Appendix V

LABORATORY ANALYSES

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



May 12, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J. L. KEEL B #52

Enclosed are the results of analyses for samples received by the laboratory on 05/02/14 15:40.

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 accreditated 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.

Celeg D. Keine

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



LINN OPERATING-HOBBS **BRIAN WALL** 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received:

05/02/2014

Reported:

05/12/2014

Project Name: Project Number: J. L. KEEL B #52 NONE GIVEN

Project Location:

EDDY COUNTY

Sampling Date:

05/01/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP. 1 @ 4' (H401355-01)

BTEX 8260B	mg,	'kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/09/2014	ND	2.37	119	2.00	0.0531	
Toluene*	< 0.050	0.050	05/09/2014	ND	2.38	119	2.00	0.125	
Ethylbenzene*	<0.050	0.050	05/09/2014	ND	2.24	112	2.00	0.819	
Total Xylenes*	<0.150	0.150	05/09/2014	ND	6.91	115	6.00	0.228	
Total BTEX	<0.300	0.300	05/09/2014	ND					
Surrogate: Dibromofluoromethane	99.5	% 61.3-14	2						
Surrogate: Toluene-d8	106	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	94.1	% 65.7-14	1						
Chloride, SM4500CI-B	mg,	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Chloride	304	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	197	98.4	200	1.30	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	215	108	200	2.80	
Surrogate: 1-Chlorooctane	113 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	116 9	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey & Keine



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

Received: Reported:

Project Location:

05/02/2014

Project Name: Project Number: 05/12/2014 J. L. KEEL B #52 NONE GIVEN **EDDY COUNTY**

Sampling Date:

05/01/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: SP. 2 @ 4' (H401355-02)

B.	Т	E)	(8	2	6	0	В	
_									_

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/09/2014	ND	2.37	119	2.00	0.0531	
Toluene*	<0.050	0.050	05/09/2014	ND	2.38	119	2.00	0.125	
Ethylbenzene*	<0.050	0.050	05/09/2014	ND	2.24	112	2.00	0.819	
Total Xylenes*	<0.150	0.150	05/09/2014	ND	6.91	115	6.00	0.228	
Total BTEX	<0.300	0.300	05/09/2014	ND					
Surrogate: Dibromofluoromethane	73.9	% 61.3-14	2						
Surrogate: Toluene-d8	109	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	98.5	% 65.7-14	1						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	197	98.4	200	1.30	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	215	108	200	2.80	
Surrogate: 1-Chlorooctane	110 9	% 65.2-14	0		· · · · · · · · · · · · · · · · · · ·				
Surrogate: 1-Chlorooctadecane	112 9	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey & Keene



LINN OPERATING-HOBBS **BRIAN WALL** 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received:

05/02/2014

Sampling Date:

05/02/2014

Reported:

05/12/2014

Sampling Type:

Soil

Project Name:

J. L. KEEL B #52

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY

Sample ID: SP. 3 @ 4' (H401355-03)

BTEX 8260B	mg/	'kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/09/2014	ND	2.37	119	2.00	0.0531	
Toluene*	<0.050	0.050	05/09/2014	ND	2.38	119	2.00	0.125	
Ethylbenzene*	<0.050	0.050	05/09/2014	ND	2.24	112	2.00	0.819	
Total Xylenes*	<0.150	0.150	05/09/2014	ND	6.91	115	6.00	0.228	
Total BTEX	<0.300	0.300	05/09/2014	ND					
Surrogate: Dibromofluoromethane	95.9	% 61.3-14	2						
Surrogate: Toluene-d8	106 9	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	94.1	% 65.7-14	I						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	197	98.4	200	1.30	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	215	108	200	2.80	
Surrogate: 1-Chlorooctane	95.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	98.5	% 63.6-15	4						

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*=Accredited Analyte

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Celey & Keine



LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received:

05/02/2014

Reported:

05/12/2014

Project Name: Project Number: J. L. KEEL B #52 NONE GIVEN

Project Location:

EDDY COUNTY

Sampling Date:

05/02/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP. 4 @ 2' (H401355-04)

BTEX 8260B	mg	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/10/2014	ND	2.28	114	2.00	2.50	
Toluene*	<0.050	0.050	05/10/2014	ND	2.27	114	2.00	0.752	
Ethylbenzene*	<0.050	0.050	05/10/2014	ND	2.18	109	2.00	0.311	
Total Xylenes*	<0.150	0.150	05/10/2014	ND	6.74	112	6.00	2.10	
Total BTEX	<0.300	0.300	05/10/2014	ND					
Surrogate: Dibromofluoromethane	95.5	% 61.3-14	2						
Surrogate: Toluene-d8	104	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	96.4	% 65.7-14	I						
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	197	98.4	200	1.30	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	215	108	200	2.80	
Surrogate: 1-Chlorooctane	122	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	121	% 63.6-15	4						

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Celey D. Keene



LINN OPERATING-HOBBS **BRIAN WALL** 2130 W. BENDER HOBBS NM, 88240

Fax To: (575) 738-1740

Received:

05/02/2014

Sampling Date:

05/02/2014

Reported:

Sampling Type:

Soil

Project Name:

05/12/2014 J. L. KEEL B #52

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY

Sample ID: SP. 5 @ 2' (H401355-05)

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/10/2014	ND	2.28	114	2.00	2.50	
Toluene*	<0.050	0.050	05/10/2014	ND	2.27	114	2.00	0.752	
Ethylbenzene*	<0.050	0.050	05/10/2014	ND	2.18	109	2.00	0.311	
Total Xylenes*	<0.150	0.150	05/10/2014	ND	6.74	112	6.00	2.10	
Total BTEX	<0.300	0.300	05/10/2014	ND					
Surrogate: Dibromofluoromethane	99.1	% 61.3-14	2						
Surrogate: Toluene-d8	106	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	101	% 65.7-14	I						
Chloride, SM4500Cl-B	mg,	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	197	98.4	200	1.30	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	215	108	200	2.80	
Surrogate: 1-Chlorooctane	110 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	111 9	63.6-15	4						

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LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To: (575) 738-1740

Received: 05/02/2014 Reported: 05/12/2014

Project Name: J. L. KEEL B #52
Project Number: NONE GIVEN
Project Location: EDDY COUNTY

Sampling Date: 05/02/2014 Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP. 8 @ 2' (H401355-06)

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/10/2014	ND	2.28	114	2.00	2.50	
Toluene*	<0.050	0.050	05/10/2014	ND	2.27	114	2.00	0.752	
Ethylbenzene*	<0.050	0.050	05/10/2014	ND	2.18	109	2.00	0.311	
Total Xylenes*	<0.150	0.150	05/10/2014	ND	6.74	112	6.00	2.10	
Total BTEX	<0.300	0.300	05/10/2014	ND					
Surrogate: Dibromofluoromethane	94.4	% 61.3-14	2						
Surrogate: Toluene-d8	106	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	96.4	% 65.7-14	I						
Chloride, SM4500CI-B	mg,	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg,	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	197	98.4	200	1.30	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	215	108	200	2.80	
Surrogate: 1-Chlorooctane	113	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	116	% 63.6-15	4						

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LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To: (575) 738-1740

Received: 05/02/2014 Reported: 05/12/2014

Project Name:

Project Number:

NONE GIVEN

Project Location:

BDDY COUNTY

Sampling Date: 05/02/2014 Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP. 9 @ 2' (H401355-07)

DTEV 0360D

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/10/2014	ND	2.28	114	2.00	2.50	
Toluene*	< 0.050	0.050	05/10/2014	ND	2.27	114	2.00	0.752	
Ethylbenzene*	<0.050	0.050	05/10/2014	ND	2.18	109	2.00	0.311	
Total Xylenes*	<0.150	0.150	05/10/2014	ND	6.74	112	6.00	2.10	
Total BTEX	<0.300	0.300	05/10/2014	ND					
Surrogate: Dibromofluoromethane	94.9	% 61.3-14	2						
Surrogate: Toluene-d8	105	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	96.5	% 65.7-14	I						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	197	98.4	200	1.30	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	215	108	200	2.80	
Surrogate: 1-Chlorooctane	108	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	111 9	63.6-15	4						

Analysis of Burney

*=Accredited Analyte

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Celey D. Keine



LINN OPERATING-HOBBS **BRIAN WALL** 2130 W. BENDER HOBBS NM, 88240

Fax To: (575) 738-1740

Received:

05/02/2014

Reported:

05/12/2014

Project Name: Project Number:

Project Location:

J. L. KEEL B #52 NONE GIVEN **EDDY COUNTY**

Sampling Date:

05/02/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP. 10 @ 2' (H401355-08)

В	T	EX	8	2	6	0	В	

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/10/2014	ND	2.28	114	2.00	2.50	
Toluene*	<0.050	0.050	05/10/2014	ND	2.27	114	2.00	0.752	
Ethylbenzene*	<0.050	0.050	05/10/2014	ND	2.18	109	2.00	0.311	
Total Xylenes*	<0.150	0.150	05/10/2014	ND	6.74	112	6.00	2.10	
Total BTEX	<0.300	0.300	05/10/2014	ND					
Surrogate: Dibromofluoromethane	98.0	% 61.3-14	2						
Surrogate: Toluene-d8	102	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	94.4	% 65.7-14	I						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	200	100	200	4.31	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	221	111	200	4.59	
Surrogate: 1-Chlorooctane	123	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	129	% 63.6-15	4						

Cardinal Laboratories *=Accredited Analyte

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Celeg & Keine



LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received: Reported: 05/02/2014

05/12/2014

2/2014

Project Name: Project Number: J. L. KEEL B #52 NONE GIVEN

Project Location:

EDDY COUNTY

Sampling Date:

05/02/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP. 11 @ 2' (H401355-09)

BTEX 8260B	mg	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/10/2014	ND	2.28	114	2.00	2.50	
Toluene*	< 0.050	0.050	05/10/2014	ND	2.27	114	2.00	0.752	
Ethylbenzene*	< 0.050	0.050	05/10/2014	ND	2.18	109	2.00	0.311	
Total Xylenes*	< 0.150	0.150	05/10/2014	ND	6.74	112	6.00	2.10	
Total BTEX	<0.300	0.300	05/10/2014	ND					
Surrogate: Dibromofluoromethane	97.5	% 61.3-14	2						
Surrogate: Toluene-d8	106	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	99.0	% 65.7-14	1						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/08/2014	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/09/2014	ND	200	100	200	4.31	
DRO >C10-C28	<10.0	10.0	05/09/2014	ND	221	111	200	4.59	
Surrogate: 1-Chlorooctane	108	% 65.2-14	0						1.00
Surrogate: 1-Chlorooctadecane	109	% 63.6-15	4						

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 Cleardinal 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 claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples inclined above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey & Keine



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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Celeg & Keine



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

	8/11.70	ANALYSIS REQUEST
Project Manager:	P.O. #:	
	Company: Line Emay	
City: State:	Zip: Attn: Brian Wall	
Phone #: Fax #:	Address:	
Project #: Project Owner:	ner: City:	
Project Name:	State: Zip:	
Project Location: JL Well B 52	Eddy CO NA Phone #:	
1.1	Fax #:	
T I COOK	MATRIX PRESERV SAMPLING	
Lab I.D. Sample I.D.	G)RAB OR (C)OMP. CONTAINERS GROUNDWATER VASTEWATER OIL OIL OIL OIL OIL OITHER: CCID/BASE: CE / COOL OTHER:	ATPA HAT
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1 6 2 0 K)	
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5 50.500 2	Q - X X 5/2/14 9:30 X	·
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6 66.80 7	* * * * * * * * * * * * * * * * * * * *	× × ×
7 SP 9 2	*	×

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 395-2336 + 54

Sample Condition
Cool Intact
Pyes Pyes
No No

Rpons@diversifiedfsi.com Tjennings@diversifiedfsi.com

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Relinquished By

Time:

Received By:
Received By:

Phone Result: Fax Result: REMARKS:

: | Yes | No

Add'l Phone #: Add'l Fax #:

E-mail Results To:

Ngladden@diversifiedfsi.com

Relinquished By



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

(5/5) 393-2325 FAA (5/5) 393-24/0		
Company Name:	BILL TO	ANALTOID REGERE
	P.O. #:	
Address:	Company: Lin Engl	*
City: State:	Zip: Attn: Brian Wall 30	
Phone #: Fax #:	Address:	
Project #: Project Owner:	city:	
Project Name:	State: Zip:	
Project Location: IL Week & SZ	Eddy CONM Phone #:	
Sampler Name: Mondo Alux		
FOR LAB USE ONLY	MATRIX PRESERV SAMPLING	
Lab I.D. Sample I.D.	OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER:	NATA SERVICE AND A SERVICE AND
9 51.11@2		× * * * * * * * * * * * * * * * * * * *

Relinquished By Relinquished By Delivered By: (Circle One) Sample Condition
Cool Intact
Ves 12 Yes
No No Rpons@diversifiedfsi.com

Phone Result:
Fax Result:
REMARKS: Ngladden@diversifiedfsi.com E-mail Results To: □ Yes 0 0 8 8 Add'l Phone #: Add'l Fax #:

00

Tjennings@diversifiedfsi.com

Sampler - UPS - Bus - Other:



June 17, 2014

BRIAN WALL LINN OPERATING-HOBBS 2130 W. BENDER HOBBS, NM 88240

RE: J. L. KEEL B #52

Enclosed are the results of analyses for samples received by the laboratory on 06/10/14 15:45.

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/ga/lab accredited certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Keine

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



LINN OPERATING-HOBBS **BRIAN WALL** 2130 W. BENDER HOBBS NM, 88240

(575) 738-1740 Fax To:

Received:

06/10/2014

Sampling Date:

06/10/2014

Reported:

06/17/2014

Sampling Type:

Soil Cool & Intact

Project Name:

J. L. KEEL B #52 NONE GIVEN

Sampling Condition: Sample Received By:

Jodi Henson

Project Number: Project Location:

EDDY COUNTY

Sample ID: SP. 6 @ 14' (H401766-01)

BTEX 8021B	
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BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.10	105	2.00	2.72	
Toluene*	<0.050	0.050	06/13/2014	ND	2.25	113	2.00	3.44	
Ethylbenzene*	< 0.050	0.050	06/13/2014	ND	2.03	102	2.00	3.01	
Total Xylenes*	< 0.150	0.150	06/13/2014	ND	6.28	105	6.00	3.21	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result Reporting Limit		Analyzed Method Blank		BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	06/16/2014	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0 10.0		06/16/2014	ND	178	88.9	200	3.26	
DRO >C10-C28	<10.0	10.0	06/16/2014	ND	186	93.2	200	10.1	
Surrogate: 1-Chlorooctane	71.6	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	82.8	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celegit Keine



LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received:

06/10/2014

Sampling Date:

06/10/2014

Reported:

06/17/2014

Sampling Type:

Soil

Project Name:

J. L. KEEL B #52

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY

Sample ID: SP. 7 @ 11' (H401766-02)

BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.10	105	2.00	2.72	
Toluene*	< 0.050	0.050	06/13/2014	ND	2.25	113	2.00	3.44	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.03	102	2.00	3.01	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.28	105	6.00	3.21	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
. Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	06/16/2014	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0 10.0		06/17/2014	ND	178	88.9	200	3.26	
DRO >C10-C28	<10.0	10.0	06/17/2014	ND	186	93.2	200	10.1	
Surrogate: 1-Chlorooctane	82.6	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	96.3	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine



ND

Notes and Definitions

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

Analyte NOT DETECTED at or above the reporting limit

Cardinal Laboratories

*=Accredited Analyte

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Celey & Keens



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

क्षार रू	ANALYSIS REGOES
P.O. #:	
Company: Light English	
Zip: Attn: Orion Wall	
Address:	
: City:	
State: Zip:	
Phone #:	
Fax #:	
PRESERV	
R R	
ONTAINERS OUNDWATE ASTEWATER FILL UDGE THER: CID/BASE E / COOL THER:	
#C GR WA SO OIL SL! OT ACC	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
X	X
r any claim arising whether based in contract or tork shall be limited to the amount paed by the dec	ent for the enter the second of the applicable
be deemed waved unless made in writing and increased by on loss of prefits incurred by client, its suf- ing without limitation, business interruptions, loss of use, or loss of prefits incurred by client, its suf- ing without limitation, business are harm in based upon any of the above stated reasons or dif-	
Received By:	Phone Result:
(E-mail Results To:
	Ngladden@diversifiedfsi.com
	Attn: Company: Lan Energy Address: City: State: Zip: Phone #: Fax #: ACID/BASE: AMPLING OTHER: ACID/BASE: CE / COOL OTHER SOIL OTHER: CONTAINERS GROUNDWATER WASTEWATER SOIL OTHER: ACID/BASE: CE / COOL OTHER CE / COOL OTHER ACID/BASE: OTHER ACID/BASE: DATE CE / COOL OTHER ACID/BASE: OTHER ACID/BASE: DATE CE / COOL OTHER ACID/BASE: DATE ACID/BASE: DATE CE / COOL OTHER ACID/BASE: DATE ACID/BASE: DATE CE / COOL OTHER ACID/BASE: DATE CE / COOL OTHER ACID/BASE: DATE A

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

Time:

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Sample Condition
Cool Intact
Tes Tes
No No No

Rpons@diversifiedfsi.com Tjennings@diversifiedfsi.com



July 30, 2014

BRIAN WALL

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: J. L. KEEL B #52

Enclosed are the results of analyses for samples received by the laboratory on 07/23/14 14:40.

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/ga/lab accredited certif.html.

Cardinal Laboratories is accreditated 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.

Whe South

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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received:

07/23/2014

Sampling Date:

07/21/2014

Reported:

07/30/2014

Sampling Type:

Soil

Project Name:

J. L. KEEL B #52 NONE GIVEN

Sampling Condition:

Cool & Intact

Project Number: Project Location:

EDDY COUNTY

Sample Received By:

Jodi Henson

Sample ID: SW 1 NORTH (H402252-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					25-27
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2014	ND	1.67	83.5	2.00	2.10	
Toluene*	< 0.050	0.050	07/27/2014	ND	1.63	81.4	2.00	2.39	
Ethylbenzene*	< 0.050	0.050	07/27/2014	ND	1.64	81.9	2.00	2.42	
Total Xylenes*	< 0.150	0.150	07/27/2014	ND	5.31	88.4	6.00	2.84	
Total BTEX	<0.300	0.300	07/27/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	105 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/29/2014	ND	384	96.0	400	4.08	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0 10.0		07/25/2014	ND	176	88.2	200	2.52	
DRO >C10-C28	<10.0	10.0	07/25/2014	ND	194	97.0	200	3.54	
Surrogate: 1-Chlorooctane	114 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	129 9	63.6-15	4						

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received: Reported: 07/23/2014

07/30/2014

J. L. KEEL B #52

Project Name: Project Number:

NONE GIVEN

Project Location:

EDDY COUNTY

Sampling Date:

07/21/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: SW 2 EAST (H402252-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	07/27/2014	ND	1.67	83.5	2.00	2.10	
Toluene*	< 0.050	0.050	07/27/2014	ND	1.63	81.4	2.00	2.39	
Ethylbenzene*	< 0.050	0.050	07/27/2014	ND	1.64	81.9	2.00	2.42	
Total Xylenes*	< 0.150	0.150	07/27/2014	ND	5.31	88.4	6.00	2.84	
Total BTEX	<0.300	0.300	07/27/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	105 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/29/2014	ND	384	96.0	400	4.08	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/25/2014	ND	176	88.2	200	2.52	
DRO >C10-C28	<10.0	10.0	07/25/2014	ND	194	97.0	200	3.54	
Surrogate: 1-Chlorooctane	113 %	65.2-14	0						
Surrogate: 1-Chlorooctadecane	130 %	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



LINN OPERATING-HOBBS BRIAN WALL 2130 W. BENDER HOBBS NM, 88240

Fax To:

(575) 738-1740

Received:

07/23/2014

Sampling Date:

07/21/2014

Reported:

07/30/2014

Sampling Type:

Soil

Project Name:

J. L. KEEL B #52

Sampling Condition:

Cool & Intact

Project Number: Project Location: NONE GIVEN **EDDY COUNTY** Sample Received By:

Jodi Henson

Sample ID: SW 3 WEST (H402252-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/27/2014	ND	1.67	83.5	2.00	2.10	
Toluene*	<0.050	0.050	07/27/2014	ND	ND 1.63		2.00	2.39	
Ethylbenzene*	<0.050	0.050	07/27/2014	ND	1.64	81.9	2.00	2.42	
Total Xylenes*	<0.150	0.150	07/27/2014	ND	5.31	88.4	6.00	2.84	
Total BTEX	<0.300	0.300	07/27/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	104 9	% 89.4-12	6						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AP					
Analyte	Result Reporting Limit		Analyzed Method Blank		BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0 16.0		07/29/2014 ND		384	96.0	400	4.08	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0 10.0		07/25/2014	ND	176	88.2	200	2.52	
DRO >C10-C28	11.2	10.0	07/25/2014	ND	194	97.0	200	3.54	
Surrogate: 1-Chlorooctane	108 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	123 9								

Cardinal Laboratories

*=Accredited Analyte

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with Sigh

Mike Snyder For 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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

(575) 393-2326 F	(575) 393-2326 FAX (575) 393-2476		ANALYSIS REQUEST
Company Name:		BILL TO	
Project Manager:		P.O. #:	
		Company: Link trees y	
AUDIGOS.	State: Zip:	Attn: Brian Wall	
Ohone #:		Address:	
1010 11	xt Owner:	City:	
Project Name: Statualla		State: Zip:	
on:	Eddy co	Phone #:	
-	C	Fax #: DRESERV SAMPLING	
		PRESERV	
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PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive terms analyses. All claims including those for negligence and any other cause whatsoever st		by for any claim arising whether based in contract or tort, shall be limited to the amount past by the claim tor the all be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable to be a few or the subsidiaries.	
service in no event shall Cardinal be liable for incidental or consequence affiliates or successors arising out of or related to the performance of searching in the performance of the control of the performance of the perf	ALICALII	s based upon any of the above stated reasons or one was Phone Result: Yes Fax Result: Yes	□ No Add'l Phone #: □ No Add'l Fax #:
3		E-mail Results To:	To:
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Delivered By: (Circle One)	Sample Condition	CHECKED BY:	Rpons@diversifiedfsi.com Tiennings@diversifiedfsi.com
)	Yes Yo		

Sampler - UPS - Bus - Other:

The state of the s

Linn Energy JL Keel B #52 Company Name: Location Name:

SP Date: 2/14/2014 5/1/2014 6/10/2014 7/21/2014 Release Date: 9/16/2012

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Lab Confirmation Sample Field Sampling Needs Delineation and confirmation samples

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Lab Confirmation Sample	Field Sampling	Needs Delineation and confirmation samples

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Lab Confirmation Sample
Field Sampling
Needs Delineation and confirmation samples