

### **LINN ENERGY**

2130 W. Bender Blvd. Hobbs, NM 88241 Phone 575,738,1739

# HE West B #2 Battery/West B #88 2RP-1189

### Corrective Action Plan

API No. 3001528537

Release Date: June 7<sup>th</sup>, 2012

Unit Letter D, Section 9, Township 17S, Range 31E

#### Rice Environmental Consulting & Safety

P.O. Box 2948, Hobbs, NM 88241 Phone 575.393.2967

December 5<sup>th</sup>, 2013

#### Mike Bratcher

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau – District 2 811 S. First St. Artesia, NM 88210

RE: Corrective Action Plan (CAP)
Linn Energy – HE West B #2 Battery/West B #88 (2RP-1189)
UL/D sec. 9 T17S R31E
API No. 3001528537
NU12136TG

Mr. Bratcher:

Linn Energy (Linn) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

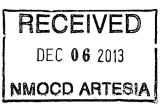
#### **Background and Previous Work**

The site is located approximately 6.8 miles west of Maljamar, New Mexico at UL/D sec. 9 T17S R31E. This site is in an area of no known groundwater.

On June 7<sup>th</sup>, 2012, a valve failed in the battery releasing 8 barrels of oil and 2 barrels of produced water over 17,545 sq ft of battery and pasture land. None of this material was recovered. On June 13<sup>th</sup>, 2012, NMOCD and BLM were notified of the release. An initial C-141 was submitted to both agencies and NMOCD approved the C-141 on June 21<sup>st</sup>, 2012 (Appendix A).

Two other environmental companies worked this site previously to RECS taking over remediation activities. When RECS obtained the site, the battery had already been excavated to 1.5-3 ft bgs and a request to backfill the site had been approved by BLM on July  $26^{th}$ , 2013. As part of permission to backfill, BLM had a stipulation that Sample Point 1 needed to be delineated to find closure levels. The site was backfilled and contoured to the surrounding location.

RECS took over the project on August 27<sup>th</sup>, 2013. A vertical was attempted at Point 1 on September 17<sup>th</sup>, 2013; however installation was aborted when a fiberglass line was found below Point 1. On September 20<sup>th</sup>, 2013, RECS met with NMOCD and NMOCD stated that RECS needed to assess the release outside the bermed battery area. On September 25<sup>th</sup>, 2013, RECS met with BLM and BLM stated that the work was completed inside the battery and RECS needed to assess the release outside the battery. Both agencies required RECS to submit a CAP to remediate this area.



RECS sampled that area outside the battery on beginning on October 8<sup>th</sup>, 2013. Samples were taken from the surface at seven points within the release area outside the bermed battery and one sample, Point 7, was taken as background sample (Figure 1). The samples were field tested for chlorides and organic vapors and the samples were taken to a commercial laboratory for analysis (Appendix B). All the samples returned chloride values below 1,000 mg/kg, GRO values of non-detect and DRO values below regulatory standards, except for the background sample at Point 7, which returned a DRO value of 5,890 mg/kg.

#### **Corrective Action Plan**

Based on the laboratory analysis, all sampling outside the bermed battery is below regulatory standards. Therefore, this area will have soil amendments added as necessary and then the area will be seeded with a blend of native vegetation. Vegetation provides an infiltration barrier for the site, since plants capture water through their roots thereby reducing the amount of water traveling through the vadose zone to groundwater.

Once the CAP activities are completed, ROC will submit a report detailing the CAP activities and a request for 'remediation termination' or site closure.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer

Project Scientist

**RECS** 

(575) 441-0431

Attachments:

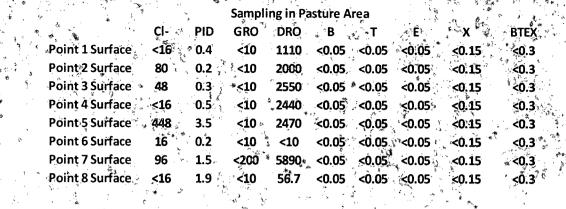
Figure 1 – Initial Sampling Data

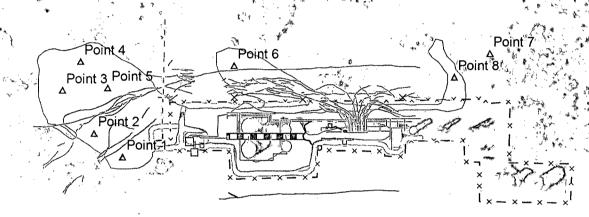
Appendix A – Initial C-141

Appendix B – Laboratory Analyses

## Figures

**Initial Sampling Data** 





		Legend		
Δ	SAMPLE POINTS	ELECTRICAL PANEL	CHEMICAL TANK	
	CONTAINMENT	× × FENCE	PUMP	
•	CONTROL BOX	PAD/ROAD EDGE	SEPARATOR	
	ELECTRICAL BOX	PRODUCTION HEADER	STAIN (17,545 sq ft)	
×	PIPE END	RISER	STORAGE TANK	The state of the s
***************************************	UNDERGROUND FIBERGLASS LINE	STAIRS AND CATWALK	TREATER	
	BERM	SURFACE ELECTRIC	VALVE BOX	
	BURIED PIPELINE	SURFACE PIPELINE	CI- FIELD DATA	
0000	CROSSOVER		CI- LAB DATA	Landowner = BLM DGW = None



## LINN H. E. WEST Figure 1 B #2 BATTERY (2RP-1189)

UL D SECTION 9 T-17-S R-31-E **EDDY COUNTY, NM** 



0	50	100
	HH	Feet

GPS date: 10/8/13 KS Drawing date: 11/1/13 Drafted by: L. Weinheimer

# Appendix A Initial C-141

District I
1625 N. Frênch Dr., Hobbs, NM \$8240.
District II
1301 W. Grand Avenue, Artesia, NM \$8210.
District III
1000 Rio Brazos Road, Aziec, NM \$7410.
District IV
1220 S. Si. Francis Dr., Sania Fe, NM \$7505.

Attach Additional Shects If Necessary

State of New Mexico Energy Minerals and Natural Resources JUN 21 2012

RECEIVED

Form C-141 Regised October 10, 2003

NMOGO ARTESIA populate District Office in

Oil Conservation Division 1220 South St. Francis Dr. Santa Fé, NM 87505

Release Notification and Corrective Action. 1217356345 **OPERATOR** 🗍 "Final Report | Initial Report Name of Company: Linn Operating Contact: Joe Hernandez: 269324 Address: 2130 W. Bender, Hobbs, NM 88240 Telephone No.: 575-738-1.739 Facility Name: HEAVest B # 2-Baltery West B #88 'Facility Type: Battery -Mineral Owner: Federal API'No.: 3001528537 Surface Owner: Federal LOCATION OF RELEASE: UnirLetter Feet from the North/South Line. Feet from the East/West Line County Section Township Range 11309 Eddy. Ď. 09. 31E North 1310 Wesi. 17Š. Latifude: 32:85273. Longitude: -103:87\$27 NATURE OF RELEASE Type of Release! Oil /2Produced Water Volumbof Release: 8:1/2 Volume Recovered: 0 T-0. Source of Release: Malyo: Date and Hour of Occurrence: Date and Hour of Discovery: 06/07/2012 8:30am 06/07/2012 9am Was Immediate Notice Given? If YES, To Whom? Nes. 🛛 No 📋 Not Reguired M. Bratcher - NM OCD: Terry Greeston BLM Date and Hour 06/13/2012 By Whom? Joe!Hernandez Was a Watercourse Reached? If YES, Volume Impacting the Watercourse; □ Yes ⊠ %0 If a Watercourse was Impacted Describe Eully & Describe Cause of Problem and Remodual, Action Taken 1: 2" Tou the production header was buried and Describe Area Affected and Gleaning Actions Taken. \* From header west toward and around production tanks. Delineation started by Etechn OR'd by. Herry-BLM to start cleanups. Thereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMQCD rules and regulations all operators are required to report and/or file certain release not it can one for recorrective actions for releases, which may endlanger. public licallifor the environment. The acceptance of a C-141 report by the NMOCD inarked as Final Reports does not relieve the operator of hability should their operanous have falled to adequately investigate and remediate contamination that pose a threat to ground water, sinface water, human health or lhe environment. An addition, NMOCD acceptance of a G.141 report does not relieve the operator of responsibility for compliance with any others federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Signature: Approved by District Supervise Signed By Printed Names Joe Hernandez Thile Production Foreman. Approval Date: Expiration Date: Aitached 🗇 Conditions of Approval Bimail:Áddress/Jhernandcz@linnenergy.com. Phone: 575-942-94925 Dáte 506/21/2012:

Remediation per OCĎ Rules & Guidelines SUBMIT REMEDIATION PROPOŠAL NOT LATER THAN:

2RP-1189

# Appendix B Laboratory Analyses



October 11, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: H. E. WEST B #2 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 10/09/13 8:25.

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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> 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.

Celego 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



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/09/2013

Sampling Date:

10/08/2013

Reported:

10/11/2013

Sampling Type:

Soil

Project Name:

Sampling Condition:

Cool & Intact

Project Number:

H. E. WEST B #2 BATTERY NONE GIVEN

Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

#### Sample ID: POINT 1 @ SURFACE (H302435-01)

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	10/10/2013	ND	1.97	98.6	2.00	4.07	
Toluene*	<0.050	0.050	10/10/2013	ND	1.99	99.3	2.00	4.73	
Ethylbenzene*	<0.050	0.050	10/10/2013	ND	2.01	100	2.00	4.36	
Total Xylenes*	<0.150	0.150	10/10/2013	ND	5.88	98.1	6.00	4.75	
Total BTEX	<0.300	0.300	10/10/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	111 %	6 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	10/09/2013	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2013	ND	200	100	200	0.683	
DRO >C10-C28	1110	10.0	10/10/2013	ND	194	97.0	200	2.22	
Surrogate: 1-Chlorooctane	95.7	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	153 9	63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celey & Keene



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Fax To: (575) 397-1471

Received:

10/09/2013

Sampling Date:

10/08/2013

Reported:

Sampling Type:

Soil

Project Name:

10/11/2013

Sampling Condition:

Cool & Intact

H. E. WEST B #2 BATTERY

Sample Received By:

Jodi Henson

Project Number:

NONE GIVEN

Project Location: NOT GIVEN

Sample ID: POINT 2 @ SURFACE (H302435-02)

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	10/10/2013	ND .	1.97	98.6	2.00	4.07	
Toluene*	<0.050	0.050	10/10/2013	ND	1.99	99.3	2.00	4.73	
Ethylbenzene*	<0.050	0.050	10/10/2013	ND	2.01	100	2.00	4.36	
Total Xylenes*	<0.150	0.150	10/10/2013	ND	5.88	98.1	6.00	4.75	
Total BTEX	otal BTEX <0.300		10/10/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	99.7	% 89.4-12	6					<del></del>	
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	10/09/2013	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2013	ND	200	100	200	0.683	
DRO >C10-C28	2000	10.0	10/10/2013	ND	194	97.0	200	2.22	
Surrogate: 1-Chlorooctane 1.		65.2-14	0						
Surrogate: 1-Chlorooctadecane	180 9	63.6-15	4						

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\*=Accredited Analyte

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Fax To:

(575) 397-1471

Received:

10/09/2013

Sampling Date:

10/08/2013

Reported:

10/11/2013

Sampling Type:

Soil

Project Name:

H. E. WEST B #2 BATTERY

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

#### Sample ID: POINT 3 @ SURFACE (H302435-03)

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	10/10/2013	ND	1.97	98.6	2.00	4.07	
Toluene*	< 0.050	0.050	10/10/2013	ND	1.99	99.3	2.00	4.73	
Ethylbenzene*	<0.050 0.050		10/10/2013	ND	2.01	100	2.00	4.36	
Total Xylenes*	<0.150	0.150	10/10/2013	ND	5.88	98.1	6.00	4.75	
Total BTEX	<0.300	0.300	10/10/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	96.1 %	% 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	48.0	16.0	10/09/2013	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2013	ND	200	100	. 200	0.683	
DRO >C10-C28	DRO >C10-C28 2550		10/10/2013	ND .	194	97.0	200	. 2.22	
Surrogate: 1-Chlorooctane	103 %	65.2-14	0						
Surrogate: 1-Chlorooctadecane	191 %	63.6-15	4						

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Fax To:

(575) 397-1471

Received:

10/09/2013

Sampling Date:

10/08/2013

Reported:

10/11/2013

Soil

Project Name:

Sampling Type:

Project Number:

NONE GIVEN

H. E. WEST B #2 BATTERY

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

Project Location:

NOT GIVEN

Sample ID: POINT 4 @ SURFACE (H302435-04)

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	10/10/2013	ND	1.97	98.6	2.00	4.07	
Toluene*	<0.050	0.050	10/10/2013	ND	1.99	99.3	2.00	4.73	
Ethylbenzene*	ylbenzene* <0.050 0.050		10/10/2013	ND	2.01	100	2.00	4.36	
Total Xylenes*	<0.150	0.150	10/10/2013	ND	5.88	98.1	6.00	4.75	
Total BTEX	II BTEX <0.300 0.300		10/10/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	98.2	% 89.4-12	6	ş				-	
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	10/09/2013	ND	432	108	400	3.77	
TPH 8015M	mg/	'kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2013	ND	188	94.1	200	0.921	
DRO >C10-C28	2440	10.0	10/10/2013	ND	187	93.4	200	0.907	
Surrogate: 1-Chlorooctane	98.1	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	190 9	% 63.6-15	4		•				

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\*=Accredited Analyte

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HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/09/2013

Sampling Date:

10/08/2013

Reported:

10/11/2013

Sampling Type:

Soil

Project Name:

H. E. WEST B #2 BATTERY

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

#### Sample ID: POINT 5 @ SURFACE (H302435-05)

BTEX 8021B	mg/	kg	Analyzed By: MS						<del></del>
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/10/2013	ND	1.97	98.6	2.00	4.07	
Toluene*	<0.050	0.050	10/10/2013	ND	1.99	99.3	2.00	4.73	
Ethylbenzene*	< 0.050	0.050	10/10/2013	ND	2.01	100	2.00	4.36	
Total Xylenes*	< 0.150	0.150	10/10/2013	ND	5.88	98.1	6.00	4.75	
Total BTEX	<0.300	0.300	10/10/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIE	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	448	16.0	10/09/2013	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2013	ND	188	94.1	200	0.921	
DRO >C10-C28	2470	10.0	10/10/2013	ND	187	93.4	200	0.907	
Surrogate: 1-Chlorooctane	102 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	203 9	% 63.6-15	4						

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\*=Accredited Analyte

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Celey D. Keens



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Fax To:

(575) 397-1471

Received:

10/09/2013

Sampling Date:

10/08/2013

Reported:

10/11/2013

Sampling Type:

Soil

Project Name:

H. E. WEST B #2 BATTERY

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

#### Sample ID: POINT 6 @ SURFACE (H302435-06)

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	10/10/2013	ND	1.97	98.6	2.00	4.07	
Toluene*	<0.050	0.050	10/10/2013	ND	1.99	99.3	2.00	4.73	
Ethylbenzene*	<0.050	0.050	10/10/2013	ND	2.01	100	2.00	4.36	
Total Xylenes*	<0.150	0.150	10/10/2013	ND	5.88	98.1	6.00	4.75	
Total BTEX	<0.300	0.300	10/10/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	97.1	% 89.4-12	6		·				
Chloride, SM4500CI-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	10/09/2013	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyzed By: MS						
Analyte	Result .	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2013	ND	188	94.1	200	0.921	
DRO >C10-C28	<10.0	10.0	10/10/2013	ND	187	93.4	200	0.907	
Surrogate: 1-Chlorooctane	69.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	71.4	% 63.6-15	4						

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\*=Accredited Analyte

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Celeg D. Keene



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/09/2013

Sampling Date:

10/08/2013

Reported:

10/11/2013

Sampling Type:

Soil

Project Name:

Sampling Condition:

Cool & Intact

Project Number:

H. E. WEST B #2 BATTERY NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 7 @ SURFACE (H302435-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/10/2013	ND	1.97	98.6	2.00	4.07	
Toluene*	<0.200	0.200	10/10/2013	ND	1.99	99.3	2.00	4.73	
Ethylbenzene*	<0.200	0.200	10/10/2013	ND	2.01	100	2.00	4.36	
Total Xylenes*	<0.600 0.600 10/10/2013 ND 5.88 98.1 6.00		6.00	4.75					
Total BTEX	<1.20 1.20 10/10/2013 ND								
Surrogate: 4-Bromofluorobenzene (PIL	100 %	6 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	96.0	16.0	10/09/2013	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<200	200	10/10/2013	ND	188	94.1	200	0.921	
DRO >C10-C28	5890	200	10/10/2013	ND	187	93.4	200	0.907	
Surrogate: 1-Chlorooctane	77.0 %	65.2-14	0						
Surrogate: 1-Chlorooctadecane	322 %	63.6-15	4						

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\*=Accredited Analyte

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Celeg D. Keine



#### **Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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 D. Keene

#### **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

#### RDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name	Company Name: Linn energy Project Manager: Jabb Kanplain					81	ll to	e da ini					ANAI	YSIS	S RE	QUE	ST		
Project Manage	r: Jadb Kamplain					). # <i>:</i>													
Address:					Co	mpany:			1				S						
City: Hobbs	State: NM	Zip: (	3824	40	Attn:			1				uo.		İ		,		-	
Phone #:	Fax #:				Address:							Ę.					·		
Project #:	Project Owner	:			City:				Σ		т	3/A		·					
Project Name:	H.E. West B#2 Ba	Her	4		Sta	ite:	Zip:		Chlorides	5		ТРН	Cations/Anions			ļ ·			
Project Location					Ph	one #:			은	801	BTEX	ΞŢ	atic	TDS					ĺ
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FOR LAB USE ONLY				MATRIX		PRESERV	SAMPLI	NG	づ	표	"	œ							
Lab I.D. 11302435	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	WASTEWATER SOIL OIL SLUDGE	OTHER:	ACID/BASE: ICE / COOL OTHER:	DATE	TIME		<b> -</b>			Complete						
	16int 1@ Surface	G	)	<b>V</b>		<b>X</b>	10-8-13	9:30	X	X	N								
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6	Point 6 @ Surface	6		₩.		K		9:55	W	LX	LV.						<u></u>		
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	nd Damages. Cardinal's liability and client's exclusive remedy for a ing those for negligence and any other cause whatsoever shall be									ible									

service. In no event shall Cardinal be liable for incidental or consequents damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services beganning by cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinguished By:	Date / / Received	d By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
	10-875	* // . <b></b> .	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Kyle Sdynaidt	19825 4UA	e senson	REMARKS:
Relinquished By:	Date: Beceived	d By:	kschnaidt@rice-ecs.com
	Time:		Knorman@rice-ecs.com
Delivered By: (Circle One)	<u></u>	Sample Condition   CHECKED BY:	─ Kjones@riceswd.com; jkamplain@rice-ecs.com
Delivered By. (Circle One)		Cool Intact (nitrals)	hconder@rice-ecs.com; Lweinheimer@rice-ecs.com
Sampler - UPS - Bus - Other:	-100	Yes Yes	incondengince-ecs.com, Ewellineimer@nce-ecs.com

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2#76



October 31, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: H. E. WEST B #2 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 10/25/13 16:20.

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

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.

Celes D. Keene

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



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/25/2013

Sampling Date:

10/25/2013

Reported:

Sampling Type:

Soil

Project Name:

10/31/2013

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

H. E. WEST B #2 BATTERY

Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

#### Sample ID: POINT 8 @ SURFACE (H302607-01)

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	10/29/2013	ND	2.02	101	2.00	0.429	
Toluene*	< 0.050	0.050	10/29/2013	ND	2.00	100	2.00	0.174	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	2.00	99.8	2.00	0.532	
Total Xylenes*	<0.150	0.150	10/29/2013	ND	5.85	97.5	6.00	0.0606	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	103 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	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/kg		Analyze	d By: MS			W.F.W. 100		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	56.7	10.0	10/29/2013	ND .	202	101	200	1.03	
Surrogate: 1-Chlorooctane	99.2	% 65.2-14	0 .	••					
Surrogate: 1-Chlorooctadecane	104 9	63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Kune



#### **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 D. Keine



#### **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

#### ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name	RECS					We.	t out	BI	LL TO					,	ANAI	YSIS	RE	QUE	ST			
Project Manage						P.0	. #:															
Address:						Company:				· ·				S			·					
City: Hobbs	State: NM	<b>Z</b> ìp: 88	240		•	Attn:								uo.								
Phone #:	Fax #:					Address:								Į.								
Project #:	ject #: Project Owner:				City:				ا , ا	Σ		I	1/8									
Project Name:					State: Zip:				<u>8</u>		×	<u>д</u>	üC						·			
Project Location: H.F. West B#2 by Hery				Phone #:					Chlorides	PH 8015	BTEX	Texas TPH	J∺	TDS	·							
Sampler Name:						Fax	(#:				[ )	3	ВТ	Ха	Ö	F.						
FOR LAB USE ONLY				MATRI	X		PRE	SERV	SAMPLI	NG	ᄗ	立		(e)	te							
Lab I.D. H302607	Sample I.D.	(G)RAB OR (C)OMP # CONTAINERS	GROUNDWATER WASTEWATER	SOIL	SLUDGE	отнек:	ACID/BASE:	ICE / COOL OTHER:	DATE	TIME					Complete Cations/Anions	·.						
	Point 8@ Surface	61		X	·		1	X	10-25-13	10:50	X	X	X									
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Relinquished By:	Date: Re	çeived By: /		Phone Result:   Yes   No   Add'  Phone #:	
	10-25-13	lin at W	l	Fax Result: ☐ Yes ☑ No. Add'l Fax #:	
Kle Schnaide	1420 4	Ode Hens	000	REMARKS:	
Relinguished By:	Date:	ceived By:		kschnaidt@rice-ecs.com	
	Time:		•	Knorman@rice-ecs.com	
	Time.			•	
	<del> </del>	Sample Condition CH	CKED BY:	Kjones@riceswd.com; jkamplain@rice-ecs.com	
Delivered By: (Circle One)					
Sampler - UPS - Bus - Other:		Cool Intact  Ves Yes  No No	Highest	hconder@rice-ecs.com; Lweinheimer@rice-ecs.com	
I		I INULINO I	`		

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SENDER GOMPLEJE TRISSECTION	COMPLETE THIS SECTION ON DELIVERY							
Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.  Print your name and address on the reverse	A. Signature  (X / Agent   Addressee							
so that we can return the card to you.  Attach this card to the back of the mailpiece, or on the front if space permits.	B. Received by Printed Name   C. Date of Delivery   126/3							
1, Article Addressed to:	D. Is delivery address different from item 12 hes If YES, enter delivery address below:							
Mike Bratcher								
NMOCD Environmental Specialist								
811 S. First St.								
Artesia, NM 88210	3. Service Type  Sign Certified Mail  Express Mail  Registered  Receipt for Merchandise  C.O.D.							
	4. Restricted Delivery? (Extra Fee) Yes							
2. Article Number (Transfer from service label) 7.007 2560	0003 03 0 3392 Cal smu							
PS Form 3811, February 2004 Domestic Ret	urn Receipt C7102595-02-M-1540							

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