

Electronic Correspondence

November 7, 2012

Mr. Mike Bratcher State of New Mexico Oil Conservation Division 811 S. 1st Street Artesia, NM 88210 mike.bratcher@state.nm.us

Re: Corrective Action Plan LINN Energy, JL Keel B 22 API No.: 30-015-05082 Legal: Unit L, Section 5, T17S, R31E, 1980 FSL, 660 FWL, Eddy Co., NM GPS: N32.8620, W103.8983

Dear Mike:

Etech Environmental & Safety Solutions, Inc. (Etech) is pleased to submit the following corrective action plan on the aforementioned site for your review and approval.

Scope of Work

The scope of this project is for the remediation of a produced water/hydrocarbon impact. Completion of remediation will involve the following actions:

- 1. Placement of a one-call for utility location.
- 2. Excavation of impacted soils as far as practicable or until the chloride levels are less than 1,000 mg/kg and/or hydrocarbon levels of less than 5,000 mg/kg are reached. A copy of the assessment map and the screening data are attached. Please note: The delineation data was collected from the lowest point in the impacted area where it was evident liquids had pooled. The assessment map includes the delineation data and the sampling points / hand auger points (SP's) that will be used to determine that the excavation has reached remediation objectives.
- 3. During the course of excavation soil samples will be screened on site to determine the progress of the remediation. Screening is achieved using a YSI chloride meter with a tolerance of +/- 6% which is the same tolerance as laboratory titration methods.
- 4. Once the screening determines the remediation objectives have been reached, confirmation samples will be collected from the bottom of the excavation to confirm that remediation goals have been reached. If the excavation depth is greater than 2 feet vertical, side wall samples will be collected as well.
- 5. If the results of analysis determine that the chloride levels are above regulatory threshold levels, additional excavation will be performed until the remediation objectives are met. It should be noted that due to the depth of the impact from the delineation, there may be circumstance that arise where additional excavation is not practical. This includes

reaching the limits of excavation with chlorides that are close to objective levels, safety issues such as the close proximity of equipment, or other site specific issues. In this event, it will be likely to install a liner or a layer of gypsum at the bottom of the excavation before backfilling.

- 6. Backfilling of the excavated area(s) will be achieved by placing clean fill similar to the existing material from the site to within 2 foot of the surface. The last two feet will be backfilled with top soil of similar configuration to the surrounding area and contoured to match the existing grade.
- 7. Where pad areas or interior areas of tank batteries are excavated, they will be backfilled to within 6 inches of surface then backfilled to grade with compacted caliche. Any firewalls or containment berms removed during remediation will be reinstalled.
- 8. The site will be seeded with a 50/50 mixture of BLM #2 and #4 seed. Seeding will take place when the seasonal conditions are conducive to maximizing the potential for seed germination. Actual seeding will be accomplished by broadcast or drilling; whichever is the most practical for the site.

Notifications and Special Conditions

- 1. The OCD and BLM will be notified prior to the commencement of on-site operations.
- 2. The OCD and BLM will be notified prior to each sampling event to allow the opportunity to witness the sampling events. Splits will be made available if requested.
- 3. The OCD and BLM (if applicable) will be notified when the site is closed for final inspection prior to seeding.
- 4. A final report documenting the closure of the site will be submitted along with a final C-141.

Thank you for your assistance on this matter. Should you have any questions, require additional information, or have any additional stipulations for this site, please contact Mr. Gary Wink at (575) 738-1739 (Office) or via email at <u>gawink@linnenergy.com</u> or myself at (432) 563-2200 (office) or via email at <u>kit@etechenv.com</u>.

Respectfully:

Kit Prichard Environmental Professional

cc: Terry Gregston, BLM Carlsbad District Office

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			JL K		Analytical F	lesults			5		Analytical Res	ults		SP8	Surface	0	<16.0
			тры с	Octob Results	er 9, 2012		BTEX Results				October 9, 20 Results	12		SP8 SP8	North Wall South Wall	1	<16.0 816
Sample	e Informat	tion		g/kg)			(mg/L)		18		Sample	Depth	Chlorides	SP8	Surface	0	<16.0
	Sample	Depth							-	Date 10/9/2012	I.D. HA 1	(Feet) 2-3	(mg/kg) 5200	SP9	North Wall	1	432
Date 10/09/12	I.D. HA 1	(ft) 2-3	GRO <10.0	DRO 466.0	<0.2	<0.2	Ethylbenzene <0.2	Total Xylenes <0.6		10/9/2012	HA 2	0-1	<16.0	SP9	South Wall	1	<16.0
10/09/12	HA 2	0-1	<10.0	<10.0	<0.2	<0.2	<0.2	<0.6	-	10/9/2012	HA 4	0-1	32	SP10 SP10	Surface North Wall	0	<16.0
10/09/12 10/09/12	HA 4 HA 6	0-1	<10.0 <10.0	<10.0 <10.0	<0.2	<0.2	<0.2	<0.6 <0.6	12	10/9/2012 10/9/2012	HA 6 HA 6	0-1 4-5	16 128	SP10 SP10	North Wall South Wall	1	<16.0 864
10/09/12	HA 6	4-5	<10.0	<10.0	< 0.05	<0.05	<0.05	<0.15	5	10/9/2012	HA 8	1-2	16	SP11	Surface	0	<16.0
10/09/12 10/09/12	HA 8 HA 10	1-2 0-1	<10.0 <10.0	<10.0 <10.0	<0.05	<0.05 <0.05	<0.05	<0.15 <0.15	-	10/9/2012 10/9/2012	HA 10 HA 10	0-1	128 720	SP11	North Wall	2	<16.0
10/09/12	HA 10	4-5	<10.0	<10.0	< 0.05	< 0.05	<0.05	<0.15	-	10/9/2012	HA 10 HA 11	4-5 0-1	16	SP11	South Wall	2	272
10/09/12 10/09/12	HA 11 HA 11	0-1 11-12	<10.0 <10.0	<10.0 <10.0	<0.05 <0.05	<0.05 <0.05	<0.05 <0.05	<0.15 <0.15	3	10/9/2012	HA 11	11-12	<16.0	SP12 SP12	Surface North Wall	2	<16.0 <16.0
10/09/12	HA 12	0-1	<10.0	<10.0	< 0.05	< 0.05	<0.05	<0.15	C.	10/9/2012	HA 12 HA 12	0-1 9-10	<16.0 <16.0	SP12 SP13	Surface	0	<16.0
10/09/12	HA 12	9-10	<10.0	<10.0 <10.0	< 0.05	< 0.05	<0.05	<0.15	SI	10/9/2012	HA 12 HA 13	0-1	<16.0	SP13	West Wall	2	<16.0
10/09/12 10/09/12	HA 13 HA 13	0-1 8-9	<10.0 <10.0	<10.0	<0.05 <0.05	<0.05 <0.05	<0.05 <0.05	<0.15 <0.15		10/9/2012	HA 13	8-9	<16.0	SP14	Surface	0	<16.0
10/09/12	HA 14	0-1	<10.0	<10.0	< 0.05	< 0.05	<0.05	<0.15	2	10/9/2012 10/9/2012	HA 14 HA 14	0-1 6-7	32 <16.0	SP14 SP15	South Wall	2	<16.0 <16.0
10/09/12 10/09/12	HA 14 HA 15	6-7 0-1	<10.0 <10.0	<10.0 <10.0	<0.05 <0.05	<0.05 <0.05	<0.05 <0.05	<0.15 <0.15	-	10/9/2012	HA 15	0-1	16	SP15 SP15	Surface East Wall	2	<16.0
10/09/12	HA 15	6-7	<10.0	<10.0	< 0.05	< 0.05	<0.05	<0.15		10/9/2012 10/9/2012	HA 15 NHA1	6-7 0-1	<16.0 224	SP16	Surface	0	48
10/09/12 10/09/12	NHA1 NHA1	0-1	<10.0 <10.0	<10.0 <10.0	<0.05 <0.05	<0.05 <0.05	<0.05 <0.05	<0.15 <0.15	1	10/9/2012	NHA1 NHA1	1-2	64	NHS1	Surface	0	48
10/09/12	NHA2	0-1	<10.0	<10.0	< 0.05	< 0.05	<0.05	<0.15	8-	10/9/2012	NHA2	0-1	3640	NHS2	Surface	0	3800
10/09/12	NHA3	0-1	<50.0	<50.0	<0.05	< 0.05	<0.05	<0.15	5	10/9/2012	NHA3	0-1	592	NHS3	Surface	0	384
	100	200	e 1:3, 30	04	00 5 Zoom 10	ft 00	S	ample P		LINN E JL Keel nts and	B 22	atio	n Mar)		*	
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October 09, 2012

FRED HOLMES

ETECH Environmental & Safety Solutions, Inc.

P. O. BOX 8469

MIDLAND, TX 79708

RE: J L KEEL B #22

Enclosed are the results of analyses for samples received by the laboratory on 10/02/12 17:00.

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

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,

Celez D. Keine

Celey D. Keene Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 1 2-3 (H202404-01)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5200	16.0	10/05/2012	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	10/04/2012	ND	190	94.9	200	0.855	
DRO >C10-C28	466	10.0	10/04/2012	ND	186	93.1	200	1.39	
Surrogate: 1-Chlorooctane	90.3	65.2-14	0						
Surrogate: 1-Chlorooctadecane	101 9	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 2 0-1 (H202404-02)

BTEX 8021B	mg/	′kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/05/2012	ND	400	100	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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	
Surrogate: 1-Chlorooctane	93.7	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	91.6	% 63.6-15	4						

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*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 4 0-1 (H202404-03)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	
Surrogate: 4-Bromofluorobenzene (PID	101 9	89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/05/2012	ND	400	100	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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	
Surrogate: 1-Chlorooctane	92.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	91.7	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 6 0-1 (H202404-04)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/06/2012	ND	2.20	110	2.00	2.03	
Toluene*	<0.200	0.200	10/06/2012	ND	2.03	102	2.00	2.43	
Ethylbenzene*	<0.200	0.200	10/06/2012	ND	2.05	102	2.00	2.41	
Total Xylenes*	<0.600	0.600	10/06/2012	ND	6.04	101	6.00	2.51	
Surrogate: 4-Bromofluorobenzene (PID	102 9	89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/05/2012	ND	400	100	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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	
Surrogate: 1-Chlorooctane	88.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	87.5	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 6 4-5 (H202404-05)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6	
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8	
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3	
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5	
Surrogate: 4-Bromofluorobenzene (PID	106 9	89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/08/2012	ND	400	100	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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	
Surrogate: 1-Chlorooctane	90.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	89.2	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 8 1-2 (H202404-06)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6	
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8	
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3	
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5	
Surrogate: 4-Bromofluorobenzene (PID	106 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	10/08/2012	ND	400	100	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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	
Surrogate: 1-Chlorooctane	91.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	91.0	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 10 0-1 (H202404-07)

BTEX 8021B	mg/	′kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6	
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8	
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3	
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5	
Surrogate: 4-Bromofluorobenzene (PID	105 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	128	16.0	10/08/2012	ND	400	100	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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	
Surrogate: 1-Chlorooctane	93.4	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	90.9	% 63.6-15	4						

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Received:	10/02/2012	Sampling Date:	10/02/2012
Reported:	10/09/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 10 4-5 (H202404-08)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/08/2012	ND	2.03	101	2.00	14.6	
Toluene*	<0.050	0.050	10/08/2012	ND	1.81	90.7	2.00	13.8	
Ethylbenzene*	<0.050	0.050	10/08/2012	ND	1.79	89.7	2.00	14.3	
Total Xylenes*	<0.150	0.150	10/08/2012	ND	5.33	88.8	6.00	13.5	
Surrogate: 4-Bromofluorobenzene (PID	105 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	720	16.0	10/08/2012	ND	400	100	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	10/05/2012	ND	203	101	200	0.901	
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	204	102	200	3.59	
Surrogate: 1-Chlorooctane	95.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	94.8	63.6-15	4						

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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. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 10 of 11



Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Mariand, Hobbs, NM 88240

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

Company Name	Etcula									Ľ	3/1	LL TC)					 	Α	NAI	LYS	IS F	REC	UE	ST			1
Project Manager								Ρ.Ο). #:							Γ	Τ		Т			Τ				T		
Address:								Co	mpa	any:																		
City:	State:	Zip						Att	n:																			
Phone #:	Fax #:					· .		Ad	dres	ss:																		
Project #:	Project Owner	r:						Cit	y:																			
Project Name:	<u>The Keel R C 2</u>							Sta	te:			Zip:															a.	
Project Location	1:							Ph	one	#:																		
Sampler Name:	Terry Opern							Fax	x #:																			
13 - 47 S	Sample I.D. $4A_1 \ge -3$ $4A_2 = -1$ $4A_4 = -1$ $4A_4 = -1$ $4A_4 = -1$ $4A_4 = -1$ $4A_5 = -2$ $4A_3 = -2$	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASIEWAIEK	-TRI)		OTHER:	ACID/BASE:	OL	OTHER :	DATI		TIME			I fame o											
PLEASE NOTE: Liability an analyses. All claims includin service. In no event shall Ce attituates or successors arisin Relinquis hed By	d Damages. Cardinal's liability and client's exclusive remedy for a g flose for negligence and any other cause whatsoever shall be a radinal be liable for incidental or consequental damages, including g out of or related to the performance of services hereunder by C /: Date: Time:	withou ardinal Re	t limita regan	d unles tion, bu	s made siness in whethe By :	in writi sterrup r such	ing and lions, k claim is	receitoss of s base	ved by Luse, a ed upor	Cardir or loss n any c	nal wi of pro of the	ithin 30 days afits incurred	after by cli d reas	completion of th ent_its subsidia	ne applica ries, se. sult: t:		Yes Yes] No] No			Phon Fax #						3	

CHECKED BY: (hitials)

Sample Condition Cool / Intact Yes Yes No No † Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

50

#26

Page 11 of 11



October 12, 2012

FRED HOLMES

ETECH Environmental & Safety Solutions, Inc.

P. O. BOX 8469

MIDLAND, TX 79708

RE: J L KEEL B #22

Enclosed are the results of analyses for samples received by the laboratory on 10/05/12 14:50.

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

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,

Celez D. Keine

Celey D. Keene Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 11 0-1' (H202436-01)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	102 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	10/09/2012	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	10/09/2012	ND	183	91.6	200	1.21	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93	
Surrogate: 1-Chlorooctane	95.8	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	96.7	% 63.6-15	4						

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 11 11-12' (H202436-02)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	99.5	% 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	10/09/2012	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	10/09/2012	ND	183	91.6	200	1.21	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93	
Surrogate: 1-Chlorooctane	101 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	102 9	63.6-15	4						

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Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 12 0-1' (H202436-03)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	100 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	10/09/2012	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	10/09/2012	ND	183	91.6	200	1.21	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93	
Surrogate: 1-Chlorooctane	96.2	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	99.5	% 63.6-15	4						

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Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 12 9-10' (H202436-04)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	101 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	10/09/2012	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	10/09/2012	ND	183	91.6	200	1.21	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93	
Surrogate: 1-Chlorooctane	92.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	94.8	% 63.6-15	4						

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Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 13 0-1' (H202436-05)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	100 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	10/10/2012	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	10/09/2012	ND	183	91.6	200	1.21	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93	
Surrogate: 1-Chlorooctane	90.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	93.0	63.6-15	4						

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Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 13 8-9' (H202436-06)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	101 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	10/10/2012	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	10/09/2012	ND	183	91.6	200	1.21	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	179	89.5	200	1.93	
Surrogate: 1-Chlorooctane	88.2	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	94.2	63.6-15	4						

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ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 14 0-1' (H202436-07)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	102 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	32.0	16.0	10/10/2012	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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	96.1	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	98.5	% 63.6-15	4						

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 14 6-7' (H202436-08)

BTEX 8021B	mg/	′kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	100 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	10/10/2012	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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	89.8	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	90.6	% 63.6-15	4						

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 15 0-1' (H202436-09)

BTEX 8021B	mg/	′kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	102	% 89.4-12	6						
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	10/10/2012	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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	86.2	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	90.4	% 63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: HA 15 6-7' (H202436-10)

BTEX 8021B	mg/	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 89.4-12	6						
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	10/10/2012	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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	88.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	91.3	% 63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NHA1 0-1' (H202436-11)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	99.9	% 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	224	16.0	10/10/2012	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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	90.6	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	<i>93.7</i>	% 63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NHA1 1-2' (H202436-12)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	99.8	% 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	64.0	16.0	10/10/2012	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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	72.6	65.2-14	0						
Surrogate: 1-Chlorooctadecane	73.3	63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NHA2 0-1' (H202436-13)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	99.9	% 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	3640	16.0	10/10/2012	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	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	91.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	94.6	63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/12/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NHA 3 0-1' (H202436-14)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2012	ND	1.93	96.6	2.00	8.20	
Toluene*	<0.050	0.050	10/11/2012	ND	1.77	88.3	2.00	7.64	
Ethylbenzene*	<0.050	0.050	10/11/2012	ND	1.72	85.9	2.00	7.82	
Total Xylenes*	<0.150	0.150	10/11/2012	ND	5.23	87.2	6.00	7.76	
Surrogate: 4-Bromofluorobenzene (PID	99.9	% 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	592	16.0	10/10/2012	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	<50.0	50.0	10/09/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<50.0	50.0	10/09/2012	ND	204	102	200	4.09	
Surrogate: 1-Chlorooctane	91.1	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	93.0	% 63.6-15	4						

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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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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 sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 16 of 18



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

	101 East Marland, Hobbs, NM 88 (575) 393-2326 FAX (575) 393-243												
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Project Manager			P.O. #:	Party of the second of the second					T		T	T	
Address:			Company:										
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Project #:	Project Owne	r:	City:										
Project Name:	JL Keel B22		State: Zip:										
Project Location			Phone #:										
Sampler Name:	Terry Osbern		Fax #:		N								ž
FOR LAB USE ONLY Lab I.D. H2D2434 3 4 5 6 7 8 9	Sample I.D.	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER MASTEWATER Soll OIL SILUDGE	PRESERV. SAMPL	TIME	chloride	B/EX							
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analyses. All claims includin service. Inn oeven shall ca affiliates or successors arisin Relinquished By Relinquished By Delivered By: Sampler - UPS	d Damages. Cardinal's liability and client's exclusive remedy for g those for negligence and any other cause whatsoever shall be rightable failed for incidental or consequential damages, includin g out of or related to the performance of services hereunder by """"""""""""""""""""""""""""""""""""	deemed waived unless made in writing at g without limitation, business interruptions 2 ardinal, regardless of whether such claim Received By: Received By: Sample Condi Cool Initact No N	tion CHECKED BY: (Initials)	fter completion of th / client, its subsidia	he applicabl aries, se. sult: It:	e Yes Yes	No No	Add'l Pho Add'l Fax			I .	1	
† Cardinal (cannot accept verbal changes. Pleas	e fax written changes to	(575) 398-2326 H										Page

Page 17 of 18



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

	101 East Marland, Ho (575) 393-2326 FAX																										
Company Name	Ete c h	z									BI	LL TO	0							ANA	LYS	S RI	EQUE	EST			
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Project Name:	JL Keel B	22						s	tate	:		Zip:													1		
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Sampler Name:	Terry Os	born						F	ax #	:	-																
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 \dagger Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326 ± 726

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October 25, 2012

FRED HOLMES

ETECH Environmental & Safety Solutions, Inc.

P. O. BOX 8469

MIDLAND, TX 79708

RE: J L KEEL B #22

Enclosed are the results of analyses for samples received by the laboratory on 10/23/12 16:30.

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

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,

Celez D. Keine

Celey D. Keene Lab Director/Quality Manager



ETECH Environmental & Safety Solutions, Inc. FRED HOLMES P. O. BOX 8469 MIDLAND TX, 79708 Fax To: (432) 563-2213

Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 SURFACE (H202586-01)

Chloride, SM4500Cl-B mg/kg			Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5680	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 2 SURFACE (H202586-02)

Chloride, SM4500Cl-B	mg,	ng/kg Analyzed By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 2 N. WALL 2' (H202586-03)

Chloride, SM4500Cl-B	mg	mg/kg Analyzed By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 2 S. WALL 2' (H202586-04)

Chloride, SM4500Cl-B	Analyze	d By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3680	16.0	10/25/2012	ND	416	104	400	0.00	

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



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Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 SURFACE (H202586-05)

Chloride, SM4500Cl-B mg/kg			Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 4 SURFACE (H202586-06)

Chloride, SM4500CI-B	mg	′kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 4 N. WALL 2' (H202586-07)

Chloride, SM4500Cl-B mg/kg			Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4120	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 4 S. WALL 2' (H202586-08)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 5 SURFACE (H202586-09)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 5 N. WALL 1' (H202586-10)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 5 S. WALL 1' (H202586-11)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 6 SURFACE (H202586-12)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 7 SURFACE (H202586-13)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 8 SURFACE (H202586-14)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 8 N. WALL 1' (H202586-15)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 8 S. WALL 1' (H202586-16)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 9 SURFACE (H202586-17)

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 9 N. WALL 1' (H202586-18)

Chloride, SM4500Cl-B	mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 9 S. WALL 1' (H202586-19)

Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 10 SURFACE (H202586-20)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 10 N. WALL 1' (H202586-21)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 10 S. WALL 1' (H202586-22)

Chloride, SM4500Cl-B	mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	864	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 11 SURFACE (H202586-23)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 11 N. WALL 2' (H202586-24)

Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 11 S. WALL 2' (H202586-25)

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 12 SURFACE (H202586-26)

Chloride, SM4500CI-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 12 N WALL 2' (H202586-27)

Chloride, SM4500Cl-B	00Cl-B mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 13 W. WALL 2' (H202586-28)

Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 14 SURFACE (H202586-29)

Chloride, SM4500Cl-B	mg,	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 14 S. WALL 2' (H202586-30)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 15 SURFACE (H202586-31)

Chloride, SM4500Cl-B	mg/	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 15 E. WALL 2' (H202586-32)

Chloride, SM4500Cl-B	mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 16 SURFACE (H202586-33)

Chloride, SM4500Cl-B	500Cl-B mg/kg			Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: NHS 1 (H202586-34)

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/25/2012	ND	416	104	400	0.00	

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Received:	10/23/2012	Sampling Date:	10/23/2012
Reported:	10/25/2012	Sampling Type:	Soil
Project Name:	J L KEEL B #22	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NHS 2 (H202586-35)

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3800	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: NHS 3 (H202586-36)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	10/25/2012	ND	416	104	400	0.00	

Sample ID: SP 13 SURFACE (H202586-37)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2012	ND	416	104	400	0.00	

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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 FAX (575) 393-2476					
	1	202 024	IC FAV	/ /	202 0470

2.

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affilintes or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date:	Received E	3y: ,)	2 R R R R	Phone Result:	es	🗆 No	Add'I Phone #:
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	4.00	CALCON	1 yr	- NUTYL				
Relinquished By:	Date:	Received E	By:					
	×	~						
5	Time:							
	and a second second second							
Delivered By: (Circle One)			ample Condition	CHECKED BY:				
	#	MT C	ool Intact	(Initials)				
Sampler - UPS - Bus - Other:	13	108	Yes Yes	1718				
	. U	(1 Lx		exy :				

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

100 Are et al.	101 East Marland, Hobbs, NM 88 (575) 393-2326 FAX (575) 393-247										
Company Name	" Etch		B	ILL TO		·····	ANALYS	SIS REQUE	ST		
Project Manage	r: Fred Holmes	-	P.O. #: 25	3-2995-000				T T			
Address:		and a sub-sub-sub-sub-sub-sub-sub-sub-sub-sub-	Company:								
City:	State:	Zip:	Attn:								
Phone #:	Fax #:		Address:								
Project #: 2	53 - 2 + 45 -000 Project Owne	r:	City:								
Project Name:	JL Keel BZZ		State:	Zip:							
Project Location	JL Keel B 22 TE Eddy county Terry 05600		Phone #:		5						
Sampler Name:	Terry asbor		Fax #:		V						
FOR LAB USE ONLY		MATRIX	PRESERV	SAMPLING							
jā -		(C)OMP. ERS ATER TER			50						
Lab I.D.	Sample I.D.	$\alpha z \leq \langle \langle \rangle \rangle$	L E		Chloi						
	industrial country proceedings - Proceedings - P	AB 0 NTA NUNE STEW	COC COC		J						
H202586		((G)RAB OR (C)C # CONTAINERS GROUNDWATE WASTEWATER SOIL OIL	OTHER : ACID/BASE: ICE / COOL OTHER :	DATE TIME							
	5p5 5. ~ 111'			10-23							
12	SPB Surface SPB Surface SPB Surface SPB N. wall 1' SPB S wall 1'										
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analyses. All claims include	nd Damages. Cardinal's liability and client's exclusive remedy for ing those for negligence and any other cause whatsoever shall be	deemed waived unless made in writing ar	td received by Cardinal	within 30 days after completion of	the applicable					denangeneral	
amiliates of successors arisi	ardinal be liable for incidental or consequental damages, includin ng out of or related to the performance of services hereunder by	Cardinal, regardless of whether such claim	, loss of use, or loss of is based upon any of t	he above stated reasons or otherv	vise.	a manada ang sa					
Relinquished B		Received By:	lours	Phone R Fax Rest	ult: 🗆 Ye		Add'l Phor Add'l Fax				
Relinquished B	y Oalyen Time: 1; 30	Received By:	unue	1 Sand							
	Time:	0									
Delivered By	: (Circle One)	Sample Condi Cool Intact	1 13	KED BY:							
Sampler - UPS	- Bus - Other:	2.2 - Yes BYe		itialis) -	chana di Manana ang kana sa						

¥26

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P9 2004

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech		BILL TO		ANALYSIS	ANALYSIS REQUEST				
Project Manager: Fred Holm	e 5	P.O. #: 253 - 2995-000		TTT					
Address:		Company:							
City: S	itate: Zip:	Attn:							
	x #:	Address:							
Project #: 253-2995- 00 Pr		City:							
Project Name: JL Kcel B	22	State: Zip:							
Project Location: Eddy Col	inty	Phone #:							
Sampler Name: Terry OSE	iorn	Fax #:	5						
Lab I.D. Sample I.D. H20258L 21 SP10 N. wall 5P10 S. wall 25P11 SurPat 24 SP11 N. wall 35 SP11 N. wall 35 SP12 SURP 21 SP12 N W 22 SP13 N W	$\frac{1}{2}$	SLUDGE SLUDGE SLUDGE SCOOL ICE/COOL SCOOL	Chlorid						
29 50 14 SVIF	all: 61	· · · · · · · · · · · · · · · · · · ·				1.000 (0.100) (0.00)			
30 5P14 5V1F0 30 5P14 5.00	112								
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Company Name:	Etech		BILL TO			ANAL	SIS REQU	EST	
Project Manager	Fred Holmes		P.O. #: 253-294	000					
Address:		-	Company:						
City:	State:	Zip:	Attn:						
Phone #: Fax #:			Address:						
Project #: 2	53 - 2945-000 Project Owner		City:						
Project Name:	Eddy county		State: Zip:						с.
Project Location	Eddy county		Phone #:		S I				
Sampler Name:	Terry 056 ori)	Fax #:		2				
35 36 37	Sample I.D. Sp 15 Syr Pace Sp 15 E wall 2' Sp 16 Sur Pace NHS 12 NHS 3 St 13 Burface	(G)RAB OR (C)OMP. (G)RAB OR (C)OMP. (G)RAB OR (C)OMP. (G)RAB OR (C)OMP. (C)OMP	ρ-2.3	TIME	CP 10 r				
analyses. All claims including	d Damages. Cardinal's liability and client's exclusive remedy for a g those for negligence and any other cause whatsoever shall be client be lickly for instituted.	deemed waived untess made in writing and	ti received by Cardinal within 30 days after	or completion of ti	ne applicable				
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† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326 ± 26

LINN Energy

Client:

Project Number: 253-2995-000 Site: JL Keel B 22 Terry Osborn Contaminant: Chlorides Technican: Instrument: **YSI Chloride Probe** Model/SN: Pro 1030/114100517 ✓ Yes No No **Calibration Checks Good:** Claibration Standard: 250 Milliliters Final Sample of Reading Dilution Result Notations Date Sample I.D. (mg/kg) (mg/kg) Used 10/01/12 HA1 0-1' 10 5.00 383.00 1,915.00 10/01/12 HA1 1-2' 10 5.00 213.00 1.065.00 3,975.00 10/01/12 10 5.00 795.00 HA1 2-3' Refusal 10/02/12 HA2 0-1' 10 5.00 6.00 30.00 Refusal 10/02/12 HA3 0-1' 10 5.00 32.00 160.00 Refusal 10/02/12 HA4 0-1' 10 5.00 7.00 35.00 Refusal 10/02/12 HA5 0-1 10 5.00 3.00 15.00 5.00 10/02/12 HA5 1-2' 10 5.00 25.00 5.00 7.00 10/02/12 HA5 2-3' 10 35.00 10/02/12 HA5 3-4' 10 5.00 7.00 35.00 10/02/12 HA5 4-5' 10 5.00 5.00 25.00 10/02/12 HA5 5-6' 10 5.00 8.00 40.00 10/02/12 HA5 6-7' 10 5.00 5.00 25.00 10/02/12 HA5 7-8' 10 5.00 3.00 15.00 10/02/12 HA5 8-9' 10 5.00 3.00 15.00 Refusal 10/02/12 HA6 0-1' 5.00 6.00 30.00 10 10/02/12 HA6 1-2' 10 5.00 82.00 410.00 10/02/12 HA6 2-3' 10 5.00 58.00 290.00 10/02/12 HA6 3-4' 10 5.00 40.00 200.00 10/02/12 HA6 4-5' 10 5.00 18.00 90.00 Refusal 10/02/12 HA7 0-1' 10 5.00 6.00 30.00 10/02/12 HA7 1-2' 10 5.00 10.00 2.00 Refusal 10/02/12 HA8 0-1' 10 5.00 3.00 15.00 20.00 10/02/12 HA8 1-2' 10 5.00 4.00 Refusal HA9 0-1' 10/02/12 10 5.00 4.00 20.00 Refusal 15.00 10/02/12 HA10 0-1' 10 5.00 75.00 10/02/12 HA10 1-2' 10 5.00 45.00 225.00 10/02/12 HA10 2-3' 10 5.00 46.00 230.00 HA10 3-4' 10/02/12 10 5.00 80.00 400.00 10/02/12 83.00 415.00 HA10 4-5' 10 5.00 Refusal

Chloride Probe Field Analysis Sheet

Client: LINN Energy Site: JL Keel B 22 Project Number: 253-2995-000 Technican: Terry Osborn Contaminant: Chlorides Instrument: **YSI Chloride Probe** Model/SN: Pro 1030/114100517 ✓ Yes No No **Calibration Checks Good:** Claibration Standard: 250 Milliliters Final Sample of Reading Date Dilution Result **Notations** I.D. Sample (mg/kg) (mg/kg) Used 10/03/12 HA11 0-1' 10 5.00 5.00 25.00 10/03/12 HA11 1-2' 10 5.00 5.00 25.00 10/03/12 10 5.00 4.00 20.00 HA11 2-3' 10/03/12 HA11 3-4' 10 5.00 3.00 15.00 10/03/12 10 5.00 4.00 20.00 HA11 4-5' 10/03/12 HA11 5-6' 10 5.00 3.00 15.00 10/03/12 HA11 6-7' 10 5.00 2.00 10.00 10/03/12 10 5.00 1.00 5.00 HA11 7-8' 10/03/12 10 5.00 4.00 20.00 HA11 8-9' 10/03/12 10 5.00 5.00 25.00 HA11 9-10' 10/03/12 HA11 10-11' 10 5.00 3.00 15.00 10/03/12 15.00 HA11 11-12' 10 5.00 3.00 Refusal 10/04/12 HA12 0-1' 10 5.00 3.00 15.00 10/04/12 10 2.00 HA12 1-2' 5.00 10.00

Chloride Probe Field Analysis Sheet

10/04/12	HA12 2-3'	10	5.00	2.00	10.00	
10/04/12	HA12 3-4'	10	5.00	3.00	15.00	
10/04/12	HA12 4-5'	10	5.00	4.00	20.00	
10/04/12	HA12 5-6'	10	5.00	2.00	10.00	
10/04/12	HA12 6-7'	10	5.00	3.00	15.00	
10/04/12	HA12 7-8'	10	5.00	2.00	10.00	
10/04/12	HA12 8-9	10	5.00	2.00	10.00	
10/04/12	HA12 9-10'	10	5.00	2.00	10.00	Refusal
10/04/12	HA13 0-1'	10	5.00	4.00	20.00	
10/04/12	HA13 1-2'	10	5.00	5.00	25.00	
10/04/12	HA13 2-3'	10	5.00	3.00	15.00	
10/04/12	HA13 3-4'	10	5.00	2.00	10.00	
10/04/12	HA13 4-5'	10	5.00	4.00	20.00	
10/04/12	HA13 5-6'	10	5.00	3.00	15.00	
10/04/12	HA13 6-7'	10	5.00	3.00	15.00	
10/04/12	HA13 7-8'	10	5.00	3.00	15.00	
10/04/12	HA13 8-9'	10	5.00	4.00	20.00	Refusal

Client: LINN Energy JL Keel B 22 Project Number: 253-2995-000 Site: Technican: Terry Osborn Contaminant: Chlorides Instrument: **YSI Chloride Probe** Model/SN: Pro 1030/114100517 ✓ Yes No No **Calibration Checks Good:** Claibration Standard: 250 Milliliters Final Sample Reading of Dilution Result **Notations** Date I.D. Sample (mg/kg) (mg/kg) Used 10/05/12 HA14 0-1' 10 5.00 25.00 125.00 10/05/12 HA14 1-2' 10 5.00 10.00 50.00 10/05/12 HA14 2-3' 10 5.00 15.00 75.00 10/05/12 HA14 3-4' 10 5.00 15.00 75.00 10/05/12 5.00 HA14 4-5' 10 20.00 100.00 10/05/12 HA14 5-6' 10 5.00 10.00 50.00 10/05/12 HA14 6-7' 10 5.00 2.00 10.00 Refusal 10/05/12 5.00 4.00 20.00 HA15 0-1' 10 10/05/12 5.00 5.00 25.00 HA15 1-2' 10 10/05/12 10 5.00 3.00 15.00 HA15 2-3' 10/05/12 HA15 3-4' 10 5.00 2.00 10.00 10/05/12 HA15 4-5' 10 5.00 2.00 10.00 10/05/12 HA15 5-6' 10 5.00 2.00 10.00 10/05/12 HA15 6-7' 10 5.00 3.00 15.00 Refusal 10/05/12 NHA1 0-1' 10 5.00 36.00 180.00 10/05/12 NHA1 1-2' 10 5.00 12.00 60.00 Refusal 10/05/12 NHA2 0-1' 10 5.00 425.00 2,125.00 Refusal 10/05/12 NHA3 0-1' 10 5.00 82.00 410.00 Refusal

Chloride Probe Field Analysis Sheet