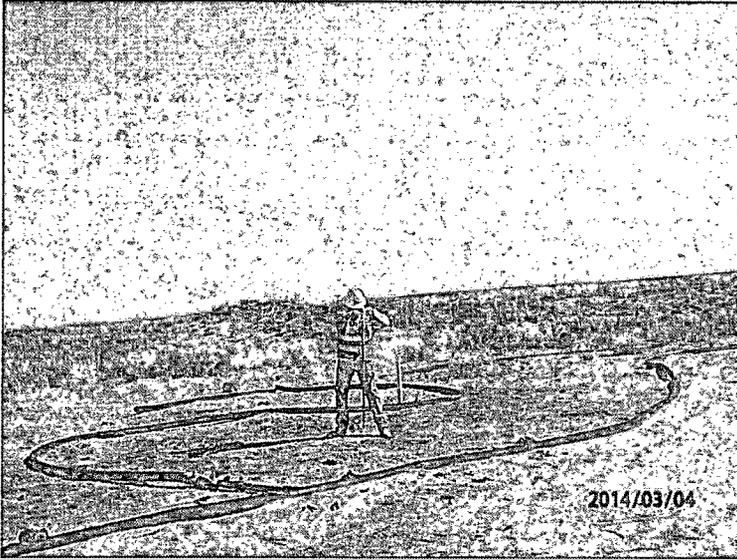
Initial site photo, facing south 9/3/13



Initial site photo, facing northwest 9/3/13



Initial site photo, facing south 9/3/13



Hand auguring for depth, facing northeast 3/4/14