Rice Environmental Consulting & Safety
P.O. Box 2948, Hobbs, NM 88241
Phone 575.393.2967

CERTIFIED MAIL
RETURN RECEIPT NO. 7007 2560 0000 4569 8364

September 16th, 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 – Max Friess MA Battery (2RP-1898)
UL/G sec. 30 T17S R31E
API No. 3001526882

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

On January 31st, 2013, a release at the battery occurred which discharged a total of 5-10 barrels of produced water and oil. An initial C-141 detailing this release was sent to NMOCD and BLM on September 5th, 2013 (Appendix A). The site is located 4.5 miles east of Loco Hills in UL/G sec. 30 T17S R31E in Eddy County, NM. The site is in an area of no known groundwater.

RECS met with BLM on July 29th, 2013. BLM stated that a vertical needed to be conducted at the site. To prepare for the vertical, the berm in the southeast corner was removed and disposed of at a NMOCD approved facility. On August 5th, 2013 a vertical was installed to a depth of 15 ft bgs (Figure 1). Samples were taken at regular intervals and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for analysis (Appendix B). As the vertical was advanced, laboratory chloride readings dropped until they reached 608 mg/kg at 15 ft bgs. GRO, DRO and BTEX laboratory readings were non-detect, except for at the surface where the DRO reading was 4,100 mg/kg.

On August 6th, 2013 BLM approved soil bore installation activities at the site that occurred on August 20th, 2013. One soil bores was installed at the site to a depth of 35 ft bgs (Figure 1). Field samples were taken at regular intervals as the bore was advanced and representative samples from the bore were taken to a commercial laboratory for analysis (Appendix C). The laboratory chloride readings dropped from 1,660 mg/kg at

18 ft bgs to 112 mg/kg at 30 and 35 ft bgs. GRO, DRO and BTEX readings in all samples were non-detect.

Photo documentation of these activities can be found in Appendix D.

Corrective Action Plan

Since there is no groundwater at the site, the residual chlorides in the vadose zone will not in any way affect groundwater beneath the site. However, to mitigate any chance that the residual chlorides could affect groundwater in the future, RECS recommends that Linn excavate the site to 18 ft x 38 ft to a depth of 3 ft bgs (Figure 2). The excavation will avoid the tanks and other facilities in the battery that could cause safety hazards. At 3 ft bgs, a 20-mil reinforced poly liner will be installed throughout the excavation. The excavated soil will be transported to a NMOCD approved facility. Once the liner is installed, the excavation will be backfilled with clean, imported soil. The site will not need to be seeded since the release occurred in an active battery.

Once the CAP activities have been completed, Linn will submit a request for 'remediation termination' or similar closure status of the regulatory file.

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

cc. Mike Burton, BLM

Attachments:

- Figure 1 – Vertical and SB Installation Data
- Figure 2 – Proposed Liner Installation
- Appendix A – Initial C-141
- Appendix B – Vertical Laboratory Analyses
- Appendix C – Soil Bore Documentation
- Appendix D – Photo Documentation

Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948, Hobbs, NM 88241
Phone 575.393.2967

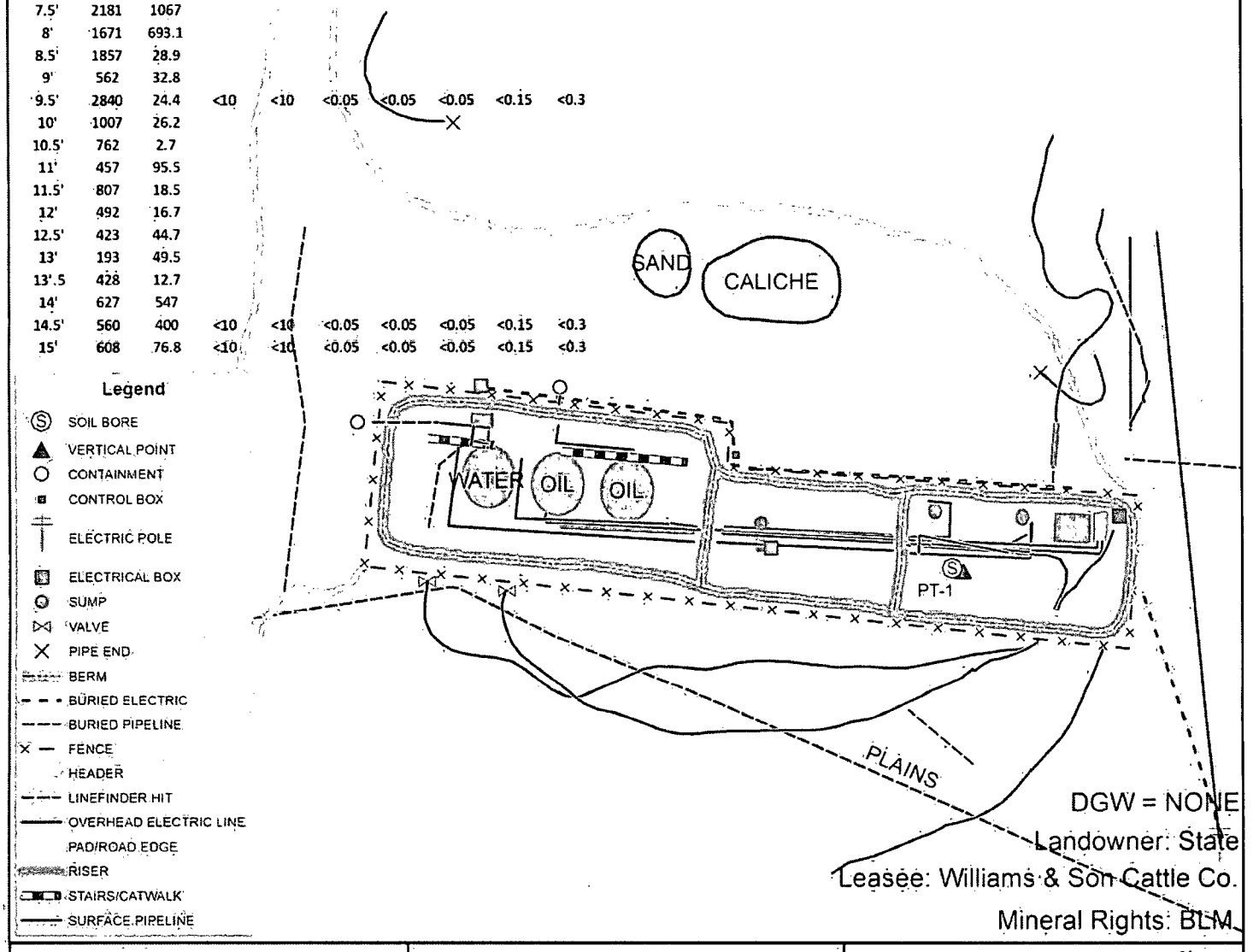
Vertical and SB Installation Data

Vertical Pt. 1

Depth	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
SS	6400	391.4	<50	4100	<0.2	<0.2	<0.2	<0.6	<1.2
6"	1840	15000							
1'	1695	332							
1.5'	1466	2301							
2'	1356	1155							
2.5'	1013	1792							
3'	909	457.5							
3.5'	649	348.2							
4'	713	376.5							
4.5'	2884	83.6							
5'	1889	80.9							
5.5'	1556	148.6							
6'	2320	54.8	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
6.5'	1457	82.6							
7'	1903	1345							
7.5'	2181	1067							
8'	1671	693.1							
8.5'	1857	28.9							
9'	562	32.8							
9.5'	2840	24.4	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
10'	1007	26.2							
10.5'	762	2.7							
11'	457	95.5							
11.5'	807	18.5							
12'	492	16.7							
12.5'	423	44.7							
13'	193	49.5							
13'.5	428	12.7							
14'	627	547							
14.5'	560	400	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
15'	608	76.8	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

Soil Bore

Depth	Cl-	PID	GRO	DRO	B	T	E	X	BTEX
18'	1660	2.3	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
21'	815	1							
24'	837	4.4							
30'	112	2.5	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3
35'	112	3.7	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3



DGW = NONE
Landowner: State
Leasee: Williams & Son Cattle Co.
Mineral Rights: BLM

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

LINN MAX FRIESS MA BATTERY AD (2RP-1898)

LEGALS: UL/G sec. 30
T-17-S R-31-E
EDDY COUNTY, NM

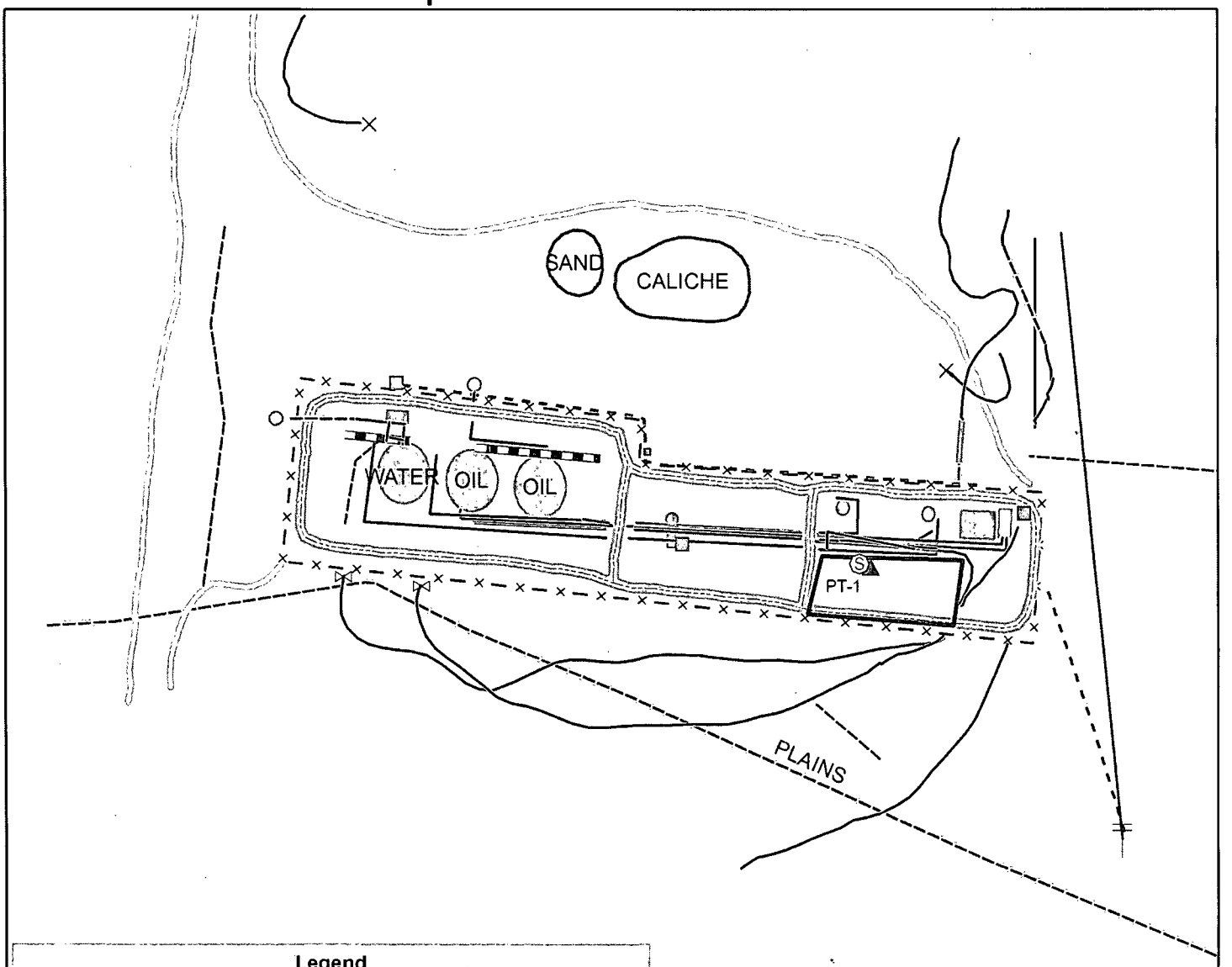
Figure 1

N W E S

0 30 60
Feet

GPS date: 8/20/13
Drawing date: 9/12/13
Drafted by: L. Weinheimer

Proposed Liner Installation



Legend

- SOIL BORE
- VERTICAL POINT
- PROPOSED18' x 38' 20-mil POLY LINER @ 3 FT
- CONTAINMENT
- CONTROL BOX
- ELECTRIC POLE
- ELECTRICAL BOX
- SUMP
- VALVE
- PIPE END
- BERM
- BURIED ELECTRIC
- BURIED PIPELINE
- FENCE
- HEADER
- LINEFINDER HIT
- OVERHEAD ELECTRIC LINE
- PAD/ROAD EDGE
- RISER
- STAIRS/CATWALK
- SURFACE PIPELINE
- PUMP
- SPOIL PILE
- STORAGE TANK
- TREATER

DGW = NONE
Landowner: State
Leasee: Williams & Son Cattle Co.
Mineral Rights: BLM

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

LINN MAX FRIESS MA BATTERY AD (2RP-1898)

LEGALS: UL/G sec. 30
T-17-S R-31-E
EDDY COUNTY, NM

Figure 2

N W E S

0 30 60
Feet

GPS date: 8/20/13
Drawing date: 9/12/13
Drafted by: L. Weinheimer

Appendix A

Initial C-141

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

RECEIVED
SEP 05 2013
NMOCD ARTESIA

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

nJMW1324954645

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Linn Energy 269324	Contact: Brian Wall
Address: 2130 W. Bender Blvd., Hobbs, NM 88240	Telephone No.: (806) 367-0645
Facility Name: Max Friess "MA" Battery	Facility Type: Battery

Surface Owner: State	Mineral Owner: BLM	API No.: 3001526882

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	30	17S	31E	1682	FNL	1879	FEL	Eddy

Latitude: 32°48'29.354"N Longitude: 103°54'19.52"W

NATURE OF RELEASE

Type of Release: Produced Water and Oil	Volume of Release: 5-10 barrels	Volume Recovered: 0 barrels
Source of Release: Battery release	Date and Hour of Occurrence: 4/31/13	Date and Hour of Discovery: 7/31/13
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse:	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A release in the battery of produced water and oil occurred. A total of 5-10 barrels were released.

Describe Area Affected and Cleanup Action Taken.* The release remained inside the bermed area of the battery. RECS met with BLM on July 29th, 2013. BLM stated that a vertical needed to be conducted at the site. On August 5th, 2013 a vertical was installed to a depth of 15 ft bgs. Samples were taken at regular intervals and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for analysis. As the vertical was advanced, laboratory chloride readings dropped until they reached 608 mg/kg at 15 ft bgs. GRO, DRO and BTEX laboratory readings were non-detect, except for at the surface where the DRO reading was 4,100 mg/kg. On August 6th, 2013 BLM approved soil bore installation activities at the site that occurred on August 20th, 2013. One soil bores was installed at the site to a depth of 35 ft bgs. Field samples were taken at regular intervals as the bore was advanced and representative samples from the bore were taken to a commercial laboratory for analysis. A Corrective Action Plan will be submitted to NMOCD and BLM with a path forward to remedy the site.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: Brian Wall	Approved by Environmental Specialist: Signed By: Mike Bratcher
Title: Construction Foreman II	Approval Date: SEP 06 2013 Expiration Date:
E-mail Address: Bwall@linnenergy.com	Conditions of Approval: Remediation per OCD Rule & Guidelines & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN: October 6, 2013 Attached ☐
Date: Phone: (806) 367-0645	

* Attach Additional Sheets If Necessary

2RP-1898

Appendix B

Vertical Laboratory Analyses

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

CARDINAL Laboratories

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

August 13, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: MAX FRIESS MA BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 08/06/13 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/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/06/2013	Sampling Date:	08/05/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: EXC 1 @ SURFACE (H301838-01)

BTEX 8260B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	08/10/2013	ND	2.17	108	2.00	3.04	
Toluene*	<0.200	0.200	08/10/2013	ND	1.97	98.7	2.00	2.03	
Ethylbenzene*	<0.200	0.200	08/10/2013	ND	1.97	98.5	2.00	2.23	
Total Xylenes*	<0.600	0.600	08/10/2013	ND	5.82	97.0	6.00	2.41	
Total BTEX	<1.20	1.20	08/10/2013	ND					

Surrogate: Dibromofluoromethane	*98.1 %*	*61.3-142*
Surrogate: Toluene-d8	*93.0 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*107 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**6400**	16.0	08/13/2013	ND	432	108	400	0.00	

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	<50.0	50.0	08/09/2013	ND	191	95.5	200	0.596	
DRO >C10-C28	**4100**	50.0	08/09/2013	ND	204	102	200	0.0598	

Surrogate: 1-Chlorooctane	*97.4 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*204 %*	*63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/06/2013	Sampling Date:	08/05/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: EXC 1 @ 6" (H301838-02)

BTEX 8260B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/10/2013	ND	2.17	108	2.00	3.04	
Toluene*	<0.050	0.050	08/10/2013	ND	1.97	98.7	2.00	2.03	
Ethylbenzene*	<0.050	0.050	08/10/2013	ND	1.97	98.5	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/10/2013	ND	5.82	97.0	6.00	2.41	
Total BTEX	<0.300	0.300	08/10/2013	ND					

Surrogate: Dibromofluoromethane	*97.2 %*	*61.3-142*
Surrogate: Toluene-d8	*93.9 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*97.2 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2320**	16.0	08/13/2013	ND	432	108	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/09/2013	ND	191	95.5	200	0.596	
DRO >C10-C28	<10.0	10.0	08/09/2013	ND	204	102	200	0.0598	

Surrogate: 1-Chlorooctane	*103 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*129 %*	*63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/06/2013	Sampling Date:	08/05/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: EXC 1 @ 9' 6" (H301838-03)

BTEX 8260B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2013	ND	2.28	114	2.00	1.60	
Toluene*	<0.050	0.050	08/08/2013	ND	2.19	110	2.00	2.07	
Ethylbenzene*	<0.050	0.050	08/08/2013	ND	2.12	106	2.00	1.60	
Total Xylenes*	<0.150	0.150	08/08/2013	ND	6.32	105	6.00	3.00	
Total BTEX	<0.300	0.300	08/08/2013	ND					

Surrogate: Dibromofluoromethane	*96.0 %*	*61.3-142*
Surrogate: Toluene-d8	*100 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*105 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2840**	16.0	08/13/2013	ND	432	108	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/09/2013	ND	191	95.5	200	0.596	
DRO >C10-C28	<10.0	10.0	08/09/2013	ND	204	102	200	0.0598	

Surrogate: 1-Chlorooctane	*102 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*128 %*	*63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/06/2013	Sampling Date:	08/05/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: EXC 1 @ 14' 6" (H301838-04)

BTEX 8260B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2013	ND	2.28	114	2.00	1.60	
Toluene*	<0.050	0.050	08/08/2013	ND	2.19	110	2.00	2.07	
Ethylbenzene*	<0.050	0.050	08/08/2013	ND	2.12	106	2.00	1.60	
Total Xylenes*	<0.150	0.150	08/08/2013	ND	6.32	105	6.00	3.00	
Total BTEX	<0.300	0.300	08/08/2013	ND					

Surrogate: Dibromofluoromethane	*98.6 %*	*61.3-142*
Surrogate: Toluene-d8	*102 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*104 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	08/13/2013	ND	432	108	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/09/2013	ND	191	95.5	200	0.596	
DRO >C10-C28	<10.0	10.0	08/09/2013	ND	204	102	200	0.0598	

Surrogate: 1-Chlorooctane	*105 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*129 %*	*63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/06/2013	Sampling Date:	08/05/2013
Reported:	08/13/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: EXC 1 @ 15' (H301838-05)

BTEX 8260B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2013	ND	2.28	114	2.00	1.60	
Toluene*	<0.050	0.050	08/08/2013	ND	2.19	110	2.00	2.07	
Ethylbenzene*	<0.050	0.050	08/08/2013	ND	2.12	106	2.00	1.60	
Total Xylenes*	<0.150	0.150	08/08/2013	ND	6.32	105	6.00	3.00	
Total BTEX	<0.300	0.300	08/08/2013	ND					

Surrogate: Dibromofluoromethane	*96.0 %*	*61.3-142*
Surrogate: Toluene-d8	*99.3 %*	*71.3-129*
Surrogate: 4-Bromofluorobenzene	*105 %*	*65.7-141*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**608**	16.0	08/13/2013	ND	432	108	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/09/2013	ND	191	95.5	200	0.596	
DRO >C10-C28	<10.0	10.0	08/09/2013	ND	204	102	200	0.0598	

Surrogate: 1-Chlorooctane	*103 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*126 %*	*63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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.
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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Lion Energy		BILL TO	
Project Manager:		P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location: Max Friess MA Battery		Phone #:	
Sampler Name: Chris Flores		Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Chloride	BTEX	TPH
H30f638																	
1	Excavation 1 @ surface	G	1			X							8-5-2013	2:00 pm	X	X	X
2	Excavation 1 @ 6"	G	1			X								2:10	X	X	X
3	" " @ 9'6"	G	1			X								2:20	X	X	X
4	" " @ 14'6"	G	1			X								2:30	X	X	X
5	" " @ 15'	G	1			X								2:40 pm	X	X	X

Relinquished By: Chris Flores	Date: 8-6-2013 Time: 9:30	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
			REMARKS: Jkamplain lweinheimer cflores
Delivered By: (Circle One) Sampler - UPS - Bus - Other: -7.8°	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	

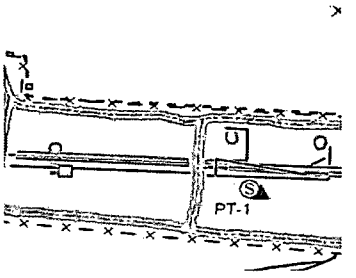
† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#54

Appendix C

Soil Bore Installation Documentation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

Logger:	Edward Cesareo		RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC
Driller:	Harrison & Cooper, Inc.		
Drilling Method:	Air rotary		**Linn Max Friess MA Battery** **Well ID:** SB-1
Start Date:	8/20/2013		
End Date:	8/20/2013		
Comments: All samples were from cuttings.			**Location:** UL/G sec. 30 T17S R31E
DRAFTED BY: L. Weinheimer			**Lat:** 32°48'29.148"N **Long:** 103°54'18.425"W **County**: Eddy **State**: NM
TD = 35 ft		GW = None	

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				RED SAND		bentonite seal
18 ft	1592	Cl- 1660	2.3			
BTEX <0.3		GRO <10				
		DRO <10				
21 ft	815		1.0			
30 ft	837	Cl- 112	4.4			
BTEX <0.3		GRO <10				
		DRO <10				
35 ft	203	Cl- 112	2.5			
BTEX <0.3		GRO <10				
		DRO <10				

CARDINAL Laboratories

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

August 28, 2013

JACOB KAMPLAIN

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: MAX FRIESS MA BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 08/22/13 8:50.

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/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/22/2013	Sampling Date:	08/20/2013
Reported:	08/28/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 1 @ 18' (H302008-01)

BTEX 8021B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2013	ND	2.20	110	2.00	6.60	
Toluene*	<0.050	0.050	08/26/2013	ND	2.14	107	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/26/2013	ND	2.18	109	2.00	6.27	
Total Xylenes*	<0.150	0.150	08/26/2013	ND	6.47	108	6.00	6.45	
Total BTEX	<0.300	0.300	08/26/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1660**	16.0	08/26/2013	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: AR/**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/26/2013	ND	208	104	200	0.257	
DRO >C10-C28	<10.0	10.0	08/26/2013	ND	195	97.7	200	2.71	

Surrogate: 1-Chlorooctane *98.0 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *102 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/22/2013	Sampling Date:	08/20/2013
Reported:	08/28/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 1 @ 30' (H302008-02)

BTEX 8021B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2013	ND	2.20	110	2.00	6.60	
Toluene*	<0.050	0.050	08/26/2013	ND	2.14	107	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/26/2013	ND	2.18	109	2.00	6.27	
Total Xylenes*	<0.150	0.150	08/26/2013	ND	6.47	108	6.00	6.45	
Total BTEX	<0.300	0.300	08/26/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	08/26/2013	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: AR/**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/26/2013	ND	208	104	200	0.257	
DRO >C10-C28	<10.0	10.0	08/26/2013	ND	195	97.7	200	2.71	

Surrogate: 1-Chlorooctane *93.0 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *96.2 %* *63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/22/2013	Sampling Date:	08/20/2013
Reported:	08/28/2013	Sampling Type:	Soil
Project Name:	MAX FRIESS MA BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 1 @ 35' (H302008-03)

BTEX 8021B mg/kg **Analyzed By: DW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2013	ND	2.20	110	2.00	6.60	
Toluene*	<0.050	0.050	08/26/2013	ND	2.14	107	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/26/2013	ND	2.18	109	2.00	6.27	
Total Xylenes*	<0.150	0.150	08/26/2013	ND	6.47	108	6.00	6.45	
Total BTEX	<0.300	0.300	08/26/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL *104 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	08/26/2013	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: AR/**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/26/2013	ND	191	95.7	200	3.91	
DRO >C10-C28	<10.0	10.0	08/26/2013	ND	186	93.0	200	5.56	

Surrogate: 1-Chlorooctane *94.1 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *97.4 %* *63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: RECS	**BILL TO**
Project Manager: Jacob Kamplain	P.O. #:
Address:	Company:
City: State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: Max Friess NM battery	Phone #:
Sampler Name: Kyle Schmaidt	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Cl-	BTEX	TPH
H302008																	
1	SB1 @ 18'	G	1			X					X		8-20-13	4:00	X	X	X
2	SB1 @ 30'	G	1			X					X		8-20-13	4:05	X	X	X
3	SB1 @ 35'	G	1			X					X		8-20-13	4:10	X	X	X

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Kyle Schmaidt	Date: 8/22/13 Time: 8:50	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: hcondor@rice-ecs.com JKumplain@rice-ecs.com Knorman@rice-ecs.com lweinheimer@rice-ecs.com kschmaidt@rice-ecs.com

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

#CK

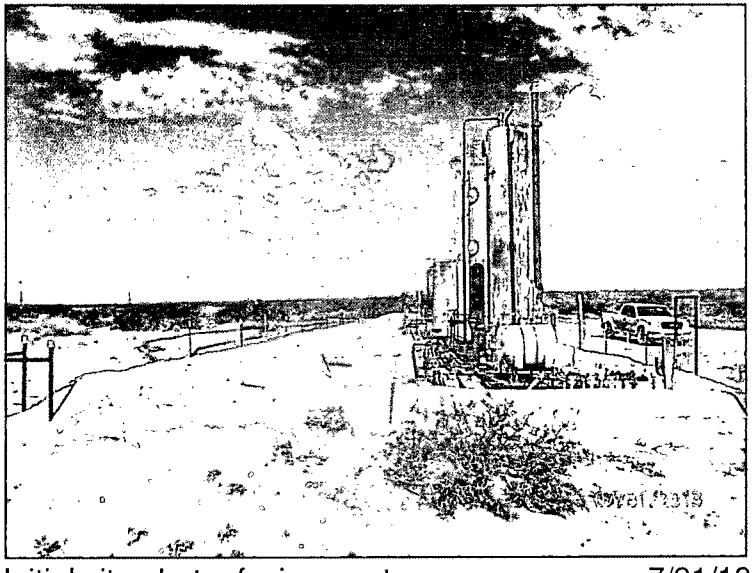
Appendix D

Photo Documentation

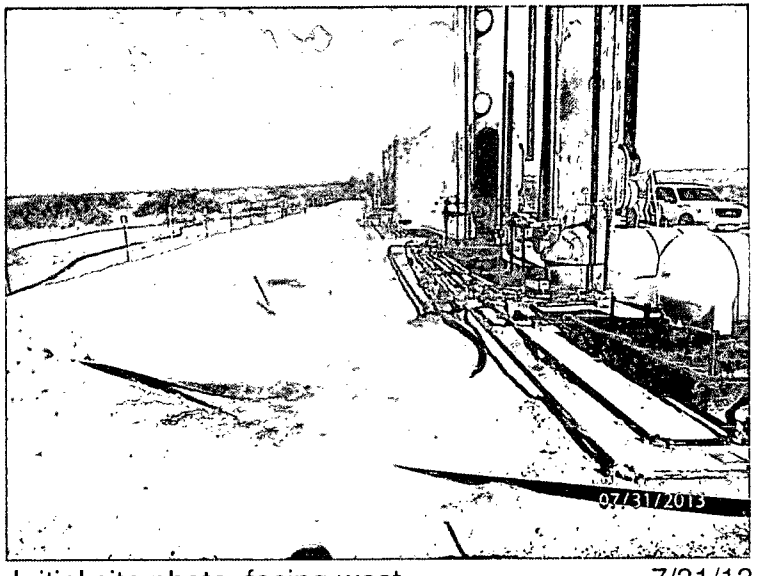
RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

Linn Max Friess MA Battery

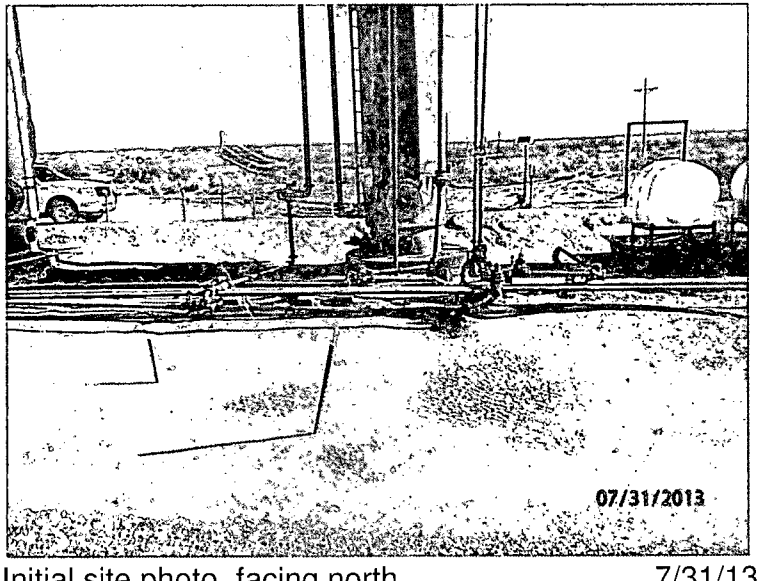
Unit Letter G, Section 30, T17S, R31E



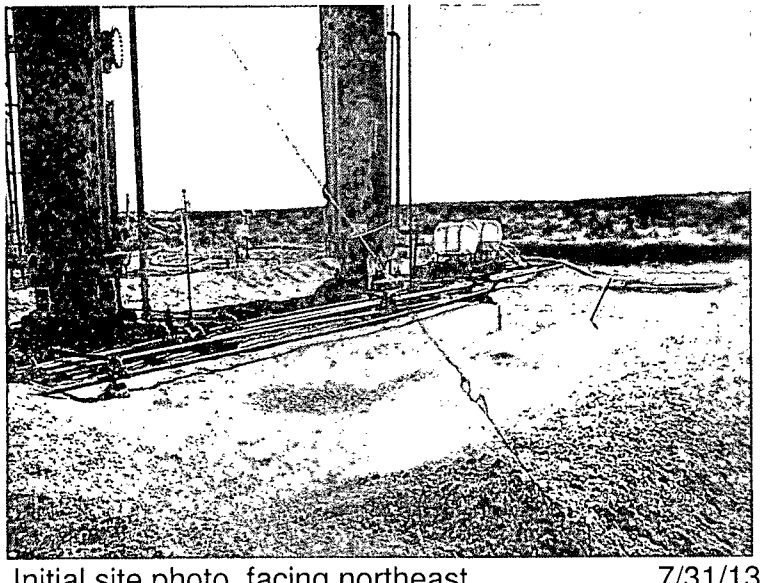
Initial site photo, facing west 7/31/13



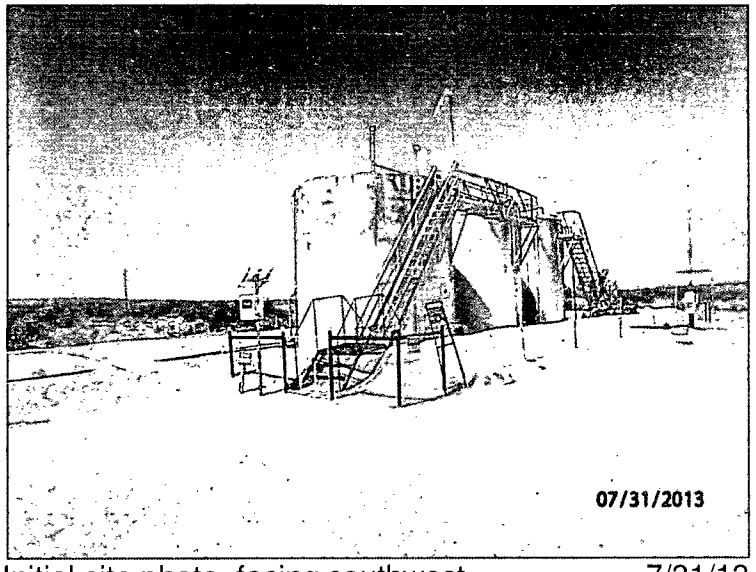
Initial site photo, facing west 7/31/13



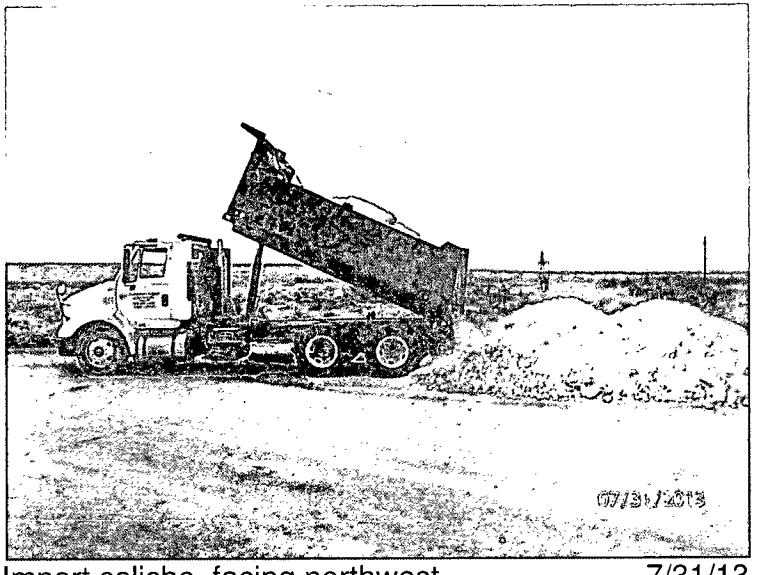
Initial site photo, facing north 7/31/13



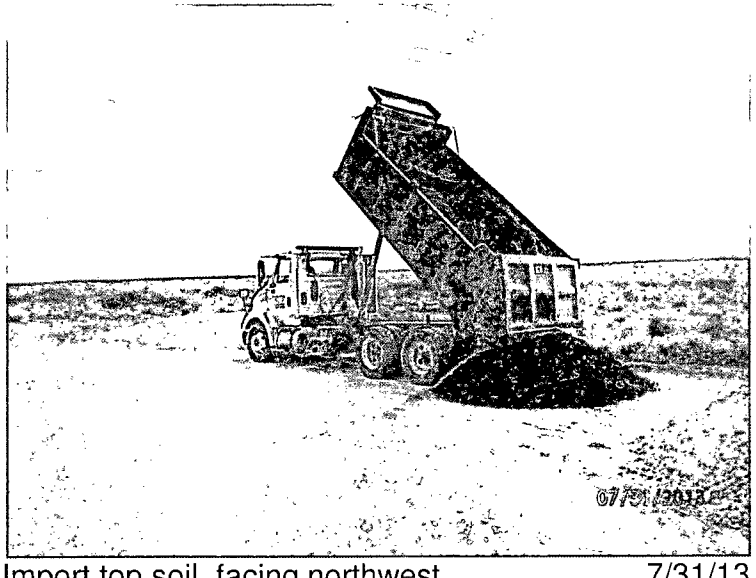
Initial site photo, facing northeast 7/31/13



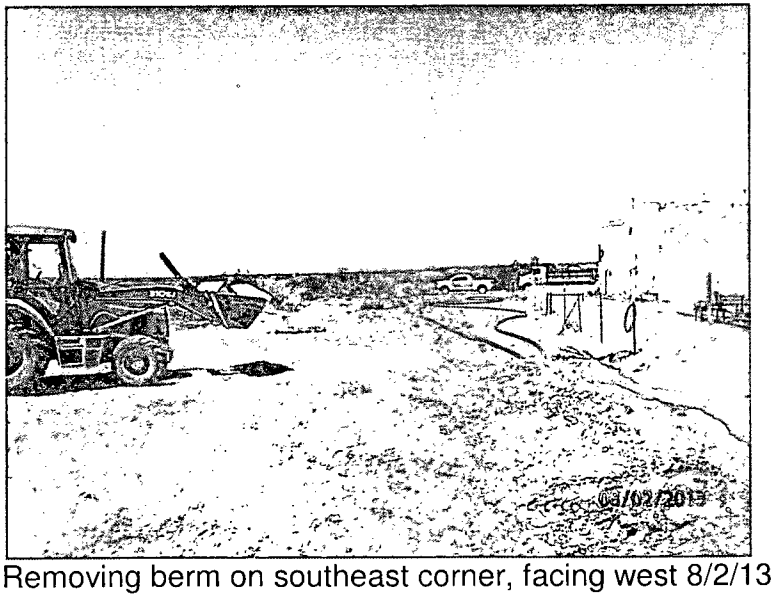
Initial site photo, facing southwest 7/31/13



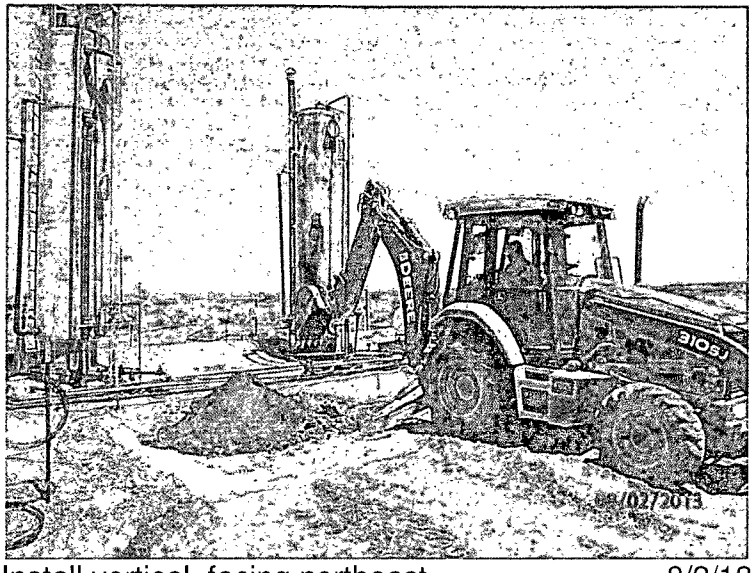
Import caliche, facing northwest 7/31/13



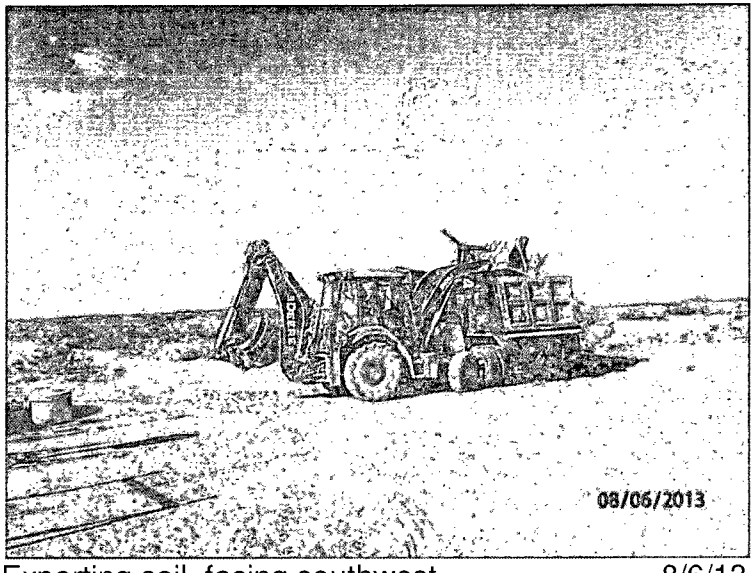
Import top soil, facing northwest 7/31/13



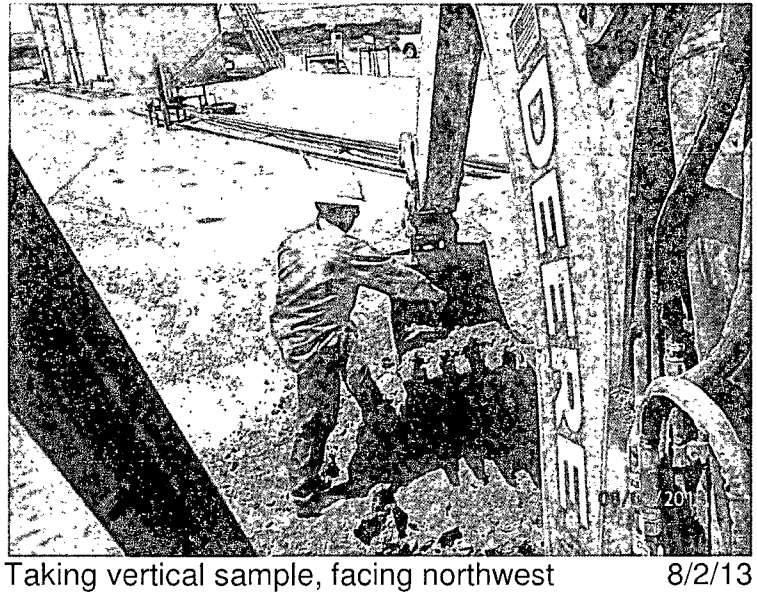
Removing berm on southeast corner, facing west 8/2/13

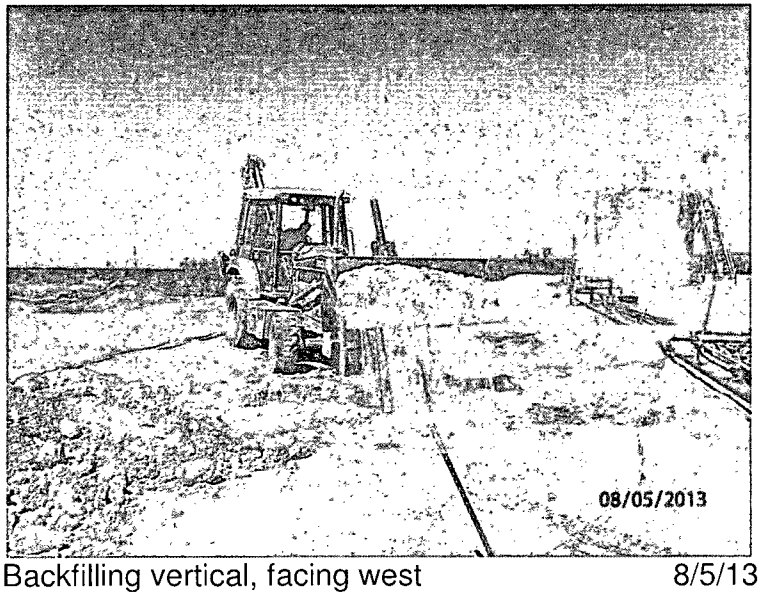


Install vertical, facing northeast 8/2/13

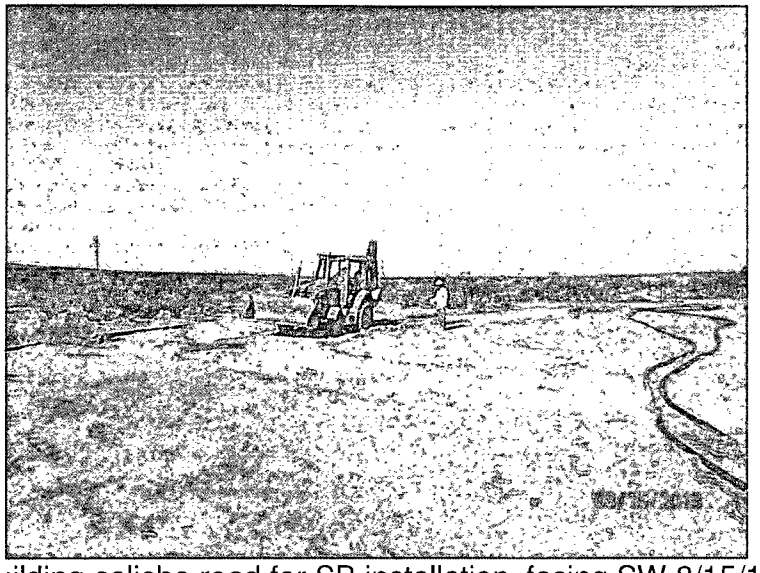


Exporting soil, facing southwest 8/6/13

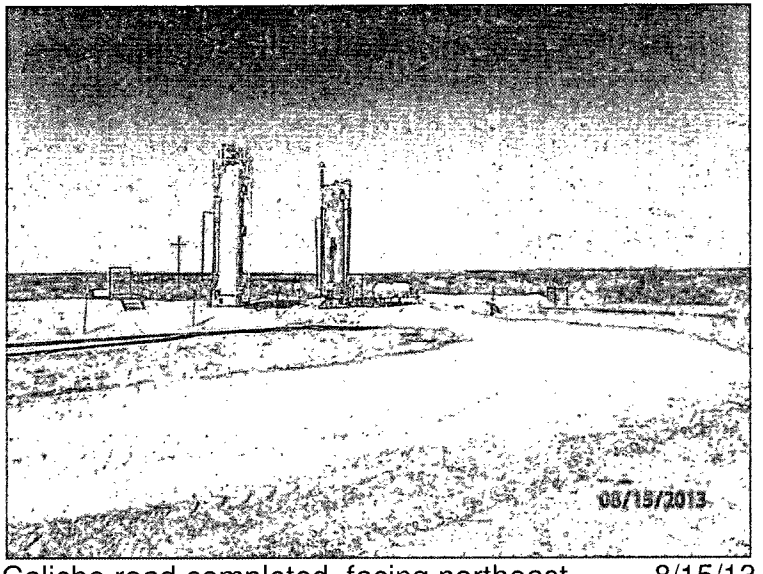

Taking vertical sample, facing northwest 8/2/13



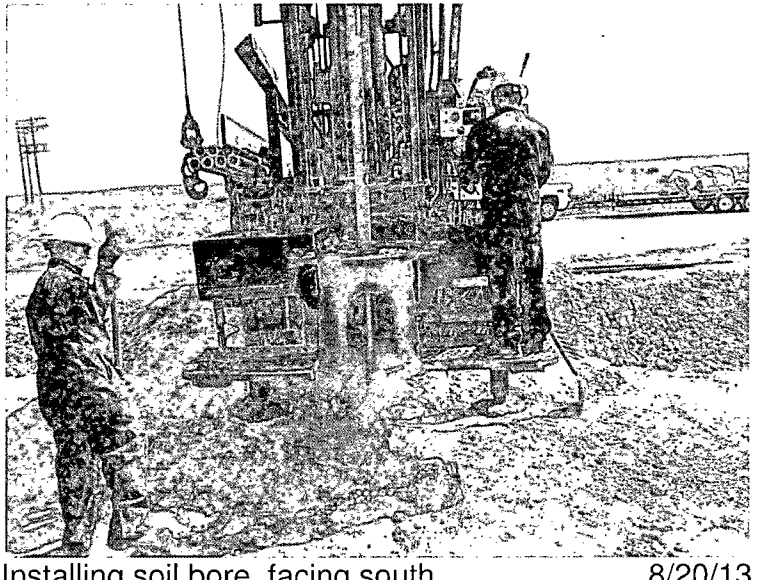
Backfilling vertical, facing west 8/5/13



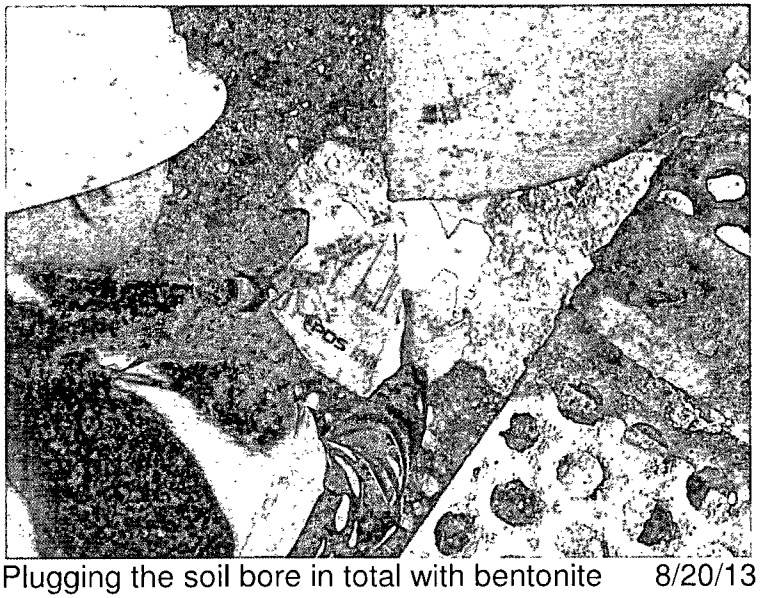
Building caliche road for SB installation, facing SW 8/15/13



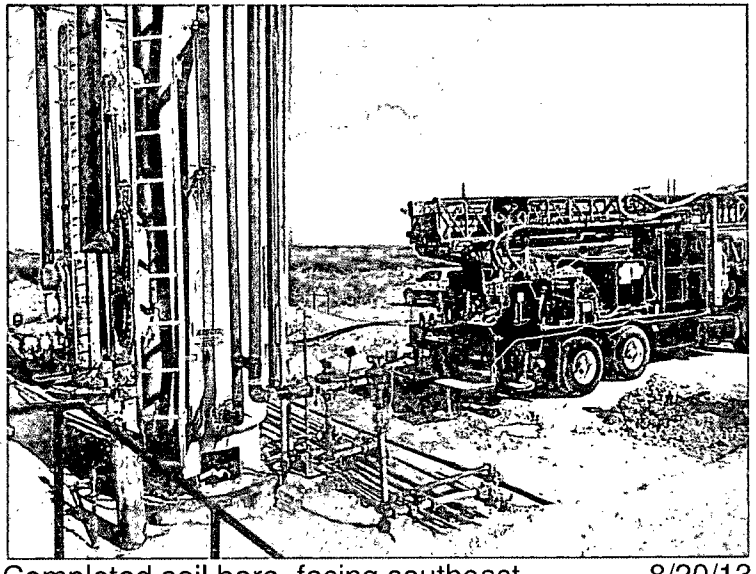
Caliche road completed, facing northeast 8/15/13



Installing soil bore, facing south 8/20/13



Plugging the soil bore in total with bentonite 8/20/13



Completed soil bore, facing southeast 8/20/13