

J.L. Keel B #91

CLOSURE REPORT

2RP-1294

API No. 30-015-28442

Release Date: August 24, 2012

Unit Letter G, Section 8, Township 17 South, Range 31 East

NM BLM Event #NU12194TG

July 31, 2013

Prepared by:

Diversified Field Service, Inc.
Environmental Department
315 S. Leech St.
Hobbs, NM 88240
Phone: (575)397-6437
Fax: (575)393-2981

Table of Contents

1 Introduction

2 Site Activities

3 Conclusion

Figure – Site Diagram with Sample Data

APPENDICES

Appendix I – Initial Form C-141

Appendix II – Site Photographs

Appendix III – Groundwater Data

Appendix IV – Laboratory Analyses

Appendix V – Final Form C-141

J.L. Keel B #91

1 INTRODUCTION

Linn Energy (Linn) has retained Diversified Field Service, Inc. (DFSI) to address environmental issues for the site detailed herein.

The site is located west of Maljamar NM, in Eddy County. The site resulted from a produced water leak in a ruptured flow line transition at the well head. The line rupture released produced water and oil onto approximately 1,600 square feet of the well pad and 1,800 square feet of pasture land to the southwest of the pad. A vacuum truck recovered some standing fluids and the line was repaired. An initial form C-141 was submitted to the NMOCD on September 7, 2012 (Appendix I).

2 SITE ACTIVITIES

On June 17, 2013, DFSI personnel collected surface soil samples from the site (Figure). The samples were field screened for chloride and showed elevated levels in all but 3 of the sample points. The samples were submitted to a commercial laboratory for chloride, TPH, and BTEX analyses (Appendix IV).

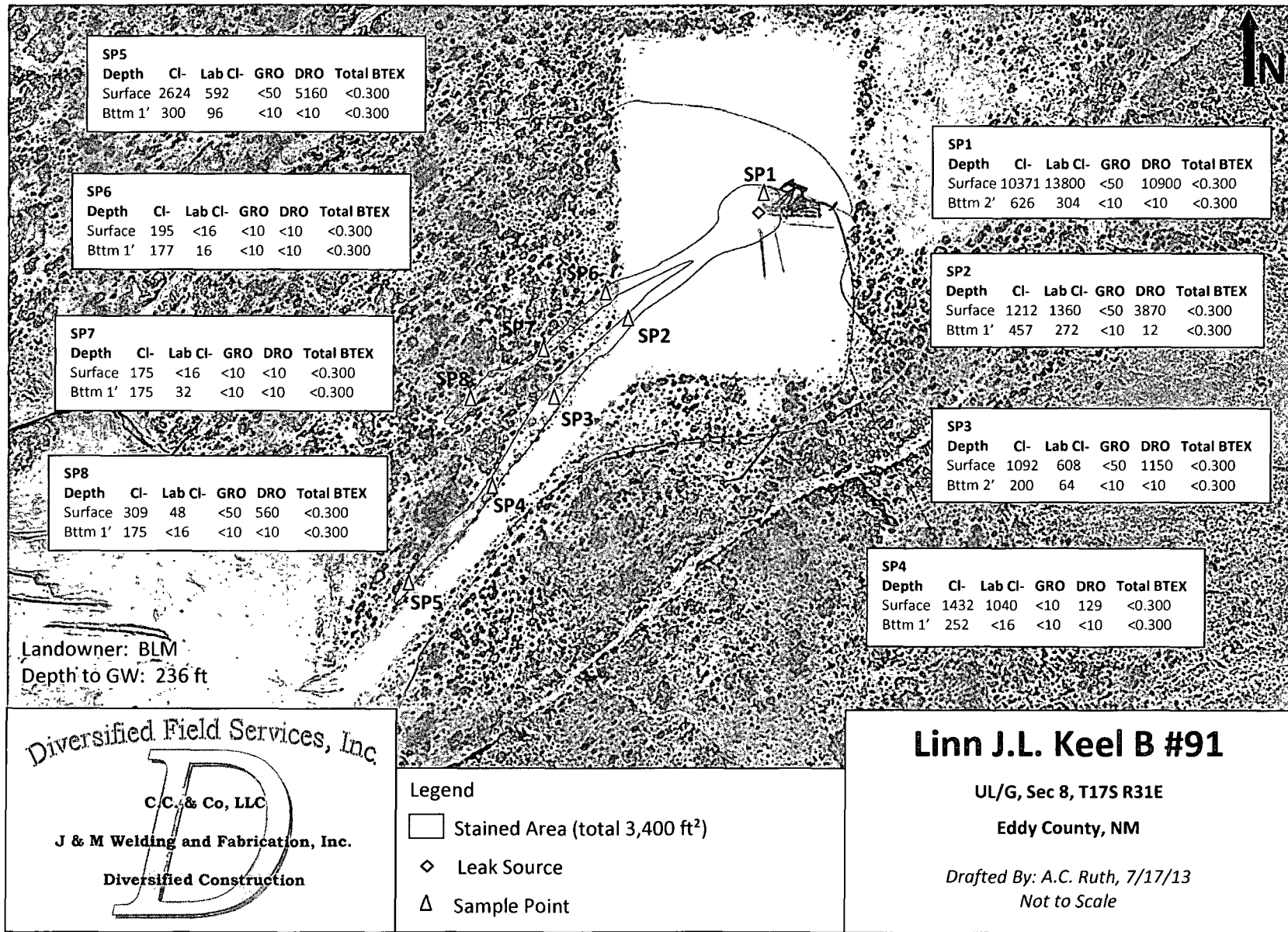
Visually impacted soils were excavated throughout the entire leak area and removed to a NMOCD approved disposal facility. Simultaneous soil field testing revealed low chloride and hydrocarbon levels at 1 to 2 ft. below ground surface (bgs) (Figure). Soil samples were collected from the excavation floor and submitted to a laboratory for confirmation (Appendix IV). Chloride remained at 626 mg/kg at 2 ft. bgs near the well head on the pad. The second sample on the west end of the pad contained 457 mg/kg. All other samples were located in the pasture and contained 300 mg/kg chloride or lower. TPH totaled less than 10.0 mg/kg GRO and less than 10.0 mg/kg DRO, and BTEX totaled less than 0.300 mg/kg in all samples. Photographs of site activities can be viewed in Appendix II.

On July 18, 2013, DFSI submitted a backfill request to NMOCD and NM BLM. On July 23, 2013, NMOCD and BLM representatives approved backfill of the excavation. The excavated area on the well pad was backfilled with imported caliche and leveled. The pasture excavation was backfilled with imported topsoil and the site was contoured to the surrounding landscape. On August 1, 2013, the site was seeded with 50 lbs. of Lesser Prairie Chicken seed mix per BLM requirements.

3 CONCLUSION

According to the U.S. Geological Survey and the NM Office of the State Engineer, depth to groundwater in the area averages greater than 263 ft. bgs (Appendix III). Based on the removal of soils containing elevated chloride and visual staining at the site, DFSI, on behalf of Linn, submits the final form C-141 (Appendix V) and respectfully requests the closure of the regulatory file for the site.

FIGURE: Site Diagram with Sample Data



Appendix I

INITIAL FORM C-141

Diversified Field Service, Inc.
315 S. Leech St.
Hobbs, NM 88240
(575) 397-6437

District I
1625 N French Dr., Hobbs, NM 88240
District II
1301 W Grand Avenue, 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

RECEIVED

SEP 07 2012

Form C-141
Revised October 10, 2003

NMOCD ARTESIA
This report must be filed with the appropriate District Office in accordance with 19.15.29 NMAC

Release Notification and Corrective Action

nJMW1225751991

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Linn Operating 296324	Contact: Joe Hernandez
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No.: 575-738-1739
Facility Name: JL Keel B # 91	Facility Type: Oil

Surface Owner: Federal	Mineral Owner: Federal	API No.: 3001528442
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	8	17S	31E	2664	South	2562	East	Eddy

Latitude: 32.84917 Longitude: -103.89088

NATURE OF RELEASE

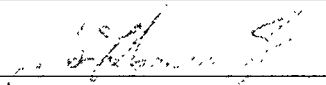
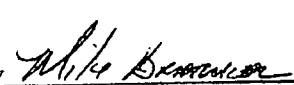
Type of Release: Produced Water / Oil	Volume of Release: 10 / 5	Volume Recovered: 0 / 0
Source of Release: Poly Pipeline	Date and Hour of Occurrence: 08/24/2012 11am	Date and Hour of Discovery: 08/24/2012 11:30am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? M. Bratcher-NM OCD Terry Gregston-BLM	
By Whom? Gary Wink	Date and Hour 08/29/2012 8am	
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.*: While attempting to flush flow, line pressured up to 250 lbs and the transition at well head ruptured. The pressurized fluid in the line sprayed out and onto the pad.

Describe Area Affected and Cleanup Action Taken.*: The pad is sloped down to the south/west. The spill covered a 20'x20' area at well head and then split into two veins. One traveled along road and for a distance of 300'. The other traveled into pasture for 200'. A vacuum truck was on hand and arrived and picked up less than 1 BBL of oil. Due to the sandy nature of surface no other fluid could be recovered. Foreman Joe Hernandez was contacted and line was repaired. Total estimated fluid is 15 bbl 10 bbl water and 5 bbl oil. Etch and BLM have assessed the spill, further remedial action pending.

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: 	OIL CONSERVATION DIVISION	
Printed Name: Joe Hernandez	Approved by District Supervisor: Signed By 	
Title: Production Foreman	Approval Date: SEP 13 2012	Expiration Date:
E-mail Address: jhernandez@linenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 09/07/2012	Phone: 575-942-9492	

* Attach Additional Sheets If Necessary

Remediation per OCD Rules &
Guidelines. SUBMIT REMEDIATION
PROPOSAL NOT LATER THAN:
October 13, 2012

2RP-1294

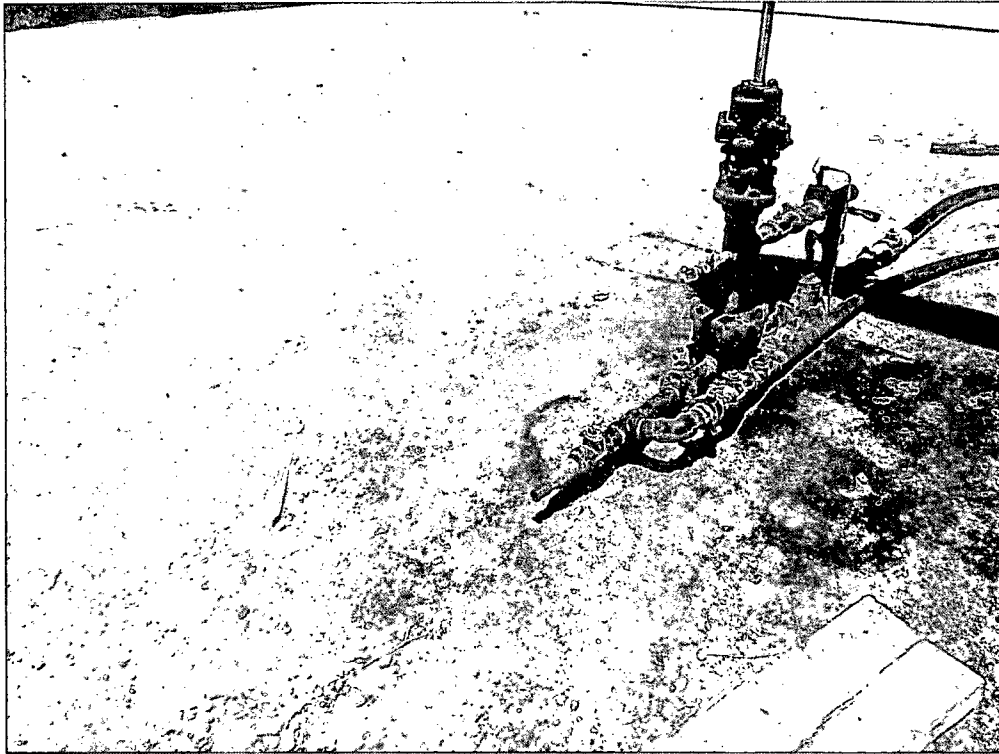
Appendix II

SITE PHOTOGRAPHS

Diversified Field Service, Inc.
315 S. Leech St.
Hobbs, NM 88240
(575) 397-6437

Linn Energy J.L. Keel B #91

Unit Letter G, Section 8, T17S R31E



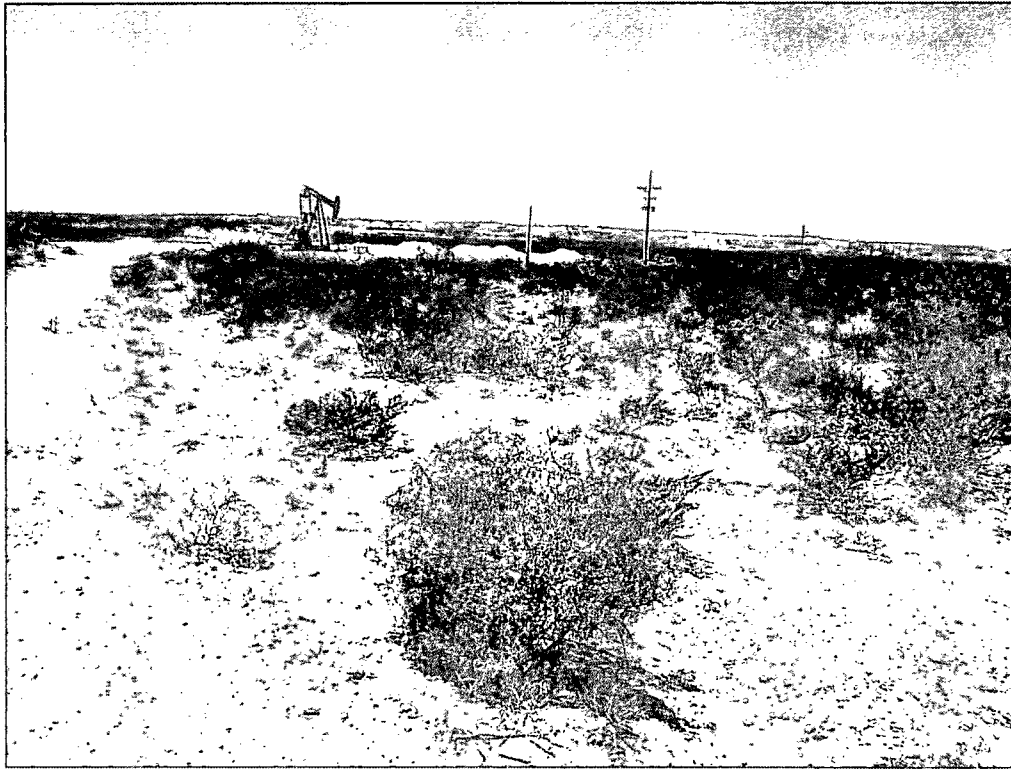
Initial leak, facing northeast

6/4/12



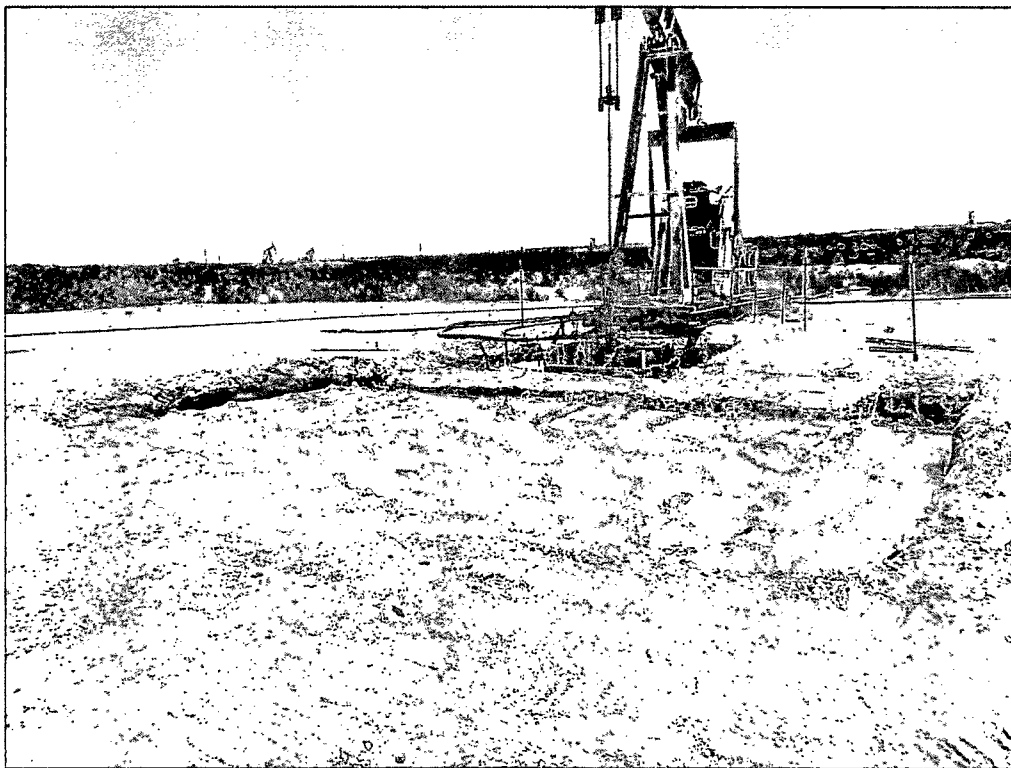
South leg of leak area at edge of pad, facing northeast

6/4/12



South leg of leak, near end, facing northwest

6/4/12



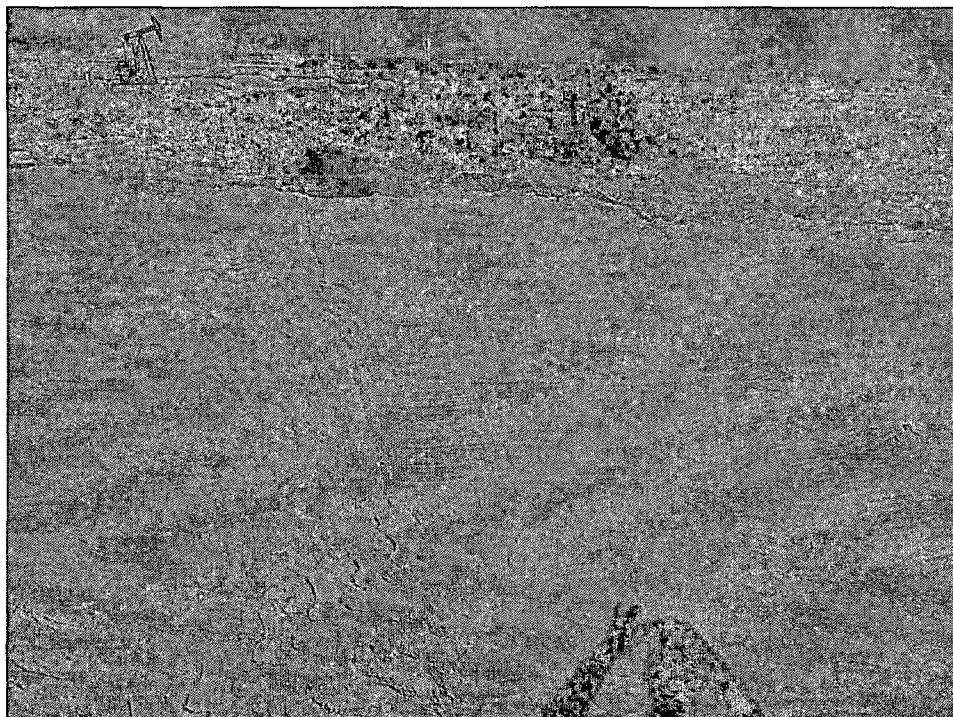
Excavation near well head, facing northeast

6/21/13



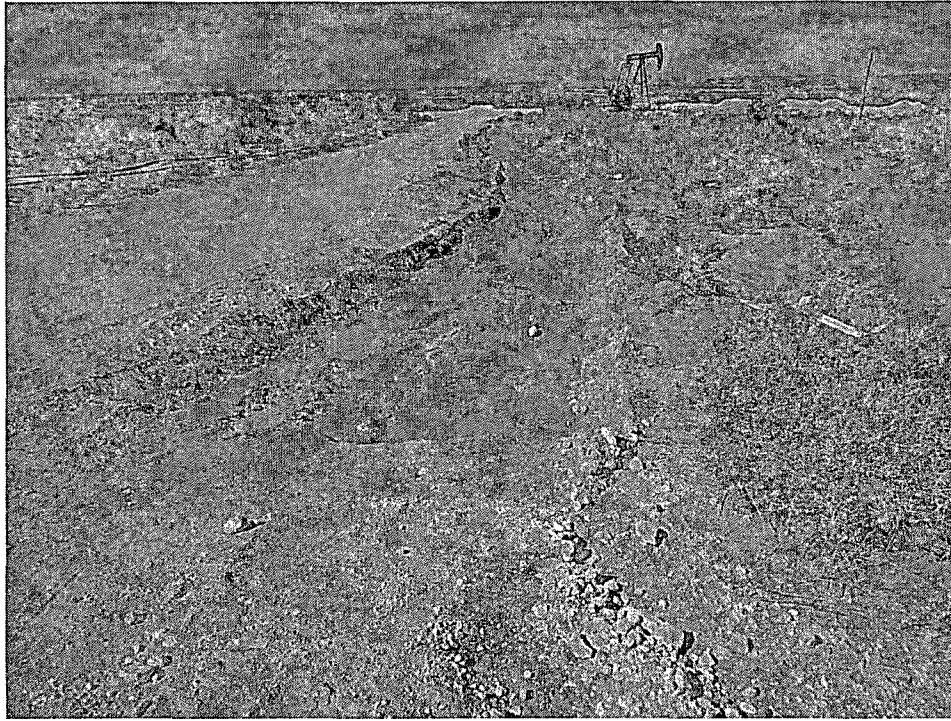
South leg of leak excavated, facing southwest

6/21/13

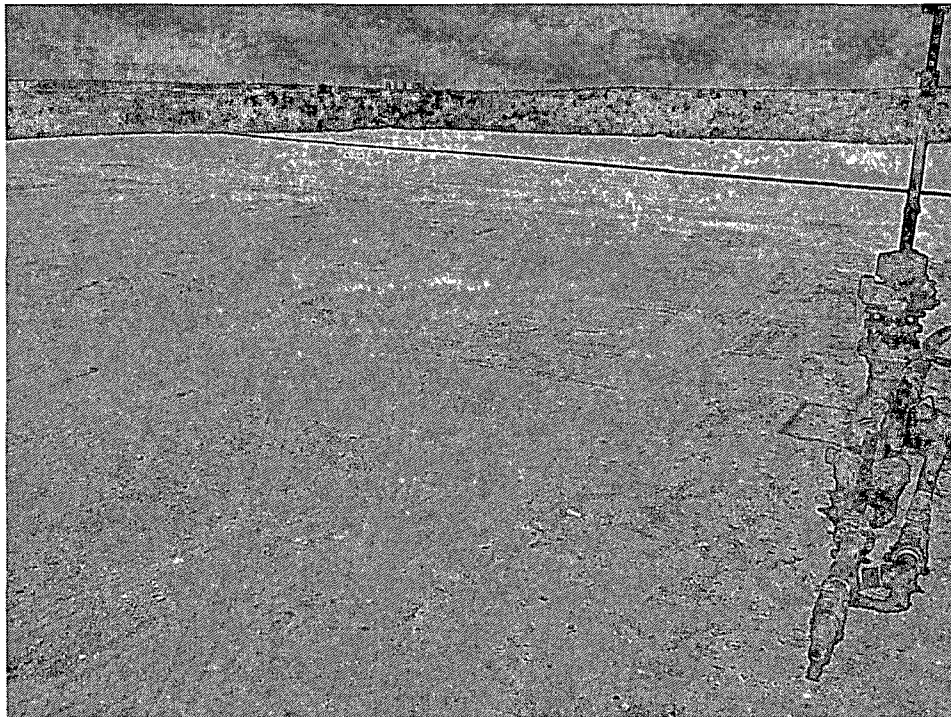


North leg of leak excavated, facing southwest

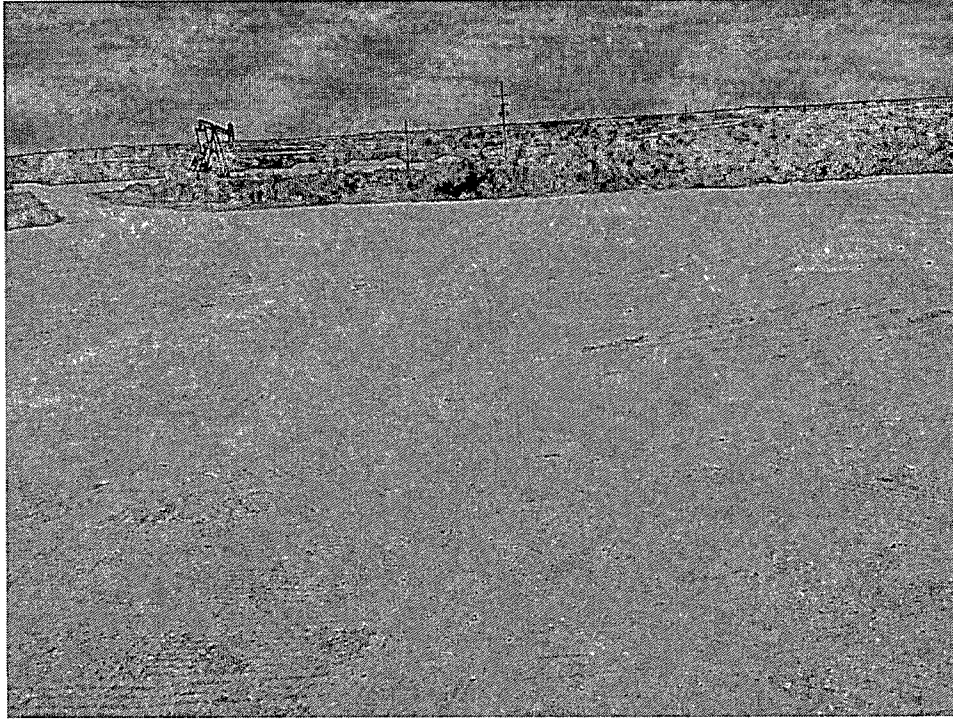
6/21/13



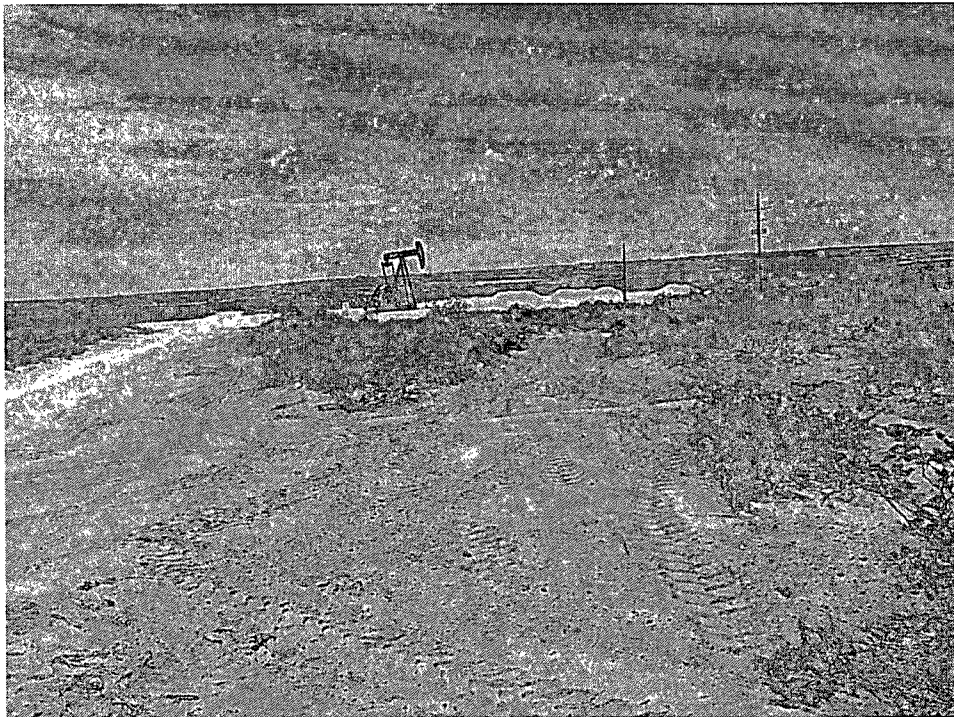
South leg (center), north leg (right) excavated in pasture, facing southwest 6/21/13



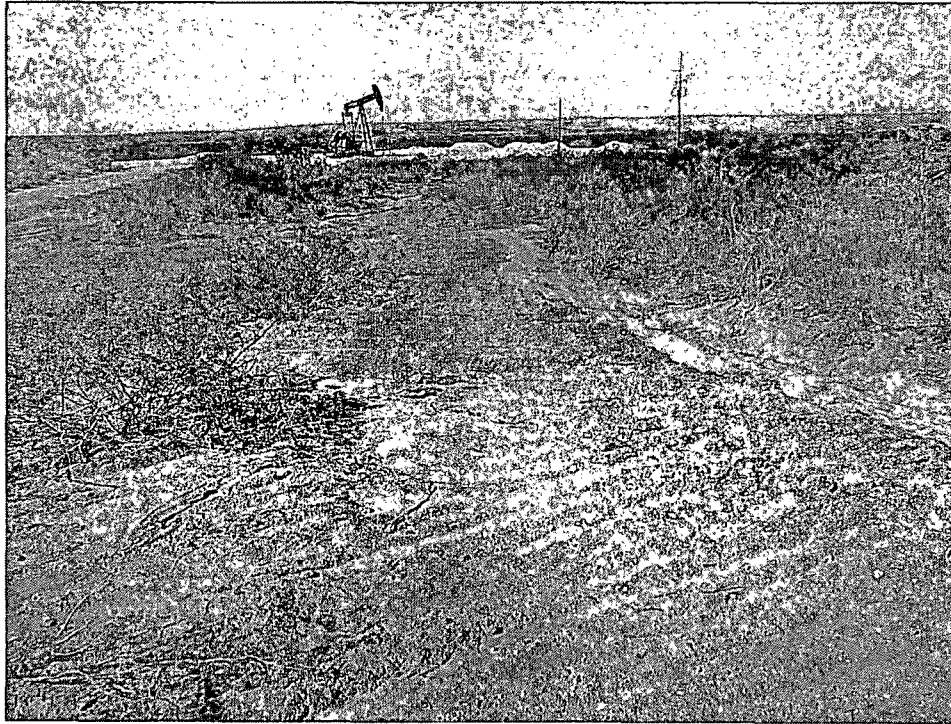
Pad backfilled, facing northwest 7/29/13



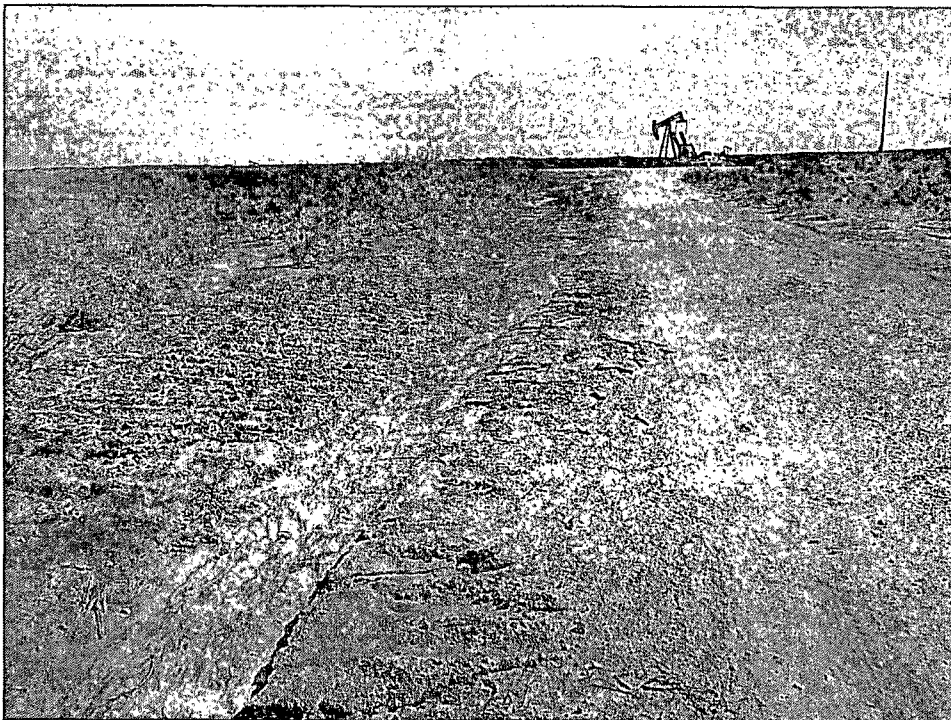
Pad backfilled, facing southwest 7/29/13



Pasture backfilled, facing southwest 7/29/13



Site seeded, facing southwest 8/15/13



Site seeded, facing northeast 8/15/13

Appendix III

GROUNDWATER DATA

GROUND WATER SEARCH

Linn Energy J.L. Keel B #91

UL: G Sec: 8 T: 17S R: 31E

Groundwater Depth: 236 ft.

- = NM Office of the State Engineer
- = U.S. Geological Survey (unknown well)
- ✕ = Site Location

Date: 8/22/13
By: Amy Ruth

	16S 30E	288' ● 314' ● 16S 31E ● 295'	65' 260' ● ● 265' ● 248' ● 275' 254' ● 16S 32E ● 215' ● 210' ● 210' ● 221' ● 200'	
	17S 30E	✕ 17S 31E	● 132' 17S 32E	
	18S 30E ● 44'	● 98' 18S 31E	● 65' ● 430' 18S 32E ● 460'	



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

No records found.

PLSS Search:

Township: 16S

Range: 30E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

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Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,

C=the file is (quarters are 1=NW 2=NE 3=SW 4=SE)
closed) (quarters are smallest to largest)

(NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 03435		L	LE	1	1	05	16S	31E		602954	3646955*			
L 03852	R	L	LE	2	2	2	14	16S	31E	609126	3643913*	370	314	56
L 03852 POD4		L	LE	3	4	3	13	16S	31E	609744	3642516*	333	299	34
L 03852 POD5		L	LE	3	2	13	16S	31E		610238	3643427*	328	295	33
L 03852 X	R	L	LE	4	4	4	13	16S	31E	610749	3642526*	333	299	34
L 03852 X2		L	LE	3	2	2	13	16S	31E	610535	3643733*	330	287	43
L 04671		L	LE	1	1	2	12	16S	31E	610114	3645538*	340	288	52
L 10203		L	LE	4	4	3	14	16S	31E	608334	3642495*	310		
L 10206		L	LE	2	2	23	16S	31E		609045	3642204*	280		

Average Depth to Water: **297 feet**

Minimum Depth: **287 feet**

Maximum Depth: **314 feet**

Record Count: 9

PLSS Search:

Township: 16S

Range: 31E

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

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(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 02381	L	LE		3	1	13	16S	32E		619086	3643515*	308	215	93
L 02434	L	LE				01	16S	32E		619661	3646531*	337		
L 02449	L	LE				01	16S	32E		619661	3646531*	330	265	65
L 02617	L	LE		4	4	02	16S	32E		618656	3645924*	322	270	52
L 02752	L	LE		1	3	26	16S	32E		617521	3639880*	324	280	44
L 02846	L	LE		4	2	11	16S	32E		617956	3645413*	328	275	53
L 02954	L	LE		2	4	03	16S	32E		617043	3646310*	120	65	55
L 02993	L	LE		3	3	215	16S	32E		616572	3643391*	100		
L 03631	L	LE		1	2	02	16S	32E		618240	3647126*	315	250	65
L 04930	L	LE			1	23	16S	32E		617698	3642092*	307	210	97
L 05494	L	LE				36	16S	32E		619758	3638489*	303	200	103
L 06557	L	LE		1	4	21	16S	32E		615089	3641466*	295	210	85
L 06807	L	LE		1	4	09	16S	32E		615356	3644383*	290	248	42
L 07823	L	LE		2	2	216	16S	32E		615561	3643981*	269	247	22
L 08084	L	LE		1	1	116	16S	32E		614157	3643970*	317	260	57
L 08084 POD4	L	LE			2	26	16S	32E		618522	3640492*	303	233	70
L 08084 POD5	L	LE		4	1	426	16S	32E		618425	3639788*	296	165	131
L 08084 S3	L	LE			2	26	16S	32E		618522	3640492*	305	205	100
L 08241	L	LE		4	4	02	16S	32E		618656	3645924*	316		
L 10204	L	LE		4	2	04	16S	32E		615524	3646993*	319		
L 10205	L	LE		4	1	08	16S	32E		613038	3645066*	330		
L 11189	L	LE		1	1	404	16S	32E		614932	3646391*	350		

*UTM location was derived from PLSS - see Help

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Average Depth to Water: **224 feet**

Minimum Depth: **65 feet**

Maximum Depth: **280 feet**

Record Count: 22

PLSS Search:

Township: 16S

Range: 32E



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

No records found.

PLSS Search:

Township: 17S

Range: 30E

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Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer Water Column/Average Depth to Water

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been replaced,
O=orphaned,
C=the file is

closed) (quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 11590 POD1		ED		2	1	3	32	17S	31E	603315	3628545	158		
RA 11590 POD3		ED		3	1	2	32	17S	31E	603932	3629260	60		
RA 11590 POD4		ED		4	1	1	32	17S	31E	603308	3629253	55		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 3

PLSS Search:

Township: 17S

Range: 31E

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New Mexico Office of the State Engineer

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closed) (quarters are smallest to largest)

(NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec.	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04019	L	LE		4	3	4	02	17S	32E	618468	3636166*	182		
L 04020	L	LE		3	3	4	02	17S	32E	618268	3636166*	200		
L 04021	R	L	LE	3	4	4	02	17S	32E	618670	3636170*	190		
L 04021 POD3	L	LE		3	4	03	17S	32E	616761	3636252*	247			
L 04021 S	L	LE		2	4	4	03	17S	32E	617262	3636354*	260		
L 13047 POD1	L	LE					11	17S	32E	618187	3635254*	140		
L 13050 POD1	L	LE		2	2	1	10	17S	32E	616463	3635945*	156	132	24
RA 08855		LE		4	1	1	10	17S	32E	616061	3635742*	158		
RA 09505		LE		2	2	1	10	17S	32E	616462	3635944	147		
RA 09505 S		LE		2	2	1	10	17S	32E	616463	3635945*	144		
RA 10175		LE		2	1	28	17S	32E	614814	3631005*	158			
RA 11684 POD1		LE		1	1	4	11	17S	32E	618216	3635124	275		
RA 11684 POD2		LE		1	1	4	11	17S	32E	618313	3635248	275		
RA 11684 POD3		LE		3	3	1	11	17S	32E	618262	3635371	275		
RA 11684 POD4		LE		1	3	2	11	17S	32E	618334	3635521	275		
RA 11684 POD5		LE		3	1	4	11	17S	32E	618353	3635047	275		
RA 11734 POD1		LE		2	2	1	10	17S	32E	616556	3635929	165		

Average Depth to Water: 132 feet

Minimum Depth: 132 feet

Maximum Depth: 132 feet

Record Count: 17

PLSS Search:

Township: 17S

Range: 32E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



New Mexico Office of the State Engineer Water Column/Average Depth to Water

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closed) (quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-		Q Q Q			Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
	Code	basin	64	16	4								
CP 00818		LE	1	4	26	18S	30E		599289	3620364*	240		
CP 00819		LE	2	4	32	18S	30E		594878	3618720*	150		
L 01978	L	LE	1	3	23	18S	30E		598469	3621964*	65	44	21

Average Depth to Water: 44 feet

Minimum Depth: 44 feet

Maximum Depth: 44 feet

Record Count: 3

PLSS Search:

Township: 18S

Range: 30E

*UTM location was derived from PLSS - see Help

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(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD														
Sub-														
Q Q Q														
POD Number	Code	basin	County	64	16	4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 11092	L	LE		2	3	15	18S	31E		606849	3623669*	160	98	62

Average Depth to Water: 98 feet

Minimum Depth: 98 feet

Maximum Depth: 98 feet

Record Count: 1

PLSS Search:

Township: 18S

Range: 31E

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

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closed) (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00566			LE	4	4	1	04	18S	32E	614960	3627280*	133	65	68
CP 00672			LE	4	4	07	18S	32E	612475	3624947*	524	430	94	
CP 00672 CLW475398	O		LE	4	4	07	18S	32E	612475	3624947*	540	460	80	
CP 00677			LE	1	1	26	18S	32E	617750	3621373*	700			

Average Depth to Water: 318 feet

Minimum Depth: 65 feet

Maximum Depth: 460 feet

Record Count: 4

PLSS Search:

Township: 18S

Range: 32E

*UTM location was derived from PLSS - see Help

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Appendix IV

LABORATORY ANALYSES

Diversified Field Service, Inc.
315 S. Leech St.
Hobbs, NM 88240
(575) 397-6437



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

June 27, 2013

GARY WINK

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: J L KEEL B #91

Enclosed are the results of analyses for samples received by the laboratory on 06/20/13 8:05.

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/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:

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

 Received: 06/20/2013
 Reported: 06/27/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/17/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 SURFACE (H301428-01)

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	06/22/2013	ND	1.81	90.7	2.00	8.53	
Toluene*	<0.050	0.050	06/22/2013	ND	1.95	97.5	2.00	7.49	
Ethylbenzene*	<0.050	0.050	06/22/2013	ND	2.11	106	2.00	7.27	
Total Xylenes*	<0.150	0.150	06/22/2013	ND	6.35	106	6.00	6.93	
Total BTEX	<0.300	0.300	06/22/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 112 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	13800	16.0	06/24/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	06/21/2013	ND	213	106	200	0.956	
DRO >C10-C28	10900	50.0	06/21/2013	ND	213	106	200	3.66	

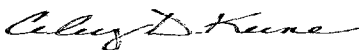
Surrogate: 1-Chlorooctane 92.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 403 % 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: 06/20/2013
 Reported: 06/27/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/17/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 SURFACE (H301428-02)

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	06/22/2013	ND	1.81	90.7	2.00	8.53		
Toluene*	<0.050	0.050	06/22/2013	ND	1.95	97.5	2.00	7.49		
Ethylbenzene*	<0.050	0.050	06/22/2013	ND	2.11	106	2.00	7.27		
Total Xylenes*	<0.150	0.150	06/22/2013	ND	6.35	106	6.00	6.93		
Total BTEX	<0.300	0.300	06/22/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 110 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1360	16.0	06/24/2013	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	06/21/2013	ND	213	106	200	0.956		
DRO >C10-C28	3870	50.0	06/21/2013	ND	213	106	200	3.66		

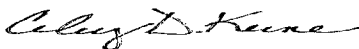
Surrogate: 1-Chlorooctane 98.8 % 65.2-140

Surrogate: 1-Chlorooctadecane 175 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celest 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:	06/20/2013	Sampling Date:	06/17/2013
Reported:	06/27/2013	Sampling Type:	Soil
Project Name:	J L KEEL B #91	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 SURFACE (H301428-03)

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	06/22/2013	ND	1.81	90.7	2.00	8.53	
Toluene*	<0.050	0.050	06/22/2013	ND	1.95	97.5	2.00	7.49	
Ethylbenzene*	<0.050	0.050	06/22/2013	ND	2.11	106	2.00	7.27	
Total Xylenes*	<0.150	0.150	06/22/2013	ND	6.35	106	6.00	6.93	
Total BTEX	<0.300	0.300	06/22/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 117 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	06/24/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	06/21/2013	ND	213	106	200	0.956	
DRO >C10-C28	1150	50.0	06/21/2013	ND	213	106	200	3.66	

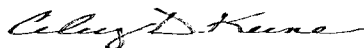
Surrogate: 1-Chlorooctane 91.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 120 % 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: 06/20/2013
Reported: 06/27/2013
Project Name: J L KEEL B #91
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/17/2013
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 4 SURFACE (H301428-04)

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	06/21/2013	ND	1.81	90.7	2.00	8.53	
Toluene*	<0.050	0.050	06/21/2013	ND	1.95	97.5	2.00	7.49	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.11	106	2.00	7.27	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	6.35	106	6.00	6.93	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 110 % 89.4-126

Chloride, SM4500Cl-B		mg/kg	Analyzed By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1040	16.0	06/24/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/21/2013	ND	213	106	200	0.956	
DRO >C10-C28	129	10.0	06/21/2013	ND	213	106	200	3.66	

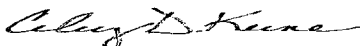
Surrogate: 1-Chlorooctane 92.2 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.5 % 63.6-154

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Caley 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: 06/20/2013
 Reported: 06/27/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/17/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 5 SURFACE (H301428-05)

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	06/22/2013	ND	1.81	90.7	2.00	8.53	
Toluene*	<0.050	0.050	06/22/2013	ND	1.95	97.5	2.00	7.49	
Ethylbenzene*	<0.050	0.050	06/22/2013	ND	2.11	106	2.00	7.27	
Total Xylenes*	<0.150	0.150	06/22/2013	ND	6.35	106	6.00	6.93	
Total BTEX	<0.300	0.300	06/22/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	06/24/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	06/21/2013	ND	213	106	200	0.956		
DRO >C10-C28	5160	50.0	06/21/2013	ND	213	106	200	3.66		

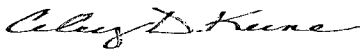
Surrogate: 1-Chlorooctane 98.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 197 % 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:	06/20/2013	Sampling Date:	06/17/2013
Reported:	06/27/2013	Sampling Type:	Soil
Project Name:	J L KEEL B #91	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 6 SURFACE (H301428-06)

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	06/21/2013	ND	1.81	90.7	2.00	8.53	
Toluene*	<0.050	0.050	06/21/2013	ND	1.95	97.5	2.00	7.49	
Ethylbenzene*	<0.050	0.050	06/21/2013	ND	2.11	106	2.00	7.27	
Total Xylenes*	<0.150	0.150	06/21/2013	ND	6.35	106	6.00	6.93	
Total BTEX	<0.300	0.300	06/21/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 118 % 89.4-126

Chloride, SM4500Cl-B			mg/kg		Analyzed By: DW				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/24/2013	ND	432	108	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/21/2013	ND	213	106	200	0.956	
DRO >C10-C28	<10.0	10.0	06/21/2013	ND	213	106	200	3.66	

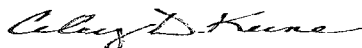
Surrogate: 1-Chlorooctane 94.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 97.6 % 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: 06/20/2013
 Reported: 06/27/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/17/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 7 SURFACE (H301428-07)

BTX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2013	ND	1.96	98.0	2.00	3.95	
Toluene*	<0.050	0.050	06/24/2013	ND	2.09	104	2.00	3.79	
Ethylbenzene*	<0.050	0.050	06/24/2013	ND	2.25	112	2.00	3.79	
Total Xylenes*	<0.150	0.150	06/24/2013	ND	6.79	113	6.00	3.17	
Total BTX	<0.300	0.300	06/24/2013	ND				200	

Surrogate: 4-Bromofluorobenzene (PIB) 110 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/24/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/21/2013	ND	213	106	200	0.956	
DRO >C10-C28	<10.0	10.0	06/21/2013	ND	213	106	200	3.66	

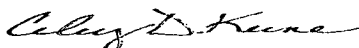
Surrogate: 1-Chlorooctane 93.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 95.9 % 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: 06/20/2013
 Reported: 06/27/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/17/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 8 SURFACE (H301428-08)

BTEX 8021B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2013	ND	1.96	98.0	2.00	3.95	
Toluene*	<0.050	0.050	06/24/2013	ND	2.09	104	2.00	3.79	
Ethylbenzene*	<0.050	0.050	06/24/2013	ND	2.25	112	2.00	3.79	
Total Xylenes*	<0.150	0.150	06/24/2013	ND	6.79	113	6.00	3.17	
Total BTEX	<0.300	0.300	06/24/2013	ND				200	

Surrogate: 4-Bromofluorobenzene (PIL) 110 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/24/2013	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	06/21/2013	ND	213	106	200	0.956	
DRO >C10-C28	560	50.0	06/21/2013	ND	213	106	200	3.66	

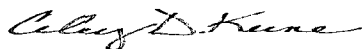
Surrogate: 1-Chlorooctane 93.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 108 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

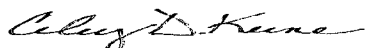
Notes and Definitions

- 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.
- 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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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Page 1 of 1

Company Name: <u>Linn Energy</u>		BILL TO		ANALYSIS REQUEST																										
Project Manager: <u>Gary Wink</u>		P.O. #:																												
Address:		Company:																												
City: State: Zip:		Attn:																												
Phone #: Fax #:		Address: <u>same</u>																												
Project #: Project Owner:		City:																												
Project Name:		State: Zip:																												
Project Location: <u>IL Need B#91</u>		Phone #:																												
Sampler Name: <u>L. Gonzalez</u>		Fax #:																												
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING																		
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME	chlorides	TPH	BTEX												
	H301428																													
	1	SP1 Surface	✓	1			✓					✓		6/17	735	✓	✓	✓												
	2	SP2 Surface	✓	1			✓					✓		6/17	813	✓	✓	✓												
	3	SP3 Surface	✓	1			✓					✓		6/17	951	✓	✓	✓												
	4	SP4 Surface	✓	1			✓					✓		6/17	1037	✓	✓	✓												
	5	SP5 Surface	✓	1			✓					✓		6/17	1124	✓	✓	✓												
	6	SP6 Surface	✓	1			✓					✓		6/17	1254	✓	✓	✓												
	7	SP7 Surface	✓	1			✓					✓		6/17	1324	✓	✓	✓												
	8	SP8 Surface	✓	1			✓					✓		6/17	1350	✓	✓	✓												

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Relinquished By: <u>Luis Gonzalez</u>	Date: <u>6-17-13</u>	Received By: <u>[Signature]</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: <u>1615</u>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <u>[Signature]</u>	Date: <u>6-20-13</u>	Received By: <u>[Signature]</u>	REMARKS:	
	Time: <u>805</u>		Email	
Delivered By: (Circle One)			<u>gawink@linnenergy.com</u>	
Sampler - UPS - Bus - Other:			<u>Aruth@diversifiedfsi.com</u>	
		Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	CHECKED BY: <u>[Signature]</u>	
		<input type="checkbox"/> Yes <input type="checkbox"/> No		

Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#54



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

July 02, 2013

GARY WINK

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J L KEEL B #91

Enclosed are the results of analyses for samples received by the laboratory on 06/25/13 15:45.

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

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 OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 06/25/2013
 Reported: 07/02/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/24/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 BOTTOM 2' (H301483-01)

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.100	0.100	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTEX	<0.300	0.300	06/28/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 109 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798	
DRO >C10-C28	<10.0	10.0	06/26/2013	ND	220	110	200	0.475	

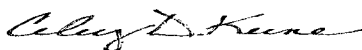
Surrogate: 1-Chlorooctane 93.7 % 65.2-140

Surrogate: 1-Chlorooctadecane 95.4 % 63.6-154

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 06/25/2013
 Reported: 07/02/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/24/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 BOTTOM 1' (H301483-02)

BTEx 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.050	0.050	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTEX	<0.300	0.300	06/28/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 92.3 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798	
DRO >C10-C28	12.0	10.0	06/26/2013	ND	220	110	200	0.475	

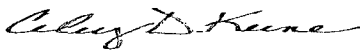
Surrogate: 1-Chlorooctane 89.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 91.3 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 06/25/2013
 Reported: 07/02/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/24/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 BOTTOM 2' (H301483-03)

BTX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.050	0.050	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTX	<0.300	0.300	06/28/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 97.3 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798	
DRO >C10-C28	<10.0	10.0	06/26/2013	ND	220	110	200	0.475	

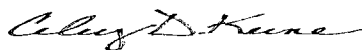
Surrogate: 1-Chlorooctane 92.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 93.5 % 63.6-154

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	06/25/2013	Sampling Date:	06/24/2013
Reported:	07/02/2013	Sampling Type:	Soil
Project Name:	J L KEEL B #91	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 4 BOTTOM 1' (H301483-04)

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.100	0.100	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTEX	<0.300	0.300	06/28/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 95.1 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798	
DRO >C10-C28	<10.0	10.0	06/26/2013	ND	220	110	200	0.475	

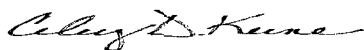
Surrogate: 1-Chlorooctane 89.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 88.2 % 63.6-154

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Coley D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 06/25/2013
 Reported: 07/02/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/24/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 5 BOTTOM 1' (H301483-05)

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.050	0.050	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTEX	<0.300	0.300	06/28/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 91.5 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798		
DRO >C10-C28	<10.0	10.0	06/26/2013	ND	220	110	200	0.475		

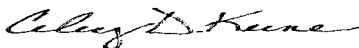
Surrogate: 1-Chlorooctane 104 % 65.2-140

Surrogate: 1-Chlorooctadecane 99.4 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	06/25/2013	Sampling Date:	06/24/2013
Reported:	07/02/2013	Sampling Type:	Soil
Project Name:	J L KEEL B #91	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 6 BOTTOM 1' (H301483-06)

BTEX 8021B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.100	0.100	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTEX	<0.300	0.300	06/28/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 100 % 89.4-126

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798	
DRO >C10-C28	<10.0	10.0	06/26/2013	ND	220	110	200	0.475	

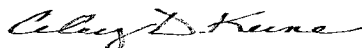
Surrogate: 1-Chlorooctane 91.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 90.9 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 06/25/2013
 Reported: 07/02/2013
 Project Name: J L KEEL B #91
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/24/2013
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 7 BOTTOM 1' (H301483-07)

BTEx 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.050	0.050	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTEX	<0.300	0.300	06/28/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 94.1 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798	
DRO >C10-C28	<10.0	10.0	06/26/2013	ND	220	110	200	0.475	

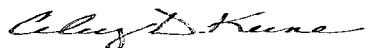
Surrogate: 1-Chlorooctane 90.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 82.2 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 GARY WINK
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	06/25/2013	Sampling Date:	06/24/2013
Reported:	07/02/2013	Sampling Type:	Soil
Project Name:	J L KEEL B #91	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 8 BOTTOM 1' (H301483-08)

BTEX 8021B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/28/2013	ND	1.80	89.8	2.00	15.2	
Toluene*	<0.050	0.050	06/28/2013	ND	1.94	97.1	2.00	15.4	
Ethylbenzene*	<0.050	0.050	06/28/2013	ND	2.05	102	2.00	16.5	
Total Xylenes*	<0.150	0.150	06/28/2013	ND	6.22	104	6.00	17.8	
Total BTEX	<0.300	0.300	06/28/2013	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/27/2013	ND	400	100	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	06/26/2013	ND	208	104	200	0.798	
DRO >C10-C28	<10.0	10.0	06/26/2013	ND	220	110	200	0.475	

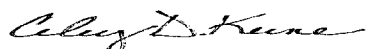
Surrogate: 1-Chlorooctane 90.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 88.4 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

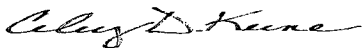
Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>Linn Energy</u>		BILL TO		ANALYSIS REQUEST											
Project Manager: <u>Gary Wink</u>		P.O. #:		<div style="display: flex; justify-content: space-between;"> <div> Chlorides TPH BTEX </div> <div> 8015m </div> </div>											
Address:		Company:													
City:	State:	Zip:	Attn:												
Phone #:	Fax #:	Address:													
Project #:	Project Owner:		City:												
Project Name:		State:												Zip:	
Project Location: <u>JL Keel B #91</u>		Phone #:													
Sampler Name: <u>Luis Gonzalez</u>		Fax #:													
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME
	H301483														
	1	SR1 Bottom 2'	/	1			/					/		6/24	1305
	2	SR2 Bottom 1'	/	1			/					/		6/24	1322
	3	SR3 Bottom 2'	/	1			/					/		6/24	1407
	4	SR4 Bottom 1'	/	1			/					/		6/24	1345
	5	SR5 Bottom 1'	/	1			/					/		6/24	1430
	6	SR6 Bottom 1'	/	1			/					/		6/24	1450
	7	SR7 Bottom 1'	/	1			/					/		6/24	1508
	8	SR8 Bottom 1'	/	1			/					/		6/24	1527

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Relinquished By:	Date: <u>6/25/13</u>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
<u>Luis Gonzalez</u>	Time: <u>2:45</u>	<u>Stephen McSh</u>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date: <u>6-25</u>	Received By:	REMARKS:	
<u>Stephen McSh</u>	Time: <u>3:45pm</u>	<u>Jodi Jensen</u>	Email: <u>gawink@linenergy.com</u>	
Delivered By: (Circle One)		Sample Condition	aruth@diversifiedpsi.com	
Sampler - UPS - Bus - Other:		Cool Intact		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		CHECKED BY:		
		<u>[Signature]</u>		

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#54

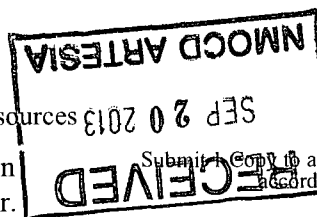
Appendix V

FINAL FORM C-141

Diversified Field Service, Inc.
315 S. Leech St.
Hobbs, NM 88240
(575) 397-6437

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Linn Operating	Contact	Joe Hernandez
Address	2130 W. Bender Blvd, Hobbs, NM 88240	Telephone No.	575-738-1739
Facility Name	J.L. Keel B #91	Facility Type	Oil
Surface Owner	Federal	Mineral Owner	Federal
		API No.	30-015-28442

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	8	17S	31E	2664	FSL	2562	FEL	Eddy

Latitude 32.84917° N Longitude 103.89088° W

NATURE OF RELEASE

Type of Release	Produced Water/Oil	Volume of Release	10/5	Volume Recovered	0/0
Source of Release	Poly Pipeline	Date and Hour of Occurrence	8/24/2012 11 am	Date and Hour of Discovery	8/24/2012 11:30 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	M. Bratcher - NMOCD Terry Gregston - BLM		
By Whom?	Gary Wink	Date and Hour	8/29/2012 8am		
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.*

While attempting to flush flow, line pressured up to 250 lbs. and the transition at well head ruptured. The pressurized fluid in the line sprayed out and onto the pad. A vacuum truck arrived and picked up less than 1 bbl of oil.

Describe Area Affected and Cleanup Action Taken.*

The spill affected approximately 1600 square feet of the well pad and 1800 square feet of pasture area to the southwest. The spill was delineated by Diversified Field Services, Inc. Impacted soils were removed to a NMOCD approved disposal facility. Confirmation samples were submitted to a commercial lab for analyses. Backfill of the excavation was approved by the NMOCD and BLM. The excavation was backfilled and the site was contoured to the surrounding landscape. The area was seeded with Lesser Prairie Chicken seed mix.

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.

OIL CONSERVATION DIVISION

Signature:	Approved by Environmental Specialist:	
Printed Name: Brian Wall	Approval Date:	Expiration Date:
Title: Construction Foreman	Conditions of Approval:	Attached <input type="checkbox"/>
E-mail Address: bwall@linenergy.com		
Date: Phone: (432)363-9372		

* Attach Additional Sheets If Necessary