



Linn Energy Turner B #47

REMEDIATION WORK PLAN

API No. 30-015-05435

Release Date: 3/30/2011 and 05/17/2013

Unit Letter B, Section 29, Township 17 South, Range 31 East

3/30/11 Release – 2RP-707 BLM # 11NU053TG

5/17/13 Release – 2RP-1668

September 15, 2014

Prepared by:

Environmental Department
Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
Phone: (575)964-8394

Mike Bratcher
Environmental Specialist
NM Oil Conservation District – Division 2
811 S. First St.
Artesia, NM 88210

RE: Linn Energy Turner B #47 – Remediation Work Plan
UL/B, Section 29, T17S, R31E
API No. 30-015-05435

Mr. Bratcher,

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

The site is located south west of Maljamar NM, in Eddy County. The leak site resulted from a produced water leak. The source of the leak was due to an injection wellhead leak. A C-141 was submitted to the NMOCD on March 30th, 2011 (2RP-707) and an Undesirable Event was submitted to the BLM (11NU053TG), with an unknown volume released. On May 23, 2013 a C-141 was submitted to the NMOCD for 63bbbs being released with 40bbbs of produced water being recovered due to 3" victaulic high pressure clamp on a steel line (2RP-1668). Both C-141's will be remediated with this plan as well.

Site Assessment and Delineation

On March 21, 2014, DFSI personnel obtained surface samples of the leak area, whereby indicating that contamination was present.

On April 4, 2014, DFSI returned to the Linn Energy Turner B #47 site to complete further delineation. On the map you will see that blue area is from the first release (03/30/2011) and the tan area is from the second release (5/23/2013). Field samples were taken on eight different sample points on the first release and twelve samples on the second release, each sample was tested for chlorides levels as well as TPH. On May 20, 2014 two soil bores were drilled to further delineate the site. The TPH samples were performed using a Mini Rae Photoionization Detector (PID). Each sample was found under the BLM/NMOCD standards, the samples were taken to Cardinal Lab of

Hobbs to obtain confirmation samples. And the results confirmed that bottom samples of each sample point were as follows:

Release Date: March 30th, 2011

SP1: 14' – 2280 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP2: 2' – 112 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP3: 3' – 432 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP4: 4' – 128 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP5: 4' – 448 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP6: 7' – 288 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP7: 2' – 64 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP8: 2' – 368 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH

Release Date: May 23rd, 2013

SP2: 2' – 64 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP3: 11' – 1020 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP4: 2' – 400 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP5: 2' – N/A mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH (will be taken in the field for chloride confirmation when excavated).
SP6: 2' – 64 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP7: 2' - <16 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP8: 2' - <16 mg/kg chlorides, <0.300 mg/kg BTEX, <10 mg/kg TPH
SP9: 2' - <16 mg/kg chlorides
SP10: 2' – 192 mg/kg chlorides
SP11: 1' - <16 mg/kg chlorides
SP12: 1' - <16 mg/kg chlorides
SP9-12, BTEX and TPH will be taken during excavation for confirmation

Soil Bore: May 20th, 2014

SB1: 80' – 1070 mg/kg chlorides, <0.300 mg/kg BTEX and <10 mg/kg TPH
SB2: 20' – 128 mg/kg chlorides, <0.300 mg/kg BTEX and <10 mg/kg TPH

DFSI has conducted a groundwater study of the area and has determined that according to the New Mexico Office of the State Engineer the average depth to groundwater for this area is 236 foot below ground surface. Therefore, no eminent danger of groundwater impact or threat to life is anticipated.

Conclusion

After careful review DFSI on behalf of Linn Energy would like to propose the following:

Option 1: Dig/Haul 4' with liner

For the release area that occurred on 03/30/2011, DFSI will excavate the area of SP1, SP5, SP6 and SP4 to 4'bgs, line with a 20 mil liner and haul to an approved BLM/NMOCD Disposal Site, backfill and reseed. Excavate SP2 and SP8 to 1'bgs, haul to an approved BLM/NMOCD Disposal Site, backfill and reseed. SP3, SP4 and SP7 DFSI will take surface confirmation samples and reseed this area.

For the Release area that occurred on May 23, 2014, DFSI will excavate the area of SP1, SP3 and SP5 to 4'bgs, line with a 20 mil liner and haul to an approved BLM/NMOCD Disposal site, backfill and reseed. Excavate SP2, SP4 and SP5 to 1'bgs, haul to an approved BLM/NMOCD Disposal Site, backfill and reseed. The area of SP7 thru SP12 will be tilled and reseeded.

All of the samples taken during the excavation will be sent into Cardinal Lab of Hobbs that fall under the required concentration levels allowed by the BLM/NMOCD for chlorides, BTEX and TPH.

Option 2: Deep Bury

The excavation depths will be the same as indicated in Option 1 for the same sample points. The contaminated soil that is excavated and will be deep buried at the Turner B #47 location. The excavation area will be backfilled with fresh topsoil in the pasture areas to ensure proper vegetation growth and caliche will be used for the road and location areas. The entire pasture area will be reseeded with a native vegetation mixture as per the BLM's guidelines for returning the site to its natural state. Following the approval of this plan and after the remediation has taken place, DFSI will submit all proper closure documentation to the NMOCD and BLM in accordance to the State and Federal Guidelines set forth.

Please feel free to contact me with any questions concerning this remediation plan request.

Sincerely,



Natalie Gladden
Environmental Consultant
Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
Office: (575)964-8394
Mobile: (575)602-1786
Fax: (575)964-8396
Email: ngladden@diversifiedfsi.com

cc Jeff Robertson
NM Bureau of Land Management

Attachments: Initial Form C-141
Site Diagram
Sample Data
Lab analytical data

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

MAY 23 2013

Submit 1 Copy to appropriate District Office in
conformance with 19.15.29 NMAC

Form C-141
Revised October 10, 2003

Release Notification and Corrective Action

nTMW 1315050599
Name of Company: Linn Operating 269324
Address: 2130 W. Bender Hobbs, NM 88240
Facility Name: Turner B # 47
OPERATOR
Contact: Gary Wink
Telephone No.: 575-738-1739
Facility Type: Injection
Initial Report ☒ Final Report ☐
Surface Owner: Federal Mineral Owner: Federal API No.: 3001505435

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	29	17S	31E	560	North	1980	East	Eddy

Latitude: 32.8112685289551 Longitude: -103.889762406761

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 63 bbls	Volume Recovered: 40 bbls
Source of Release: 3" Victaulic high pressure clamp- steel line	Date and Hour of Occurrence: 05/17/2013 1:00am	Date and Hour of Discovery: 05/17/2013 1:00am
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 05/17/2013 4:30pm	
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.*: Got alarm call out at Russel Turner injection plant around 1:00am, for Low header discharge pressure. Drove to Injection plant and pressures on headers were on zero, I Obie and Isidro drove around field and found location Turner B #47 where 3" high pressure victaulic clamp had blown off steel line.

Describe Area Affected and Cleanup Action Taken.*: From leak source East to West the impacted area is 20' x 170' all on location inside berm. From leak source outside berm from East to North West impacted area is 3' x 806', this impacted area was in arroyo. Replaced all high pressure Victaulic clamps and rubbers on steel line and return to injecting.

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: MAY 30 2013	Expiration Date:
E-mail Address: gawink@linenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 05/23/2013 Phone: 575-390-3477	Remediation per OCD Rule & Guidelines. SUBMIT REMEDIATION PROPOSAL NO LATER THAN:	

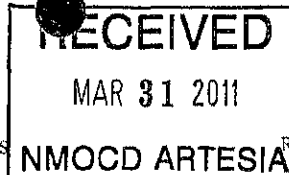
* Attach Additional Sheets if Necessary

June 30, 2013

2RP-1668

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 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

nmw 1109548918

Name of Company Linn Energy <i>269324</i>		Contact Dennis Potter
Address PO Box 69, Loco Hills, NM 88255		Telephone No. 575 677 2327
Facility Name Turner B #47		Facility Type Injection Well
Surface Owner BLM	Mineral Owner BLM	Lease No. NMLC029395B API 30-015-05435

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	29	17S	31E					Eddy

Latitude N32.8221 Longitude W103.8898 (Well Head)

NATURE OF RELEASE

Type of Release Produced Water/Hydrocarbons	Volume of Release Unknown	Volume Recovered Unknown
Source of Release Injection Well	Date and Hour of Occurrence Unknown	Date and Hour of Discovery Mar 11
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		

Describe Cause of Problem and Remedial Action Taken.*

The source of the release was at the well head. Produced water mixed with hydrocarbons were released and exited the location on the north side and flowed down hill to the north into an arroyo where the flow continued in a westward direction in the bottom of the arroyo. Visual evidence shows that some remedial action has taken place on the location and in the pasture immediately off location. The affected area is approximately 5' x 400'. Delineation will be conducted and a work plan will be submitted to NM OCD and BLM for review and approval.

Describe Area Affected and Cleanup Action Taken.*

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

Signature: <i>Dennis J. Potter</i>	OIL CONSERVATION DIVISION	
Printed Name: Dennis Potter	Approved by District <i>Mike Brannan</i>	
Title: Assistant Production Foreman	Approval Date: <i>4/5/11</i>	Expiration Date:
E-mail Address: dpotter@linenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 30Mar11 Phone: 505 206 7673	REMEDATION per OCD Rules and Guidelines. <u>SUBMIT REMEDIATION PROPOSAL BY:</u> <i>5/5/11</i>	

* Attach Additional Sheets If Necessary

2RP-707

Site Diagram

Linn, Turner B #47
UL/B, Sec. 29 T17S R31E
Eddy County, NM
Drafted By: Lance Crenshaw, 4-9-14

0 0.0075 0.015 0.03 Miles



Diversified Environmental Services

Company Name: Linn Energy
Location Name: Turner B #47

SP Date: 4/4/2014 5/20/2014
Rel Date: 3/30/2011

SP1	CHL	TPH	SP2	CHL	TPH	SP3	CHL	TPH	SP4	CHL	TPH	SP5	CHL	TPH
Surface	774	0.04	Surface	6123	0.2	Surface	374	0.03	Surface	449	0.04	Surface	274	0.04
1'	1399	0.04	1'	624	0.4	1'	474	0.02	1'	324	0.03	1'	774	0.05
2'	1949	0.05	2'	474	0.8	2'	874	0.03	2'	799	0.04	2'	1124	0.04
3'	5948	0.06	2'	112	<10	3'	624	0.08	3'	874	0.03	3'	774	0.03
4'	6748	0.04				3'	432	<10	4'	605	0.03	4'	699	0.03
5'	4623	0.03							4'	128	<10	4'	448	<10
6'	3373	0.03												
7'	3373	0.09												
8'	2449	0.07												
9'	3448	0.03												
10'	2399	0.04												
11'	1549	0.03												
12'	4548	0.04												
13'	2799	0.03												
14'	2024	0.03												
14'	2280	<10												

Excavate 4', 20 liner and bf

Excavate 1' and backfill

Till and reseed

Till and reseed

Excavate to 2', blend and backfill.

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Diversified Environmental Services

[illegible]

Excavate to 5', blend, then backfill

Till and reseed

Excavate 6" , haul off and bf

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Diversified Environmental Services

SB 1	CHL	TPH
5'	1774	0.5
10'	1524	0.3
15'	1349	0.2
20'	1224	0.1
25'	949	0.6
30'	1124	0.3
35'	1474	0.2
40'	1124	0.8
45'	2174	0.2
50'	1974	0.2
55'	2024	0.3
60'	1799	0.2
65'	1724	0.1
70'	1224	0.2
75'	1549	0.6
80'	1624	0.3
80'	1070	<10

Drilling rig refusal, started
getting flowback material
Could not drill deeper

[illegible]

Drilling rig refusal, started
getting flowback material
Could not drill deeper

[illegible][illegible][illegible]

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Diversified Environmental Services

Company Name: Linn Energy
Location Name: Turner B #47

SP Date: 3/21/2014 3/31/2014
Rel Date: 5/17/2013

SP1	CHL	TPH	SP2	CHL	TPH	SP3	CHL	TPH	SP4	CHL	TPH	SP5	CHL	TPH
Surface	25292	N/A	Surface	1999	1.4	Surface	5423	1.4	Surface	4748	N/A	Surface	4948	N/A
1'	3373	N/A	1'	374	0.6	1'	949	0.8	1'	374	N/A	1'	2124	N/A
2'	3149	N/A	2'	349	0.3	2'	2074	1.3	2'	624	N/A	2'	1824	N/A
3'	3624	N/A	2'	64	<10	3'	2199	1	2'	400	<10	2'		<10
4'	2449	N/A				4'	2774	1.1						
5'	3024	N/A				5'	2474	0.8						
6'	2489	N/A				6'	2024	0.5						
7'	2024	N/A				7'	2474	0.9						
8'	2274	N/A				8'	2374	0.3						
9'	2124	N/A				9'	3373	0.6						
10'	1974	N/A				10'	1899	0.3						
11'	1949	N/A				11'	1020	<10						
12'	1949	N/A												
13'	1550	N/A												
14'	1624	N/A												
15'	1525	N/A												
16'	1125	N/A												

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Diversified Environmental Services

[illegible]

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

[illegible]

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples



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

May 27, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER B #47

Enclosed are the results of analyses for samples received by the laboratory on 05/20/14 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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
 BRIAN WALL
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received: 05/20/2014
 Reported: 05/27/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 05/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SB 1 @ 80' (H401551-01)

BTX 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	05/22/2014	ND	2.26	113	2.00	2.72	
Toluene*	<0.050	0.050	05/22/2014	ND	2.21	111	2.00	2.27	
Ethylbenzene*	<0.050	0.050	05/22/2014	ND	2.14	107	2.00	2.39	
Total Xylenes*	<0.150	0.150	05/22/2014	ND	6.72	112	6.00	2.43	
Total BTX	<0.300	0.300	05/22/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 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	1070	16.0	05/23/2014	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	05/24/2014	ND	201	101	200	3.56	
DRO >C10-C28	<10.0	10.0	05/24/2014	ND	221	110	200	6.31	

Surrogate: 1-Chlorooctane 119 % 65.2-140

Surrogate: 1-Chlorooctadecane 121 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 05/20/2014
 Reported: 05/27/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 05/20/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SB 2 @ 20' (H401551-02)

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	05/22/2014	ND	2.26	113	2.00	2.72	
Toluene*	<0.050	0.050	05/22/2014	ND	2.21	111	2.00	2.27	
Ethylbenzene*	<0.050	0.050	05/22/2014	ND	2.14	107	2.00	2.39	
Total Xylenes*	<0.150	0.150	05/22/2014	ND	6.72	112	6.00	2.43	
Total BTEx	<0.300	0.300	05/22/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/22/2014	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/24/2014	ND	201	101	200	3.56	
DRO >C10-C28	<10.0	10.0	05/24/2014	ND	221	110	200	6.31	

Surrogate: 1-Chlorooctane 126 % 65.2-140

Surrogate: 1-Chlorooctadecane 125 % 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

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



Page 5 of 5

(575) 393-2326 FAX (575) 393-2476

[illegible]

April 30, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER B #47

Enclosed are the results of analyses for samples received by the laboratory on 04/23/14 9:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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
 BRIAN WALL
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/23/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ 2' (H401218-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	3.05	
Toluene*	<0.050	0.050	04/25/2014	ND	1.86	92.9	2.00	2.87	
Ethylbenzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	2.27	
Total Xylenes*	<0.150	0.150	04/25/2014	ND	5.67	94.4	6.00	1.26	
Total BTEX	<0.300	0.300	04/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/24/2014	ND	181	90.4	200	1.53		
DRO >C10-C28	<10.0	10.0	04/24/2014	ND	193	96.3	200	0.969		

Surrogate: 1-Chlorooctane 94.3 % 65.2-140

Surrogate: 1-Chlorooctadecane 94.1 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/23/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ 3' (H401218-02)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	3.05	
Toluene*	<0.050	0.050	04/25/2014	ND	1.86	92.9	2.00	2.87	
Ethylbenzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	2.27	
Total Xylenes*	<0.150	0.150	04/25/2014	ND	5.67	94.4	6.00	1.26	
Total BTEX	<0.300	0.300	04/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/24/2014	ND	181	90.4	200	1.53	
DRO >C10-C28	<10.0	10.0	04/24/2014	ND	193	96.3	200	0.969	

Surrogate: 1-Chlorooctane 98.8 % 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 OPERATING-HOBBS
 BRIAN WALL
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

 Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 04/23/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 @ 4' (H401218-03)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	3.05	
Toluene*	<0.050	0.050	04/25/2014	ND	1.86	92.9	2.00	2.87	
Ethylbenzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	2.27	
Total Xylenes*	<0.150	0.150	04/25/2014	ND	5.67	94.4	6.00	1.26	
Total BTEx	<0.300	0.300	04/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/24/2014	ND	181	90.4	200	1.53	
DRO >C10-C28	<10.0	10.0	04/24/2014	ND	193	96.3	200	0.969	

Surrogate: 1-Chlorooctane 95.8 % 65.2-140

Surrogate: 1-Chlorooctadecane 95.1 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/23/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 5 @ 4' (H401218-04)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	3.05	
Toluene*	<0.050	0.050	04/25/2014	ND	1.86	92.9	2.00	2.87	
Ethylbenzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	2.27	
Total Xylenes*	<0.150	0.150	04/25/2014	ND	5.67	94.4	6.00	1.26	
Total BTEX	<0.300	0.300	04/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 89.4-126

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/24/2014	ND	181	90.4	200	1.53	
DRO >C10-C28	<10.0	10.0	04/24/2014	ND	193	96.3	200	0.969	

Surrogate: 1-Chlorooctane 106 % 65.2-140

Surrogate: 1-Chlorooctadecane 97.9 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/23/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 6 @ 7' (H401218-05)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	3.05	
Toluene*	<0.050	0.050	04/25/2014	ND	1.86	92.9	2.00	2.87	
Ethylbenzene*	<0.050	0.050	04/25/2014	ND	1.87	93.4	2.00	2.27	
Total Xylenes*	<0.150	0.150	04/25/2014	ND	5.67	94.4	6.00	1.26	
Total BTEX	<0.300	0.300	04/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 89.4-126

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/24/2014	ND	181	90.4	200	1.53	
DRO >C10-C28	<10.0	10.0	04/24/2014	ND	193	96.3	200	0.969	

Surrogate: 1-Chlorooctane 103 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.7 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:LINN OPERATING-HOBBS
BRIAN WALL
2130 W. BENDER
HOBBS NM, 88240
Fax To: (575) 738-1740Received: 04/23/2014
Reported: 04/30/2014
Project Name: TURNER B #47
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NMSampling Date: 04/23/2014
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson**Sample ID: SP 7 @ 2' (H401218-06)**

BTEx 8260B		mg/kg		Analyzed By: ck						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/28/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/28/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/28/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/28/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/28/2014	ND						

Surrogate: Dibromofluoromethane 97.6 % 61.3-142

Surrogate: Toluene-d8 102 % 71.3-129

Surrogate: 4-Bromofluorobenzene 103 % 65.7-141

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/24/2014	ND	186	92.9	200	11.1		
DRO >C10-C28	<10.0	10.0	04/24/2014	ND	207	103	200	12.5		

Surrogate: 1-Chlorooctane 107 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/23/2014
 Reported: 04/30/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/23/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 8 @ 2' (H401218-07)

BTEX 8260B			mg/kg		Analyzed By: ck					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/28/2014	ND	2.35	118	2.00	6.15		
Toluene*	<0.050	0.050	04/28/2014	ND	2.13	106	2.00	8.09		
Ethylbenzene*	<0.050	0.050	04/28/2014	ND	2.03	102	2.00	7.15		
Total Xylenes*	<0.150	0.150	04/28/2014	ND	6.25	104	6.00	8.15		
Total BTEX	<0.300	0.300	04/28/2014	ND						

Surrogate: Dibromofluoromethane 101 % 61.3-142
Surrogate: Toluene-d8 100 % 71.3-129
Surrogate: 4-Bromofluorobenzene 104 % 65.7-141

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/24/2014	ND	186	92.9	200	11.1	
DRO >C10-C28	<10.0	10.0	04/24/2014	ND	207	103	200	12.5	

Surrogate: 1-Chlorooctane 107 % 65.2-140
Surrogate: 1-Chlorooctadecane 105 % 63.6-154

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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

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



Page 10 of 10

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

[illegible]

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

54

April 15, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER B #47

Enclosed are the results of analyses for samples received by the laboratory on 04/07/14 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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
 BRIAN WALL
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/04/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ 2' (H401052-01)

BTX 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	04/14/2014	ND	2.40	120	2.00	7.32	
Toluene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	7.06	
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.24	112	2.00	6.93	
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.44	107	6.00	6.88	
Total BTX	<0.300	0.300	04/14/2014	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	112	16.0	04/14/2014	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2014	ND	202	101	200	3.17	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	214	107	200	2.73	

Surrogate: 1-Chlorooctane 124 % 65.2-140

Surrogate: 1-Chlorooctadecane 112 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 04/07/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 3 @ 3' (H401052-02)

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	04/14/2014	ND	2.40	120	2.00	7.32		
Toluene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	7.06		
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.24	112	2.00	6.93		
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.44	107	6.00	6.88		
Total BTEx	<0.300	0.300	04/14/2014	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	04/14/2014	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2014	ND	189	94.3	200	4.01	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	202	101	200	2.69	

Surrogate: 1-Chlorooctane 110 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.9 % 63.6-154

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/07/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 @ 4' (H401052-03)

BTX 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	04/14/2014	ND	2.40	120	2.00	7.32		
Toluene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	7.06		
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.24	112	2.00	6.93		
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.44	107	6.00	6.88		
Total BTX	<0.300	0.300	04/14/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 89.4-126

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	04/14/2014	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2014	ND	189	94.3	200	4.01	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	202	101	200	2.69	

Surrogate: 1-Chlorooctane 122 % 65.2-140

Surrogate: 1-Chlorooctadecane 112 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/07/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 5 @ 4' (H401052-04)

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	04/14/2014	ND	2.47	123	2.00	5.14	
Toluene*	<0.050	0.050	04/14/2014	ND	2.30	115	2.00	3.80	
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	2.81	
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.51	108	6.00	2.24	
Total BTEx	<0.300	0.300	04/14/2014	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	448	16.0	04/14/2014	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2014	ND	189	94.3	200	4.01	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	202	101	200	2.69	

Surrogate: 1-Chlorooctane 106 % 65.2-140

Surrogate: 1-Chlorooctadecane 97.0 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/07/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 6 @ 7' (H401052-05)

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	04/14/2014	ND	2.47	123	2.00	5.14	
Toluene*	<0.050	0.050	04/14/2014	ND	2.30	115	2.00	3.80	
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	2.81	
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.51	108	6.00	2.24	
Total BTEx	<0.300	0.300	04/14/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	288	16.0	04/14/2014	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2014	ND	189	94.3	200	4.01	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	202	101	200	2.69	

Surrogate: 1-Chlorooctane 111 % 65.2-140

Surrogate: 1-Chlorooctadecane 98.4 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/07/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 7 @ 2' (H401052-06)

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	04/14/2014	ND	2.47	123	2.00	5.14	
Toluene*	<0.050	0.050	04/14/2014	ND	2.30	115	2.00	3.80	
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	2.81	
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.51	108	6.00	2.24	
Total BTEx	<0.300	0.300	04/14/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	04/14/2014	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/12/2014	ND	189	94.3	200	4.01	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	202	101	200	2.69	

Surrogate: 1-Chlorooctane 115 % 65.2-140

Surrogate: 1-Chlorooctadecane 104 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/07/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 8 @ 2' (H401052-07)

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	04/14/2014	ND	2.47	123	2.00	5.14	
Toluene*	<0.050	0.050	04/14/2014	ND	2.30	115	2.00	3.80	
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	2.81	
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.51	108	6.00	2.24	
Total BTEx	<0.300	0.300	04/14/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	368	16.0	04/14/2014	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	04/12/2014	ND	189	94.3	200	4.01	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	202	101	200	2.69	

Surrogate: 1-Chlorooctane 107 % 65.2-140

Surrogate: 1-Chlorooctadecane 100 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/07/2014
 Reported: 04/15/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 04/07/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 14' (H401052-08)

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	04/14/2014	ND	2.47	123	2.00	5.14	
Toluene*	<0.050	0.050	04/14/2014	ND	2.30	115	2.00	3.80	
Ethylbenzene*	<0.050	0.050	04/14/2014	ND	2.27	114	2.00	2.81	
Total Xylenes*	<0.150	0.150	04/14/2014	ND	6.51	108	6.00	2.24	
Total BTEx	<0.300	0.300	04/14/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	2280	16.0	04/14/2014	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	04/12/2014	ND	189	94.3	200	4.01	
DRO >C10-C28	<10.0	10.0	04/12/2014	ND	202	101	200	2.69	

Surrogate: 1-Chlorooctane 119 % 65.2-140

Surrogate: 1-Chlorooctadecane 111 % 63.6-154

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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

BILL TO

ANALYSIS REQUEST

Company Name:	Lin Energy	P.O. #:	
Project Manager:	Brian Wall	Company:	Lin Energy
Address:		Attn:	Brian Wall
City:		Address:	
State:		City:	
Zip:		State:	
Phone #:		Zip:	
Fax #:		Phone #:	
Project #:		Fax #:	
Project Name:	Spill # 11 (Heater)		
Project Location:	Turner B 47 - Heater Spill # 2		
Sampler Name:	Michael Allen		

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					DATE	TIME										
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE												
14401057	1 SP 20 21		1			X			4/4/14	11:20										
	2 SP 30 31		1			X			4/7/14	9:00										
	3 SP 40 41		1			X			4/7/14	9:30										
	4 SP 50 51		1			X			4/7/14	10:15										
	5 SP 60 61		1			X			4/7/14	11:20										
	6 SP 70 71		1			X			4/7/14	12:00										
	7 SP 80 81		1			X			4/7/14	12:50										
	8 SP 10 11		1			X			4/7/14	10:58										

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Relinquished By:	Date:	Received By:
	4/7/14	

Relinquished By:	Date:	Received By:
	3:50	

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	(Initials)

Phone Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Fax Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:

REMARKS:

E-mail Results To:
Ngladden@diversifiedfsi.com
Rpons@diversifiedfsi.com
Tjennings@diversifiedfsi.com



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

April 09, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: TURNER B #47

Enclosed are the results of analyses for samples received by the laboratory on 04/03/14 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 04/03/2014
 Reported: 04/09/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 03/31/2014
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP. 2 @ 2' (H401007-01)

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	04/07/2014	ND	416	104	400	3.92	

Sample ID: SP. 3 @ 11' (H401007-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1020	16.0	04/07/2014	ND	416	104	400	3.92	

Sample ID: SP. 4 @ 2' (H401007-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	04/07/2014	ND	416	104	400	3.92	

Sample ID: SP. 6 @ 2' (H401007-04)

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	04/07/2014	ND	416	104	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 04/03/2014
 Reported: 04/09/2014
 Project Name: TURNER B #47
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 04/02/2014
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP. 7 @ 2' (H401007-05)

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	04/07/2014	ND	416	104	400	3.92		

Sample ID: SP. 8 @ 2' (H401007-06)

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	04/07/2014	ND	416	104	400	3.92		

Sample ID: SP. 9 @ 2' (H401007-07)

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	04/07/2014	ND	416	104	400	3.92		

Sample ID: SP. 10 @ 2' (H401007-08)

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	04/07/2014	ND	416	104	400	3.92	

Sample ID: SP. 11 @ 1' (H401007-09)

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	04/07/2014	ND	416	104	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:LINN OPERATING-HOBBS
BRIAN WALL
2130 W. BENDER
HOBBS NM, 88240
Fax To: (575) 738-1740Received: 04/03/2014
Reported: 04/09/2014
Project Name: TURNER B #47
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NMSampling Date: 04/03/2014
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson**Sample ID: SP. 12 @ 1' (H401007-10)****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	04/07/2014	ND	416	104	400	3.92	

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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

BILL TO

ANALYSIS REQUEST

Company Name: Linn Energy

Project Manager: Grison Wall

Address:

City:

Phone #:

Project #:

Project Name:

Project Location: Turner B 47

Sampler Name: Michael Alvarado

FOR LAB USE ONLY

P.O. #:

Company: Linn Energy

Attn: Grison Wall

Address:

City:

State: Zip:

Phone #:

Fax #:

MATRIX

PRESERV

SAMPLING

Lab I.D.

Sample I.D.

H4PDD7

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

3/3/14 10:45

4/1/14 8:53

4/1/14 10:00

4/2/14 12:00

4/2/14 12:15

4/3/14 9:25

4/3/14 10:15

4/3/14 10:40

4/3/14 10:50

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS:

E-mail Results To:

Ngladden@diversifiedfsi.com

Rpons@diversifiedfsi.com

Tjennings@diversifiedfsi.com

Relinquished By:

Relinquished By:

Date: 4/3/14

Time: 7:00

Date: 4/3/14

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition

Cool Intact

Yes Yes

No No

CHECKED BY:

(Initials)



ANALYSIS REQUEST

+ Cardinal cannot accept verbal changes. Please fax written changes to (313) 336-2222