

# Turner B North Tank Battery

## CLOSURE REPORT

---

2RP-1733 2RP-1734 2RP-1896

API No. 30-015-26612

Release Date: July 13, 2013, July 15, 2013, and August 27, 2013

Unit Letter L, Section 20, Township 17 South, Range 31 East

**November 14, 2013**

**Prepared by:**

Environmental Department  
Diversified Field Service, Inc.  
3412 N. Dal Paso  
Hobbs, NM 88240  
Phone: (575)964-8394  
Fax: (575)964-8396

# 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

# Turner B North Tank Battery

## 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 several crude oil and produced water leaks within the battery firewall. Three of those leak events are addressed in full herein. The first leak occurred on July 13, 2013 when fluids leaked from a corroded tank bottom. A form C-141 was submitted to the NMOCD on July 16, 2013 (Appendix I). The second leak occurred on July 15, 2013 and resulted from a hole in a circulating steel line within the battery. A form C-141 was submitted on July 16, 2013. The third leak occurred on August 27, 2013 when a corroded tank bottom released fluids into the battery earthen containment area. A form C-141 was submitted to the NMOCD on August 28, 2013.

## 2 SITE ACTIVITIES

---

On September 6, 2013, Linn completed the removal of the tank battery equipment (See Site Photographs in Appendix II). DFSI personnel began excavating saturated soils by hand from the area of the lact unit contained at the north end, and also began excavating visually impacted soils from the main tank area. The earthen berms including the underlying soils were also removed. The lact unit was also temporarily relocated to allow for excavation and drilling beneath.

The entire area was excavated to 4 ft. below ground surface (bgs). The excavated soils were removed to a NMOCD approved disposal facility. Due to a rain event, the excavation bottom was dressed with a layer of clean imported caliche for ease of access by a drill rig.

On September 16, 2013 a drill rig was used to collect soil samples from 3 locations centrally placed within the excavation (Figure). At each soil bore, sampling commenced at 5 ft. below the excavation floor. Samples were collected in 5 ft. intervals, and were field screened for chloride and visual staining. Sampling continued at each soil bore until two consecutive samples with low chloride were obtained. Samples from each soil bore were submitted to a commercial laboratory for chloride, TPH (GRO/DRO), and BTEX (Benzene, Toluene, Ethyl benzene, Xylene) analyses (Appendix IV).

At DP1 (drill point), chloride at 54 ft. bgs was 448 mg/kg, GRO was less than 10 mg/kg, DRO was 13.1 mg/kg, and Total BTEX showed less than 0.300 mg/kg. Chloride in both DP2 and DP3 at 34

ft. bgs was 32 mg/kg, GRO/DRO were each less than 10 mg/kg, and Total BTEX showed less than 0.300 mg/kg. The soil bores were backfilled with clean soil and capped with bentonite.

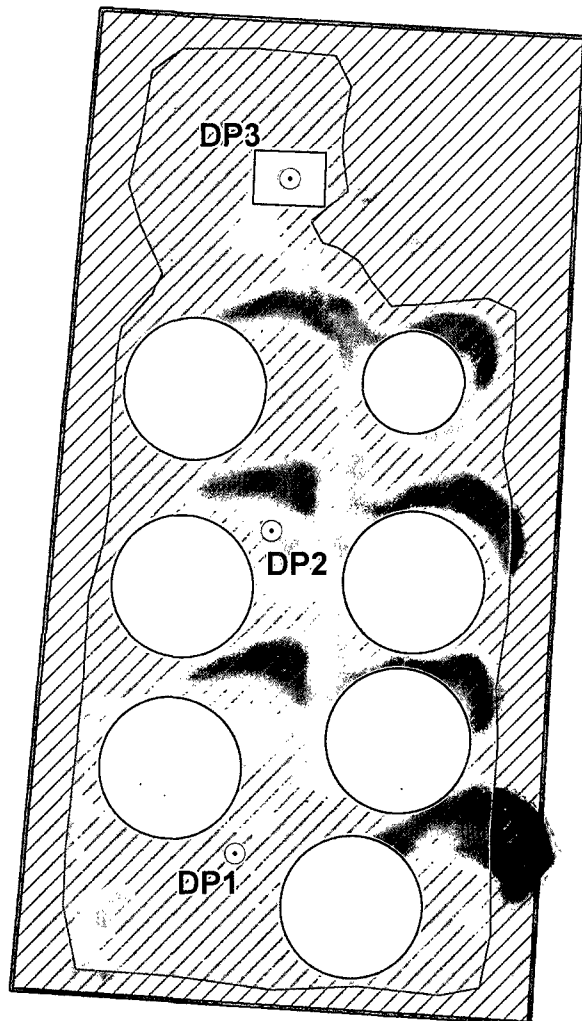
On September 17, 2013 a 20 mil reinforced plastic liner was installed in the excavation floor. The excavation was backfilled with clean soil and caliche to ground surface, leveled, and compacted. A secondary containment system with steel sidewalls and a polyethylene liner was constructed above the compacted backfill. The new facility was assembled within the secondary containment.

### 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, and the placement of a liner at 3 ft bgs, Linn submits the final NMOCD form C-141 (Appendix V) and respectfully requests the closure of the regulatory file for the site.

# FIGURE - Site Diagram



DP3					
Depth	Cl- ppm	Lab Cl-	GRO	DRO	Total BTEX
9'	1249	864	<10	<10	<0.300
14'	1199				
19'	674				
24'	499				
29'	474	224	<10	<10	<0.300
34'	324	32	<10	<10	<0.300

DP2					
Depth	Cl- ppm	Lab Cl-	GRO	DRO	Total BTEX
9'	1125	1130	<10	10.6	<0.300
14'	1174				
19'	899				
24'	999				
29'	649	656	<10	<10	<0.300
34'	624	32	<10	<10	<0.300

DP1					
Depth	Cl- ppm	Lab Cl-	GRO	DRO	Total BTEX
9'	1499	192	<10	<10	<0.300
14'	1699				
19'	1249				
24'	1124				
29'	999				
34'	674				
39'	999				
44'	874				
49'	724	16	<10	<10	<0.300
54'	674	448	<10	13.1	<0.300

## Linn Energy Turner B North Tank Battery

UL/L, Sec 20, T17S, R31E

Drafted by: ACR  
Draft Date: 11/17/2013

### Legend

- Drill Point
- Lact Unit
- Former Tanks
- Impacted Area Within Berm
- 4' Excavation



# Appendix I

INITIAL FORM C-141

---

Diversified Field Service, Inc.  
3412 N. Dal Paso  
Hobbs, NM 88240  
(575) 964-8394

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

JUL 16 2013

Submit 1 Copy to appropriate District Office in  
NMOCD ARTESIA

Form C-141  
Revised October 10, 2003

### Release Notification and Corrective Action

nJMW1319932108

Name of Company: Linn Operating 269324		Contact: Gary Wink	
Address: 2130 W. Bender Hobbs, NM 88240		Telephone No.: 575-738-1739	
Facility Name: Turner B North Battery - (Turner B 95)		Facility Type: Battery - (closest well to spill)	
Surface Owner: Federal		Mineral Owner: Federal	API No.: 3001526612

OPERATOR ☒ Initial Report ☐ Final Report

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	20	17S	31E	2610	South	1000	West	Eddy

Latitude: 32.8199711236509 Longitude: -103.897239412252

### NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 60 bbls	Volume Recovered: 50 bbls
Source of Release: Tank	Date and Hour of Occurrence: 07/13/2013 8:00am	Date and Hour of Discovery: 07/13/2013 8:00am
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 Mike Burton-BLM	
By Whom? Gary Wink	Date and Hour 07/15/2013 8:00am	
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.\*: 7-12-13 cleaned out tank #4 moved 60 BBLs of production over to tank #1.7-13-13 Pulled up to battery seen oil tank #1 leaking from the bottom.called vac truck to pick up stand fluid.

Describe Area Affected and Cleanup Action Taken.\*: Affected area approx 15'X20'.

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: Gary W. Wink	OIL CONSERVATION DIVISION	
Printed Name: Gary W. Wink	Approved by District Supervisor: Signed By Mike Burton	
Title: Production Foreman	Approval Date: JUL 18 2013	Expiration Date:
E-mail Address: gawink@linenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 07/16/2013 Phone: 575-390-3477	Remediation per OCD Rule & Guidelines, & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN:	

\* Attach Additional Sheets If Necessary

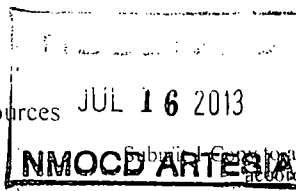
August 18, 2013

2RP-1733

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



Form C-141  
Revised October 10, 2003

Submit to appropriate District Office in accordance with 19.15.29 NMAC

Release Notification and Corrective Action

NJM W 13199510C09

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Linn Operating 269324	Contact: Gary Wink
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No.: 575-738-1739
Facility Name: Turner B: North Battery - Turner B 95	Facility Type: Battery
Surface Owner: Federal	Mineral Owner: Federal
API No.: 3001526612	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	20	17S	31E	2610	South	1000	West	Eddy

Latitude: 32.8199711236509 Longitude: -103.897239412252

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 87 bbls	Volume Recovered: 60 bbls
Source of Release: 2" circulating steel line	Date and Hour of Occurrence: 07/15/2013 8:00am	Date and Hour of Discovery: 07/15/2013 8:00am
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 Mike Burton-BLM	
By Whom? Gary Wink	Date and Hour 07/15/2013 3:37 pm	
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.\*: 7/15/13 Pulled up to battery, found oil inside firewall. Called ACD truck and he picked up 60 Barrels and we transferred back into tank #5, after trucked picked up oil noticed 2" circulating steel line had hole and caused spill. Hole was on line beside tank #1.

Describe Area Affected and Cleanup Action Taken.\* : area affected 30' x 30' , around tanks and lact unit.

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: Gary W. Wink	OIL CONSERVATION DIVISION	
Printed Name: Gary W. Wink	Approved by District Supervisor: Signed By Mike Bratcher	
Title: Production Foreman	Approval Date: JUL 18 2013	Expiration Date:
E-mail Address: gawink@linenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 07/16/2013 Phone: 575-390-3477	Remediation per OCD Rule & Guidelines, & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN:	

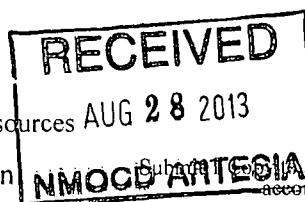
\* Attach Additional Sheets If Necessary

August 18, 2013

2RP-1734

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



Form C-141  
Revised October 10, 2003

Submit to the appropriate District Office in accordance with 19.15.29 NMAC

### Release Notification and Corrective Action

**JMW 1324937466** OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: Linn Operating <b>269324</b>	Contact: Brian Wall
Address: 2130 W. Bender Hobbs, NM 88240	Telephone No.: 575-738-1739
Facility Name: Turner B North Battery - Turner B 95	Facility Type: Battery

Surface Owner: Federal	Mineral Owner:	API No.: 3001526612
------------------------	----------------	---------------------

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	20	17S	31E	2610	South	1000	West	Eddy

Latitude: 32.8199711236509 Longitude: -103.897239412252

### NATURE OF RELEASE

Type of Release: Oil / Produced Water	Volume of Release: 85bbls/ 5bbls	Volume Recovered: 70bbls/ 0bbl
Source of Release: Battery	Date and Hour of Occurrence: 08/27/2013 8:00am	Date and Hour of Discovery: 08/27/2013 8:00am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Burton- BLM Mike Bratcher- NM OCD	
By Whom? Brian Wall	Date and Hour 08/27/2013 08/28/2013	
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.\*: 8-27-13 Pulled up to battery seen oil tank #3 leaking from the bottom.called vac truck to pick up stand fluid.

Describe Area Affected and Cleanup Action Taken.\* : Affected area approx 15'X20'. Had vacuum truck pick up oil and clean up spill.

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 District Supervisor:	
Printed Name: Brian Wall	Approval Date: <b>SEP 06 2013</b> Expiration Date:	
Title: Construction Foreman II	Conditions of Approval:	
E-mail Address: bwall@linenergy.com	Remediation per OCD Rule & Guidelines, & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN:	Attached <input type="checkbox"/>
Date: 08/28/2013 Phone: 806-367-0645		

\* Attach Additional Sheets If Necessary

**October 6, 2013**

**2RP-1896**

# Appendix II

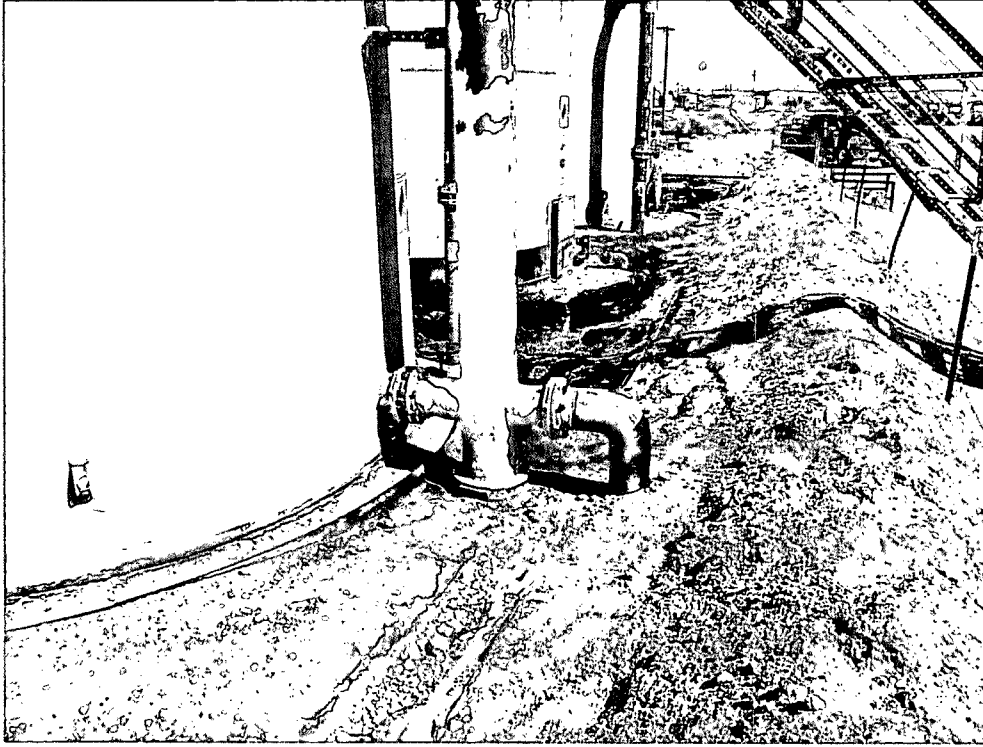
## SITE PHOTOGRAPHS

---

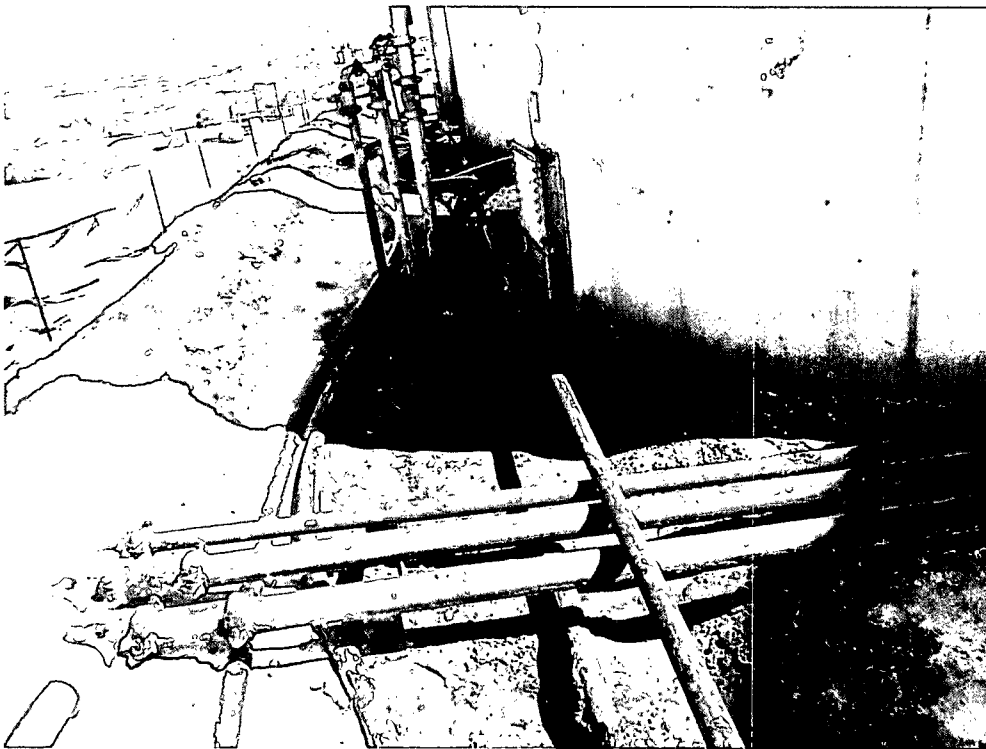
Diversified Field Service, Inc.  
3412 N. Dal Paso  
Hobbs, NM 88240  
(575) 964-8394

# Linn Energy Turner B North Battery

Unit Letter B, Section 28, T17S R31E



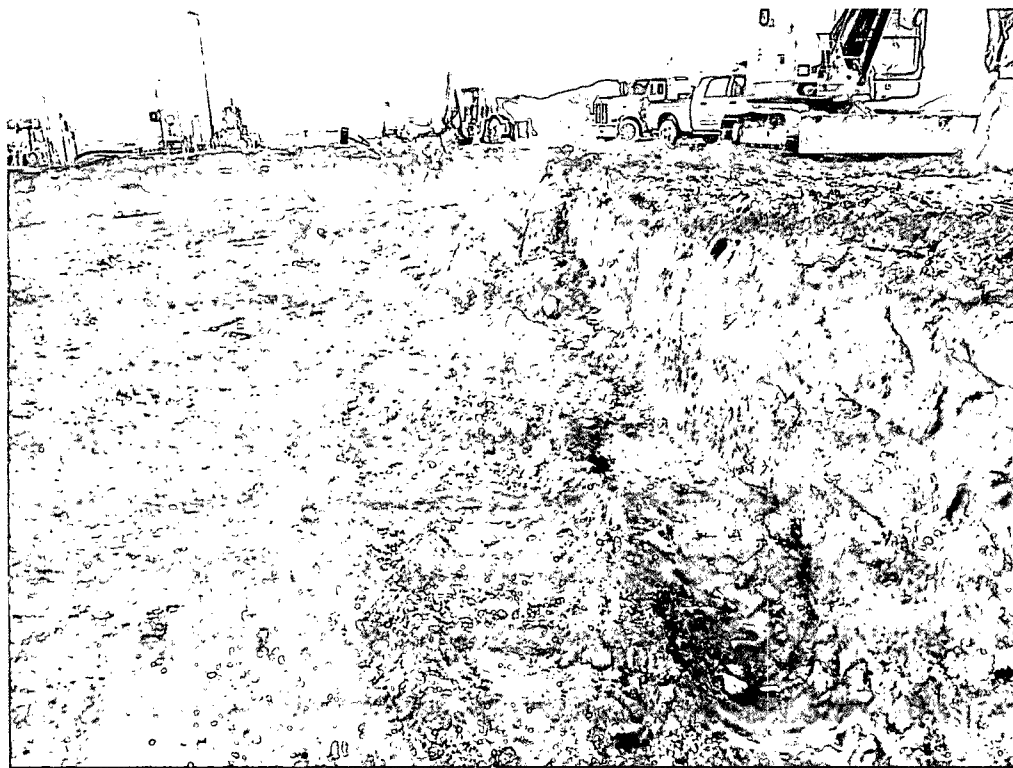
Impacted area, east side, facing north 08/23/13



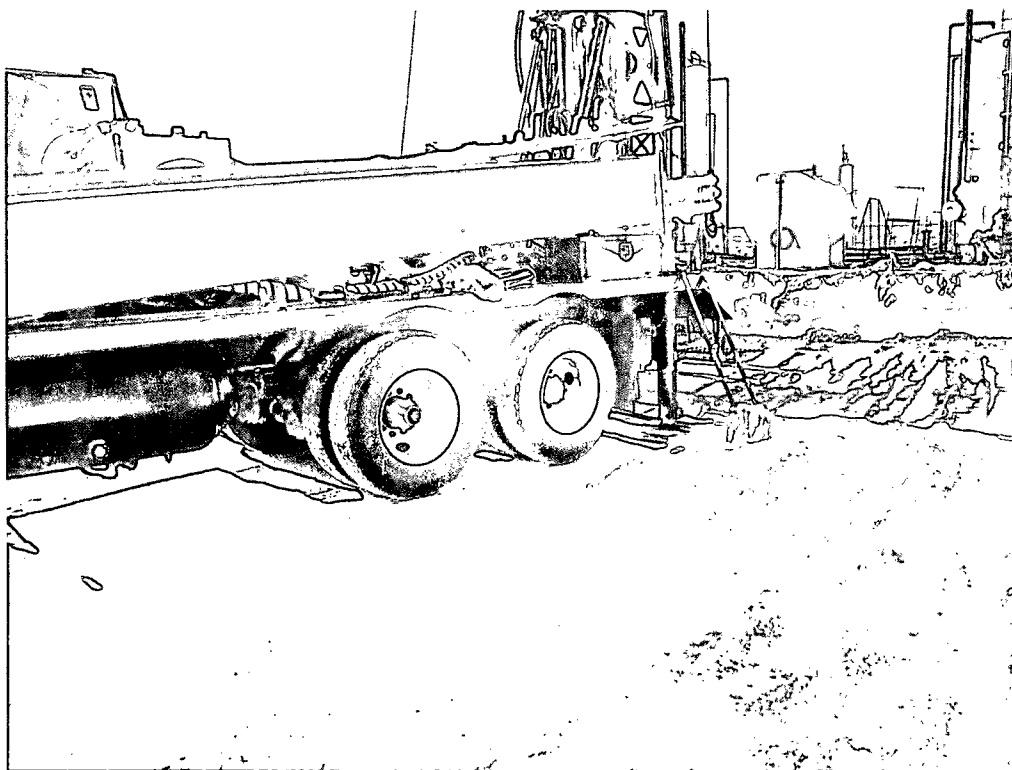
Impacted area, west side, facing north 08/23/13



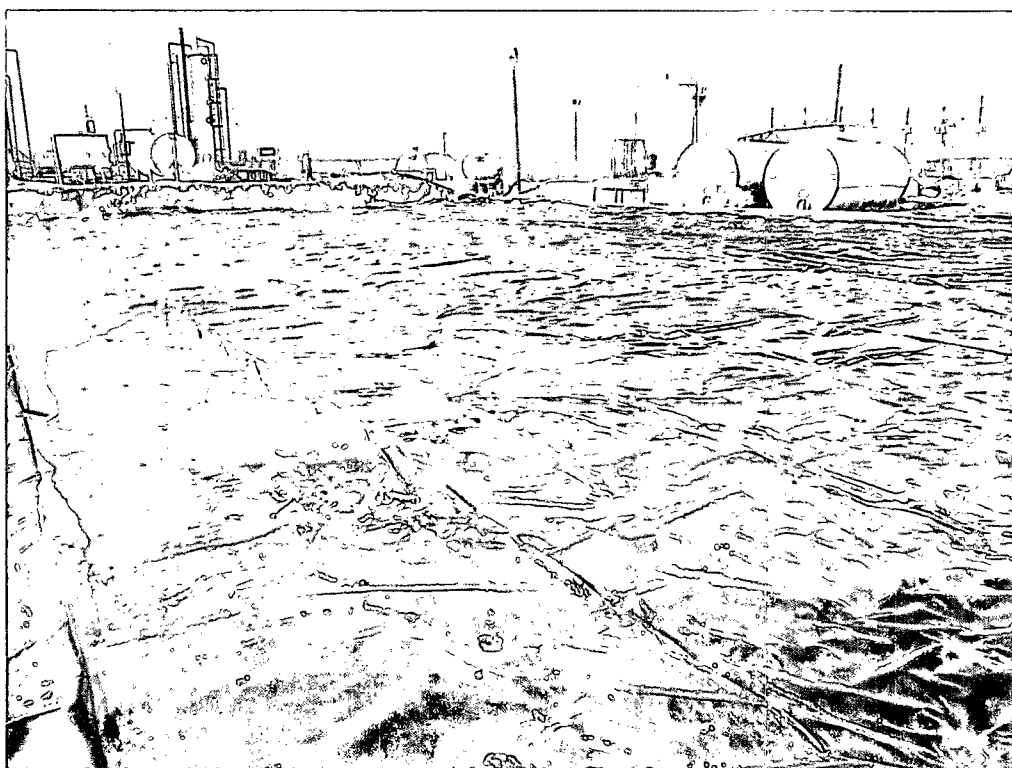
Excavation, facing north 9/10/13



Excavation, facing north 9/13/13



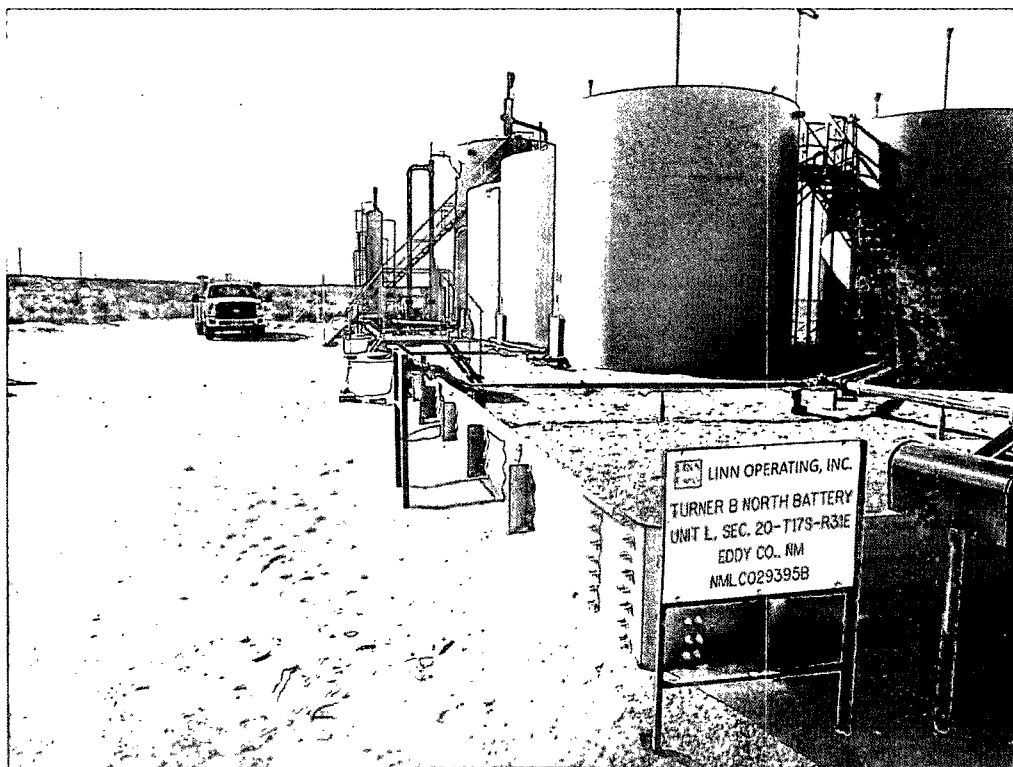
Installation of soil bore, facing south 09/16/13



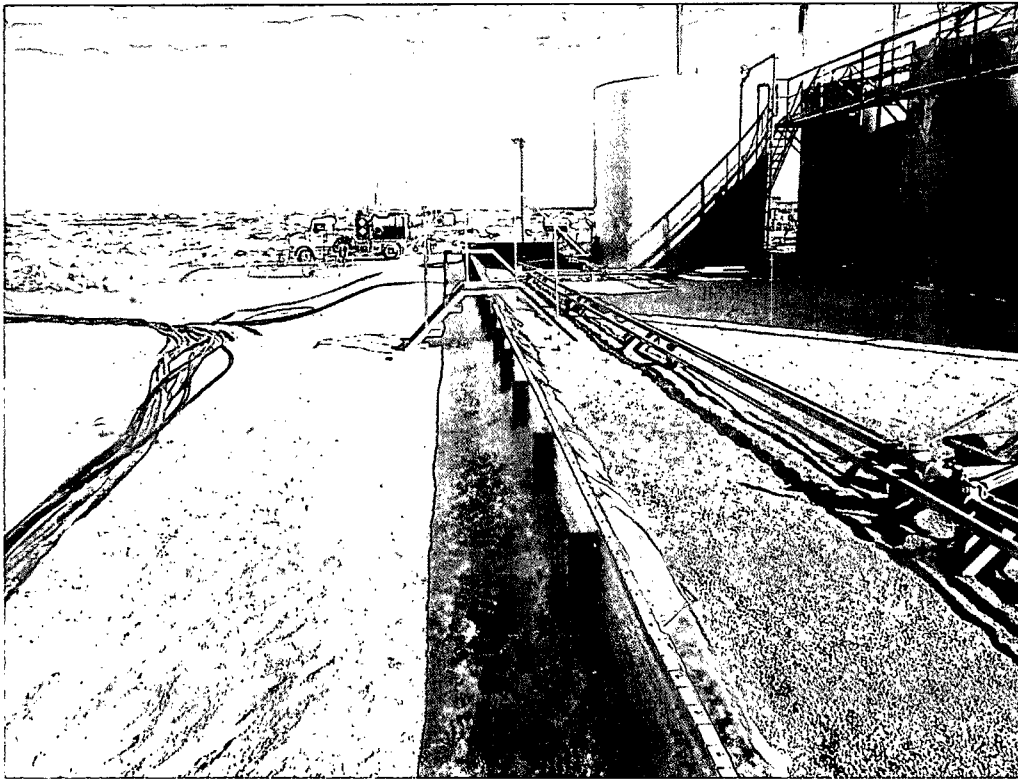
Installation of liner at 4' bgs, facing southwest 09/17/13



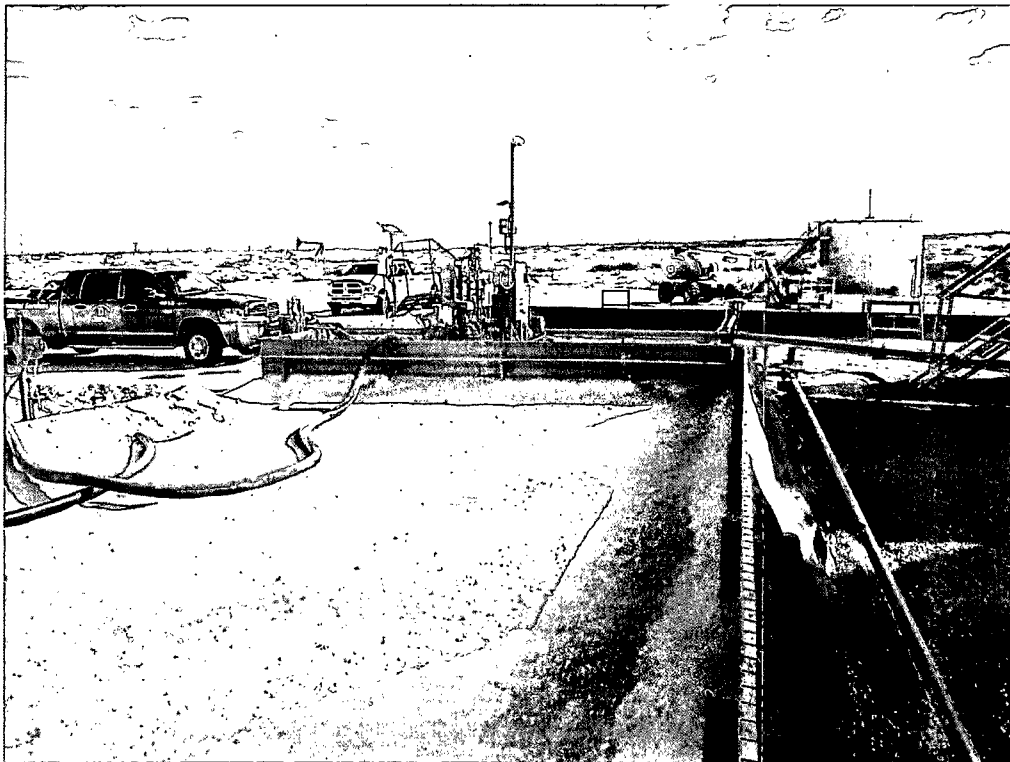
Compaction of caliche backfill, facing west 9/18/13



Final battery inside secondary containment, facing south 11/15/13



Final battery inside secondary containment, facing north 11/15/13



Lact unit inside secondary containment, facing east 11/15/13

# Appendix III

## GROUNDWATER DATA

---

Diversified Field Service, Inc.  
3412 N. Dal Paso  
Hobbs, NM 88240  
(575) 964-8394

# GROUND WATER SEARCH

## Turner B North Tank Battery

UL:   L  

Sec:   20  

T:   17S  

R:   31E  

Groundwater Depth:                     236                     ft.

○ = NM Office of the State Engineer

● = U.S. Geological Survey (unknown well)

✕ = Site Location

Date: 11/5/13

By: Amy Ruth

	16S 30E	288'○ 314'○ <b>16S 31E</b>	65' 260'○ 248'○ 275'○ 254'○ <b>16S 32E</b> 210'○ 210'○ 221'○ 200'○	
	17S 30E	✕ <b>17S 31E</b>	132'○ <b>17S 32E</b>	
	18S 30E 44'○	98'○ <b>18S 31E</b>	65'○ 430'○ <b>18S 32E</b> 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.

---

4/29/13 12:38 PM

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

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

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

(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
<u>L 02381</u>	L	LE		3	1	13	16S	32E		619086	3643515*	308	215	93
<u>L 02434</u>	L	LE				01	16S	32E		619661	3646531*	337		
<u>L 02449</u>	L	LE				01	16S	32E		619661	3646531*	330	265	65
<u>L 02617</u>	L	LE		4	4	02	16S	32E		618656	3645924*	322	270	52
<u>L 02752</u>	L	LE		1	3	26	16S	32E		617521	3639880*	324	280	44
<u>L 02846</u>	L	LE		4	2	1	11	16S	32E	617956	3645413*	328	275	53
<u>L 02954</u>	L	LE		2	4	03	16S	32E		617043	3646310*	120	65	55
<u>L 02993</u>	L	LE		3	3	2	15	16S	32E	616572	3643391*	100		
<u>L 03631</u>	L	LE		1	2	02	16S	32E		618240	3647126*	315	250	65
<u>L 04930</u>	L	LE			1	23	16S	32E		617698	3642092*	307	210	97
<u>L 05494</u>	L	LE				36	16S	32E		619758	3638489*	303	200	103
<u>L 06557</u>	L	LE		1	4	21	16S	32E		615089	3641466*	295	210	85
<u>L 06807</u>	L	LE		1	4	4	09	16S	32E	615356	3644383*	290	248	42
<u>L 07823</u>	L	LE		2	2	2	16	16S	32E	615561	3643981*	269	247	22
<u>L 08084</u>	L	LE		1	1	1	16	16S	32E	614157	3643970*	317	260	57
<u>L 08084 POD4</u>	L	LE			2	26	16S	32E		618522	3640492*	303	233	70
<u>L 08084 POD5</u>	L	LE		4	1	4	26	16S	32E	618425	3639788*	296	165	131
<u>L 08084 S3</u>	L	LE			2	26	16S	32E		618522	3640492*	305	205	100
<u>L 08241</u>	L	LE		4	4	02	16S	32E		618656	3645924*	316		
<u>L 10204</u>	L	LE		4	2	2	04	16S	32E	615524	3646993*	319		
<u>L 10205</u>	L	LE		4	1	08	16S	32E		613038	3645066*	330		
<u>L 11189</u>	L	LE		1	1	4	04	16S	32E	614932	3646391*	350		

\*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.

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**

---

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.

---

4/29/13 12:40 PM

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-		Q Q Q				Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
	Code	basin	64	16	4	4								
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

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

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

(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		Q Q Q					X	Y	Depth Well	Depth Water	Water Column
	Sub- Code	basin	County	64	16	4	Sec	Tws	Rng			
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

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

(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  
closed)

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

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

(In feet)

POD Number	Sub-	Code	basin	County	Q Q Q	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

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

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

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.

# Appendix IV

## LABORATORY ANALYSES

---

Diversified Field Service, Inc.  
3412 N. Dal Paso  
Hobbs, NM 88240  
(575) 964-8394

September 19, 2013

BRIAN WALL

LINN ENERGY

RR1, BOX 24 B

KINGFISHER, OK 73750

RE: TURNER B NORTH BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 09/18/13 13:20.

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

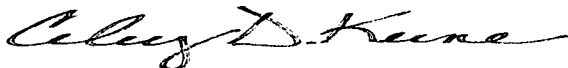
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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:**

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

 Received: 09/18/2013  
 Reported: 09/19/2013  
 Project Name: TURNER B NORTH BATTERY  
 Project Number: NOT GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/16/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: DP 1 @ 49' (H302268-01)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2	
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5	
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4	
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5	
Total BTEX	<0.300	0.300	09/18/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 115 % 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	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	<10.0	10.0	09/19/2013	ND	191	95.6	200	2.38	

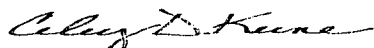
Surrogate: 1-Chlorooctane 95.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 101 % 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  
 BRIAN WALL  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 09/18/2013  
 Reported: 09/19/2013  
 Project Name: TURNER B NORTH BATTERY  
 Project Number: NOT GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/16/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: DP 1 @ 9' (H302268-02)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2		
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5		
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4		
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5		
Total BTEX	<0.300	0.300	09/18/2013	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	192	16.0	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	<10.0	10.0	09/19/2013	ND	191	95.6	200	2.38	

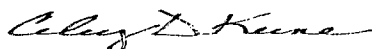
Surrogate: 1-Chlorooctane 88.5 % 65.2-140

Surrogate: 1-Chlorooctadecane 91.2 % 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  
 BRIAN WALL  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 09/18/2013  
 Reported: 09/19/2013  
 Project Name: TURNER B NORTH BATTERY  
 Project Number: NOT GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/16/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: DP 1 @ 54' (H302268-03)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2	
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5	
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4	
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5	
Total BTEX	<0.300	0.300	09/18/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 113 % 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	448	16.0	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	13.1	10.0	09/19/2013	ND	191	95.6	200	2.38	

Surrogate: 1-Chlorooctane 87.4 % 65.2-140

Surrogate: 1-Chlorooctadecane 93.6 % 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  
 BRIAN WALL  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	09/18/2013	Sampling Date:	09/16/2013
Reported:	09/19/2013	Sampling Type:	Soil
Project Name:	TURNER B NORTH BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: DP 2 @ 9' (H302268-04)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2	
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5	
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4	
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5	
Total BTEX	<0.300	0.300	09/18/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	1130	16.0	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	10.6	10.0	09/19/2013	ND	191	95.6	200	2.38	

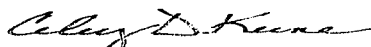
Surrogate: 1-Chlorooctane 87.0 % 65.2-140

Surrogate: 1-Chlorooctadecane 92.0 % 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  
 BRIAN WALL  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 09/18/2013  
 Reported: 09/19/2013  
 Project Name: TURNER B NORTH BATTERY  
 Project Number: NOT GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/16/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: DP 2 @ 34' (H302268-05)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2	
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5	
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4	
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5	
Total BTEX	<0.300	0.300	09/18/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 113 % 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	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	<10.0	10.0	09/19/2013	ND	191	95.6	200	2.38	

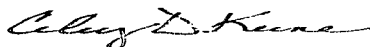
Surrogate: 1-Chlorooctane 96.6 % 65.2-140

Surrogate: 1-Chlorooctadecane 99.6 % 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  
 BRIAN WALL  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

Received:	09/18/2013	Sampling Date:	09/16/2013
Reported:	09/19/2013	Sampling Type:	Soil
Project Name:	TURNER B NORTH BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: DP 2 @ 29' (H302268-06)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2		
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5		
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4		
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5		
Total BTEX	<0.300	0.300	09/18/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 111 % 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	656	16.0	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	<10.0	10.0	09/19/2013	ND	191	95.6	200	2.38	

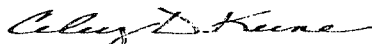
Surrogate: 1-Chlorooctane 93.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 102 % 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  
 BRIAN WALL  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 09/18/2013  
 Reported: 09/19/2013  
 Project Name: TURNER B NORTH BATTERY  
 Project Number: NOT GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/16/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: DP 3 @ 9' (H302268-07)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2	
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5	
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4	
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5	
Total BTEX	<0.300	0.300	09/18/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 113 % 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	864	16.0	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	<10.0	10.0	09/19/2013	ND	191	95.6	200	2.38	

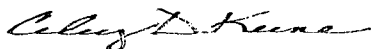
Surrogate: 1-Chlorooctane 98.1 % 65.2-140

Surrogate: 1-Chlorooctadecane 103 % 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.



Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

 Received: 09/18/2013  
 Reported: 09/19/2013  
 Project Name: TURNER B NORTH BATTERY  
 Project Number: NOT GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/16/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: DP 3 @ 29' (H302268-08)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2		
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5		
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4		
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5		
Total BTEX	<0.300	0.300	09/18/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 111 % 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	224	16.0	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	<10.0	10.0	09/19/2013	ND	191	95.6	200	2.38	

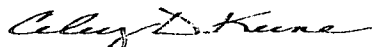
Surrogate: 1-Chlorooctane 104 % 65.2-140

Surrogate: 1-Chlorooctadecane 104 % 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  
 BRIAN WALL  
 RR1, BOX 24 B  
 KINGFISHER OK, 73750  
 Fax To: (405) 375-6693

 Received: 09/18/2013  
 Reported: 09/19/2013  
 Project Name: TURNER B NORTH BATTERY  
 Project Number: NOT GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/16/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: DP 3 @ 34' (H302268-09)**

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	09/18/2013	ND	1.99	99.3	2.00	15.2		
Toluene*	<0.050	0.050	09/18/2013	ND	2.04	102	2.00	14.5		
Ethylbenzene*	<0.050	0.050	09/18/2013	ND	2.08	104	2.00	14.4		
Total Xylenes*	<0.150	0.150	09/18/2013	ND	6.18	103	6.00	14.5		
Total BTEX	<0.300	0.300	09/18/2013	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	09/19/2013	ND	416	104	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	09/19/2013	ND	195	97.4	200	3.77	
DRO >C10-C28	<10.0	10.0	09/19/2013	ND	191	95.6	200	2.38	

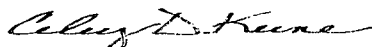
Surrogate: 1-Chlorooctane 91.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 96.6 % 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.



Celest D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

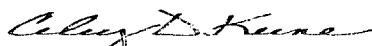
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

---

Cardinal Laboratories

\*=Accredited Analyte

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



---

Celey D. Keene, Lab Director/Quality Manager



# 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>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																						
Project Manager: <u>Brian Wall</u>		P.O. #:																								
Address:		Company:																								
City: State: Zip:		Attn:																								
Phone #: Fax #:		Address:																								
Project #: Project Owner:		City: <u>same</u>																								
Project Name:		State: Zip:																								
Project Location: <u>Turner B North Battery</u>		Phone #:																								
Sampler Name: <u>Miguel Gomez</u>		Fax #:																								
FOR LAB USE ONLY																										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.	SAMPLING		chlorides TPH BTEX														
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL													OTHER:	DATE	TIME
H302268																										
1	DP1 @ 49'	G	1																						9-16-13	
2	DP1 @ 9'	G	1																						9-16-13	
3	DP1 @ 54'	G	1																						9-16-13	
4	DP2 @ 9'	G	1																						9-16-13	
5	DP2 @ 34'	G	1																						9-16-13	
6	DP2 @ 29'	G	1																						9-16-13	
7	DP3 @ 9'	G	1																						9-16-13	
8	DP3 @ 29'	G	1										9-16-13													
9	DP3 @ 34'	G	1										9-16-13													

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date:	Received By:	Phone Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Miguel Gomez		Stephen Meade	Fax Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:		
Stephen Meade	9/17/13	Theresa Rush	B wall @ linn energy .com Aruth @ divers .Fired FS. .com		
Delivered By: (Circle One)	Date:	Sample Condition:	CHECKED BY:		
Sampler UPS - Bus - Other:	9/18/13-13.20	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Rush		

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

# Appendix V

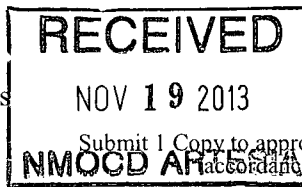
FINAL FORM C-141

---

Diversified Field Service, Inc.  
3412 N. Dal Paso  
Hobbs, NM 88240  
(575) 964-8394

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: Brian Wall	
Address: 2130 W. Bender, Hobbs, NM 88240	Telephone No.: 575-738-1739	
Facility Name: Turner B North Battery – Turner B 95	Facility Type: Battery	
Surface Owner: Federal	Mineral Owner: Unknown	API No. 30-015-28465

### LOCATION OF RELEASE

Unit Letter L	Section 20	Township 17S	Range 31E	Feet from the 2610	North/South Line South	Feet from the 1000	East/West Line West	County Eddy
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude 32.819971 Longitude 103.897239

### NATURE OF RELEASE

Type of Release: Oil/Produced Water	Volume of Release 85 bbls/5bbls	Volume Recovered 70 bbls/0 bbls
Source of Release: Battery	Date and Hour of Occurrence: 08/27/2013 8:00 am	Date and Hour of Discovery: 8/27/2013 1:00 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Burton – BLM Mike Bratcher - NMOCD	
By Whom? Brian Wall	Date and Hour: 8/28/2013	
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.* NA		
Describe Cause of Problem and Remedial Action Taken.* 8-27-2013 Pulled up to battery, seen oil tank #3 leaking from the bottom, called vacuum truck to pick up standing fluid.		
Describe Area Affected and Cleanup Action Taken.* Spill affected the entire area within the earthen containment. The facility was temporarily dismantled, and the site was excavated to 4 ft below ground surface. All earthen berms and the underlying soils were removed. Impacted soils were removed to a NMOCD approved disposal facility. Soil samples were collected via drill rig and were submitted to a commercial lab for chloride, TPH, and BTEX analyses. A 20 mil reinforced plastic liner was installed at 4 ft. The excavation was backfilled with clean soil and caliche. The site was compacted and leveled. A poly lined containment system was installed in place of the formerly bermed area and the battery was reconstructed within the new containment.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature:		<b>OIL CONSERVATION DIVISION</b>
Printed Name: Brian Wall		Approved by Environmental Specialist:
Title: Construction Foreman II		Approval Date: Expiration Date:
E-mail Address: bwall@linenergy.com		Conditions of Approval:
Date: Phone: 806-367-0645		Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary