

RECEIVED

By JKeyes at 2:30 pm, Jan 06, 2016

APPROVED

By JKeyes at 2:30 pm, Jan 06, 2016



Stipulations:

Removal of soil around SP1 and SP2 to 5' bgs. 20 mil liner to be used at the SP5 excavation.

CMU 42 (A Battery)

REMEDIATION WORK PLAN

API No. 30-025-01499

Release Date: July 7, 2015

Unit Letter C, Section 20, Township 17 South, Range 33 East

January 6, 2016

Prepared by:

Lance Crenshaw, Project Manager
Environmental Department
Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
Phone: (575)964-8394
Fax: (575)393-8396

Kellie Jones
Environmental Specialist
NM Oil Conservation District-Division 2
1625 N. French
Hobbs, NM 88240

RE: Linn Energy, CMU #42 (A Battery) – Remediation Work Plan
UL/C, Section 20, T17S, R33E
API No. 30-025-01499

Ms. Jones,

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

The site is located southeast of Maljamar, NM, in Lea County. The leak site resulted from a split in the poly line that runs from the transfer pump at the CMU A Battery to the CMU North Injection Plant. The poly line had a split on the bottom side. The leak ran down a slope towards the northeast for approximately 100', with the widest point of the leak at 40'. Approximately 10 bbls of produced water was released, with none recovered. A site map is attached. This spill occurred on top of the Caprock Escarpment. A C-141 was drafted on July 8, 2015.

Site Assessment and Delineation

On November 19, 2015 DFSI personnel responded to the release site to sample eight points of the spill area. The samples were tested for chloride levels as well as BTEX. The BTEX samples

On December 10, 2015 DFSI personnel returned to the site and to drill two bore holes for confirmation samples. SB1 was placed in between SP1 and SP2, and SB2 was placed in the area of SP5. Clean samples attained at the bore holes were taken to a commercial laboratory for confirmation. Those results are attached

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 190 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:

In the areas of SP1, SP2, and SP5, excavate to 4' BGS, install either river rock or a 20-mil liner, and backfill with native topsoil. The area will be seeded with a BLM approved mix. Since the rest of the sample points were clean at the surface and down to 2' BGS, DFSI proposes to just reseed the entire affected area with a BLM approved mix. All contaminated materials will be hauled to an approved NM State Disposal.

Following the approval of the above plan, 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,



Michael Burton
Environmental Operations Director
Diversified Field Service, Inc.
206 West Snyder
Hobbs, NM 88240
Office: (575)964-8394
Mobile: (575)390-5454
Fax: (575)964-8396
Email: Mburton@diversifiedfsi.com

Attachments: Initial Form C-141
Site/Sample Map
Photos
Sample Data
Groundwater Data

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

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Linn Operating Inc.	Contact	E.L. Gonzales
Address	2130 W Bender Blvd Hobbs, NM 88240	Telephone No.	575-738-1739
Facility Name	closest well - Caprock Maljamar Unit #042	Facility Type	Injection
Surface Owner	State	Mineral Owner	API No. 30-025-01499

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	20	17S	33E	660	North	1980	West	Lea

Latitude 32.8255157 Longitude -103.6875153 NAD83

NATURE OF RELEASE


Type of Release	Produced Water	Volume of Release	10 bbls	Volume Recovered	0 bbls
Source of Release	Poly pipeline	Date and Hour of Occurrence	07/07/2015	Date and Hour of Discovery	07/07/2015 0700
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* At approx. 7am leak was found at CMU Leases. When I arrived I had found that the poly line from our transfer pump at the CMU A battery to the CMU N. Inj plant. The poly pipe had a split on the bottom side.

Describe Area Affected and Cleanup Action Taken.* Leak ran down a downward slope towards the northeast. Size of area affected was approx. 100' long at the longest and 40' wide at the widest point. Middle of leak was about 15' wide. Approx. 10bbls of produce water was spilled.

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: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: E.L. Gonzales	Approved by Environmental Specialist:		
Title: Production Supervisor	Approval Date:	Expiration Date:	
E-mail Address: elgonzales@linenergy.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 07/08/2015	Phone: 505-504-8002		

* Attach Additional Sheets If Necessary

Site Diagram

Linn, CMU #42
UL/C, Sec. 20 T17S R33E
Lea County, NM
Drafted By: Lance Crenshaw, 11-18-15

0 0.0075 0.015 0.03 Miles

Spill Area:
24,367 sq. ft.

Legend



Misc_points

Types


-  Electrical Box
-  Power Pole
-  Headers
-  Injection
-  Pumpjacks
-  Tanks
-  Valves
-  Other
-  Soil Bores
-  sample_pts
-  Source

Pipeline





Type

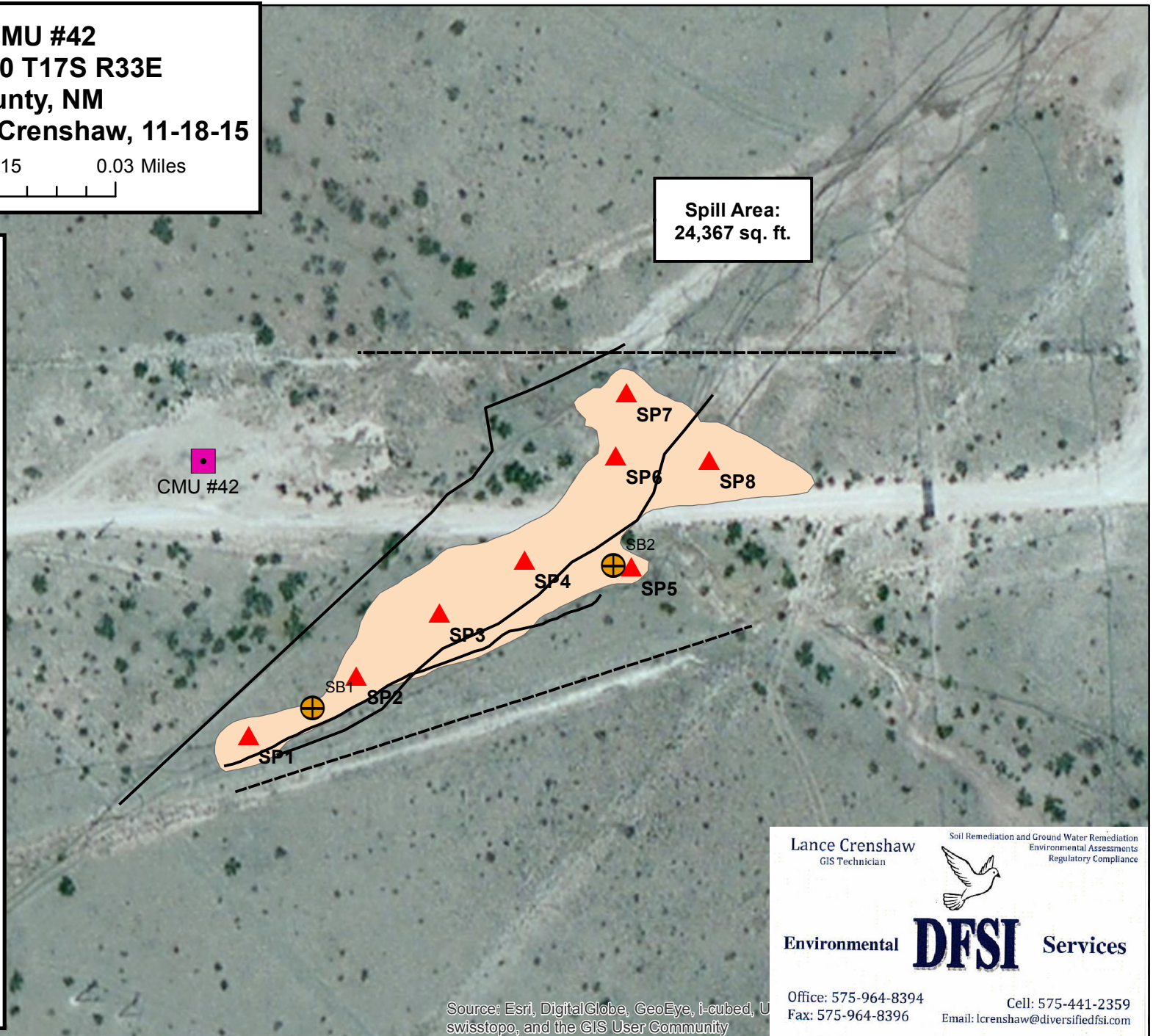
-  Above Ground Line
-  Buried Line

Spill

-  <all other values>

Spill_Media

-  Oil and Produced H2O
-  Oil
-  Other
-  Produced Water



Source: Esri, DigitalGlobe, GeoEye, i-cubed, U
 swisstopo, and the GIS User Community

Lance Crenshaw
 GIS Technician

Soil Remediation and Ground Water Remediation
 Environmental Assessments
 Regulatory Compliance



Environmental **DFS** Services

Office: 575-964-8394
 Fax: 575-964-8396

Cell: 575-441-2359
 Email: lcrenshaw@diversifiedfsi.com



CMU #42 (A Battery)

PHOTO PAGE



Source of spill in pasture area



Preparing to drill bore holes at spill area



Collecting samples



Collecting samples

Diversified Environmental Services

Company Name:	Linn
Location Name:	CMU #42

SP Date: 11/19/2015
Rel Date: _____

[illegible]

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Diversified Environmental Services

SP6	CHL	PID	SP7	CHL	PID	SP8	CHL	PID	SB1	CHL	PID	SB2	CHL	PID
Surface	120	0.3	Surface	180	0.4	Surface	121	0.4	2'	5,127	0.8	3'	4,152	310.1
1'	117	0.3	1'	90	0.4	1'	117	0.2	3'	5,115	0.5	4'	5,780	487
									4'	2,770	0.1	5'	4,947	738
Surface	64		Surface	96		Surface	48		5'	1,607	0.5	6'	5,782	556
1'	64		1'	48		1'	32		6'	553	0.2	7'	6,465	624
									7'	698	2.2	8'	4,399	395
									8'	543	2	9'	3,389	173
												10'	2,360	193.3
												15'	1,090	0.8
												20'	597	0.9
												25'	543	2.9
												20'	528	
												25'	480	

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples



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

November 25, 2015

JOE HERNANDEZ

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: CMU #42

Enclosed are the results of analyses for samples received by the laboratory on 11/19/15 16:15.

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,

Hope S. Moreno For Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

 Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 3 @ SURFACE (H503069-01)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTX	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 93.6 % 35-147

Surrogate: 1-Chlorooctadecane 102 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

 Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 3 @ 1' (H503069-02)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTX	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 97.5 % 35-147

Surrogate: 1-Chlorooctadecane 108 % 28-171

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 4 @ SURFACE (H503069-03)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

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	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 94.8 % 35-147

Surrogate: 1-Chlorooctadecane 104 % 28-171

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*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 4 @ 1' (H503069-04)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	


Surrogate: 1-Chlorooctane 94.7 % 35-147

Surrogate: 1-Chlorooctadecane 102 % 28-171

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*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

 Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 6 @ SURFACE (H503069-05)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500CI-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	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 90.3 % 35-147

Surrogate: 1-Chlorooctadecane 96.6 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 6 @ 1' (H503069-06)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.6-140

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	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 90.4 % 35-147

Surrogate: 1-Chlorooctadecane 97.8 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 7 @ SURFACE (H503069-07)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 81.8 % 35-147

Surrogate: 1-Chlorooctadecane 88.0 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

 Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 7 @ 1' (H503069-08)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 92.3 % 35-147

Surrogate: 1-Chlorooctadecane 99.8 % 28-171

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 8 @ SURFACE (H503069-09)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	

Surrogate: 1-Chlorooctane 88.6 % 35-147

Surrogate: 1-Chlorooctadecane 95.3 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/19/2015
 Reported: 11/25/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: LEA COUNTY

 Sampling Date: 11/19/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SAMPLE PT. 8 @ 1' (H503069-10)

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	11/23/2015	ND	1.84	91.9	2.00	1.55	
Toluene*	<0.050	0.050	11/23/2015	ND	2.10	105	2.00	1.90	
Ethylbenzene*	<0.050	0.050	11/23/2015	ND	2.11	105	2.00	2.31	
Total Xylenes*	<0.150	0.150	11/23/2015	ND	6.21	104	6.00	2.09	
Total BTEx	<0.300	0.300	11/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

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	11/24/2015	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	11/22/2015	ND	197	98.3	200	1.26	
DRO >C10-C28	<10.0	10.0	11/22/2015	ND	186	93.0	200	0.310	


Surrogate: 1-Chlorooctane 94.1 % 35-147

Surrogate: 1-Chlorooctadecane 103 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Hope S. Moreno For Caley 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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Hope S. Moreno For 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>Lin</u>		P.O. #:		BILL TO												ANALYSIS REQUEST																													
Project Manager: <u>Joe Hernandez</u>		Company:																																											
Address:		City:		State:		Zip:		Attn:		Address:		City:		State:		Zip:																													
Phone #:		Fax #:		Project Owner:		City:		State:		Zip:		Phone #:		Fax #:																															
Project Name: <u>Lin</u>		Project Location: <u>CMU #42</u>		Sample Name: <u>Chris Flores</u>		Matrix:		Preserv:		Sampling:																																			
FOR LAB USE ONLY		Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		ICE / COOL		OTHER:		DATE		TIME															
H503049		1		Sample Pt. 3		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		10:00 AM		X		Chloride													
2		Sample Pt. 3		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		10:10 AM		X		BTEX													
3		Sample Pt. 4		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		10:20 AM		X		TPH													
4		Sample Pt. 4		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		10:40 AM		X															
5		Sample Pt. 6		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		11:10 AM		X															
6		Sample Pt. 6		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		11:20 AM		X															
7		Sample Pt. 7		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		11:40 AM		X															
8		Sample Pt. 7		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		11:50 AM		X															
9		Sample Pt. 8		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		12:10 PM		X															
10		Sample Pt. 8		Surface		G		1		✓		✓		✓		✓		✓		✓		✓		✓		✓		12:20 PM		X															
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Delivered By: (Circle One)		Sampler - UPS - Bus - Other:		Sample Condition: <u>388</u>		CHECKED BY: <u>[Signature]</u>																																							

December 17, 2015

DENNIS POTTER

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: CMU #42

Enclosed are the results of analyses for samples received by the laboratory on 12/10/15 15:10.

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

 Received: 12/10/2015
 Reported: 12/17/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 12/10/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SOIL BORE 2 @ 20' (H503219-03)

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	12/15/2015	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/15/2015	ND	1.72	85.8	2.00	0.311	
Ethylbenzene*	<0.050	0.050	12/15/2015	ND	1.75	87.7	2.00	0.503	
Total Xylenes*	<0.150	0.150	12/15/2015	ND	5.25	87.4	6.00	0.204	
Total BTX	<0.300	0.300	12/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	12/15/2015	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	12/14/2015	ND	203	101	200	3.17	
DRO >C10-C28	<10.0	10.0	12/14/2015	ND	199	99.5	200	5.34	

Surrogate: 1-Chlorooctane 96.3 % 35-147

Surrogate: 1-Chlorooctadecane 96.9 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	12/10/2015	Sampling Date:	12/10/2015
Reported:	12/17/2015	Sampling Type:	Soil
Project Name:	CMU #42	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE 2 @ 25' (H503219-04)

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	12/15/2015	ND	1.70	85.2	2.00	0.0320		
Toluene*	<0.050	0.050	12/15/2015	ND	1.72	85.8	2.00	0.311		
Ethylbenzene*	<0.050	0.050	12/15/2015	ND	1.75	87.7	2.00	0.503		
Total Xylenes*	<0.150	0.150	12/15/2015	ND	5.25	87.4	6.00	0.204		
Total BTEX	<0.300	0.300	12/15/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	12/15/2015	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	12/14/2015	ND	203	101	200	3.17		
DRO >C10-C28	<10.0	10.0	12/14/2015	ND	199	99.5	200	5.34		

Surrogate: 1-Chlorooctane 88.2 % 35-147

Surrogate: 1-Chlorooctadecane 89.4 % 28-171

Cardinal Laboratories

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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

December 23, 2015

JOE HERNANDEZ

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: CMU #42

Enclosed are the results of analyses for samples received by the laboratory on 12/21/15 13:25.

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

Received:	12/21/2015	Sampling Date:	12/21/2015
Reported:	12/23/2015	Sampling Type:	Soil
Project Name:	CMU #42	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOIL BORE 1 @ 7' (H503305-01)

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	12/22/2015	ND	2.11	105	2.00	0.0249	
Toluene*	<0.050	0.050	12/22/2015	ND	2.14	107	2.00	0.928	
Ethylbenzene*	<0.050	0.050	12/22/2015	ND	1.95	97.6	2.00	1.06	
Total Xylenes*	<0.150	0.150	12/22/2015	ND	6.25	104	6.00	0.148	
Total BTX	<0.300	0.300	12/22/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	672	16.0	12/22/2015	ND	416	104	400	7.41		

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	12/22/2015	ND	188	93.9	200	0.715		
DRO >C10-C28	<10.0	10.0	12/22/2015	ND	176	88.2	200	5.36		

Surrogate: 1-Chlorooctane 98.5 % 35-147

Surrogate: 1-Chlorooctadecane 94.3 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 12/21/2015
 Reported: 12/23/2015
 Project Name: CMU #42
 Project Number: NOT GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/21/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SOIL BORE 1 @ 8' (H503305-02)

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	12/22/2015	ND	2.11	105	2.00	0.0249	
Toluene*	<0.050	0.050	12/22/2015	ND	2.14	107	2.00	0.928	
Ethylbenzene*	<0.050	0.050	12/22/2015	ND	1.95	97.6	2.00	1.06	
Total Xylenes*	<0.150	0.150	12/22/2015	ND	6.25	104	6.00	0.148	
Total BTEx	<0.300	0.300	12/22/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	12/22/2015	ND	416	104	400	7.41	

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	12/22/2015	ND	188	93.9	200	0.715	
DRO >C10-C28	<10.0	10.0	12/22/2015	ND	176	88.2	200	5.36	

Surrogate: 1-Chlorooctane 109 % 35-147

Surrogate: 1-Chlorooctadecane 99.0 % 28-171

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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

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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 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 02875	L	LE		2	2	20		17S	33E	623662	3632717*	250	190	60

Average Depth to Water: **190 feet**

Minimum Depth: **190 feet**

Maximum Depth: **190 feet**

Record Count: 1

PLSS Search:

Section(s): 20

Township: 17S

Range: 33E

*UTM location was derived from PLSS - see Help

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