1R - 427-284

REPORTS

DATE:

7-19-13

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

CERTIFIED MAIL
RETURN RECEIPT NO. 7008 1140 0001 3072 4659

July 19th, 2013

Mr. Edward Hansen
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: **ICP Report and Termination Request**
Rice Operating Company – EME SWD System
EME Jct. N-34 (1R427-284): UL/N sec. 34 T19S R37E

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the EME Salt Water Disposal (SWD) system. ROC is the service provider (agent) for the EME SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Background and Previous Work

The site is located approximately 1.5 miles southeast of Monument, New Mexico at UL/N sec. 34 T19S R37E as shown on the Site Location Map (Figure 1). An updated groundwater study of NM OSE records, conducted in 2013, indicated that groundwater would likely be encountered at a depth of approximately 43 +/- feet. However, soil bore installation activities at the site showed that there is no groundwater in this area.

In 2007, ROC initiated work on the former EME N-34 junction box. The site was delineated using a backhoe to form a 30 ft x 25 ft x 15 ft deep excavation and soil samples were screened at regular intervals for both hydrocarbons and chlorides. From the excavation, the four-wall composite, the bottom composite and the backfill were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite showed a chloride reading of 912 mg/kg and a gasoline range organics (GRO) and diesel range organics (DRO) reading of non-detect. The bottom composite showed a chloride laboratory reading of 432 mg/kg and a GRO and DRO reading of non-detect. The backfill had a laboratory chloride reading of 848 mg/kg and a GRO and DRO reading of non-detect. The excavated soil was backfilled into the excavation to 5 ft bgs. A 5 ft deep shelf was excavated 5 ft out from the north, south and east walls and 3 ft out from the west wall to prepare the site for a clay layer. At 5 ft bgs, a one foot thick clay layer was installed with clay compaction tests performed on September 28th, 2007 and October 2nd,

2007. The remaining excavated soil was used to backfill the site to the surface and contour it to the surrounding location. An identification plate was placed on the surface of the site to mark its location for future environmental considerations. The site was seeded with a blend of native vegetation to inhibit the downward migration of chlorides. NMOCD was notified of potential groundwater impact on July 16th, 2008, and a junction box disclosure report was submitted to NMOCD with all the 2008 junction box closures and disclosures.

To further delineate the site, ROC submitted an Investigation and Characterization Plan (ICP) on March 28th, 2013 to NMOCD which was approved on April 22nd, 2013. As part of the ICP, RECS personnel were on site to install one soil bore on June 19th, 2013 (Figure 2). As the bore was being advanced, samples were taken every two feet and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for confirmation of field data. Laboratory chloride readings returned results of 960 mg/kg at 14 ft bgs and 176 mg/kg at 20 ft bgs. GRO and DRO readings for both samples returned non-detect.

Red bed clay was encountered at 22 ft bgs, which indicates the bottom of the aquifer. Since no water was evident during drilling activities, the bore was drilled down to approximately 32 ft bgs and left open for over 48 hours to let water accumulate in the bore. On June 21st, 2013, ARC Environmental checked the bore with a Solinist Water Level Meter for water accumulation. The meter indicated no water within the borehole at a total depth of 37.32 feet (Appendix A).

The soil bore data shows a decrease in chloride to a concentration of 176 mg/kg at 20 ft bgs. Since there is no groundwater beneath the site, it is evident that the residual chlorides in the vadose zone cannot adversely affect groundwater. In addition, the existing 40 ft x 33 ft clay liner installed at a depth of 5 ft bgs will also inhibit the down migration of constituents at the site. The site has returned to normal vegetative capacity and the area surrounding the active junction box is used as a driving surface for oilfield traffic (Appendix B). Vegetation above the liner will also provide a natural infiltration barrier for the site since plants capture water through their roots thereby reducing the volume of water moving through the vadose zone.

Given that the residual constituents in the vadose zone will cannot in any way affect groundwater beneath the site and that the clay liner and vegetation will inhibit further migration of constituents, ROC respectfully requests 'remediation termination' or similar closure status of the site.

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

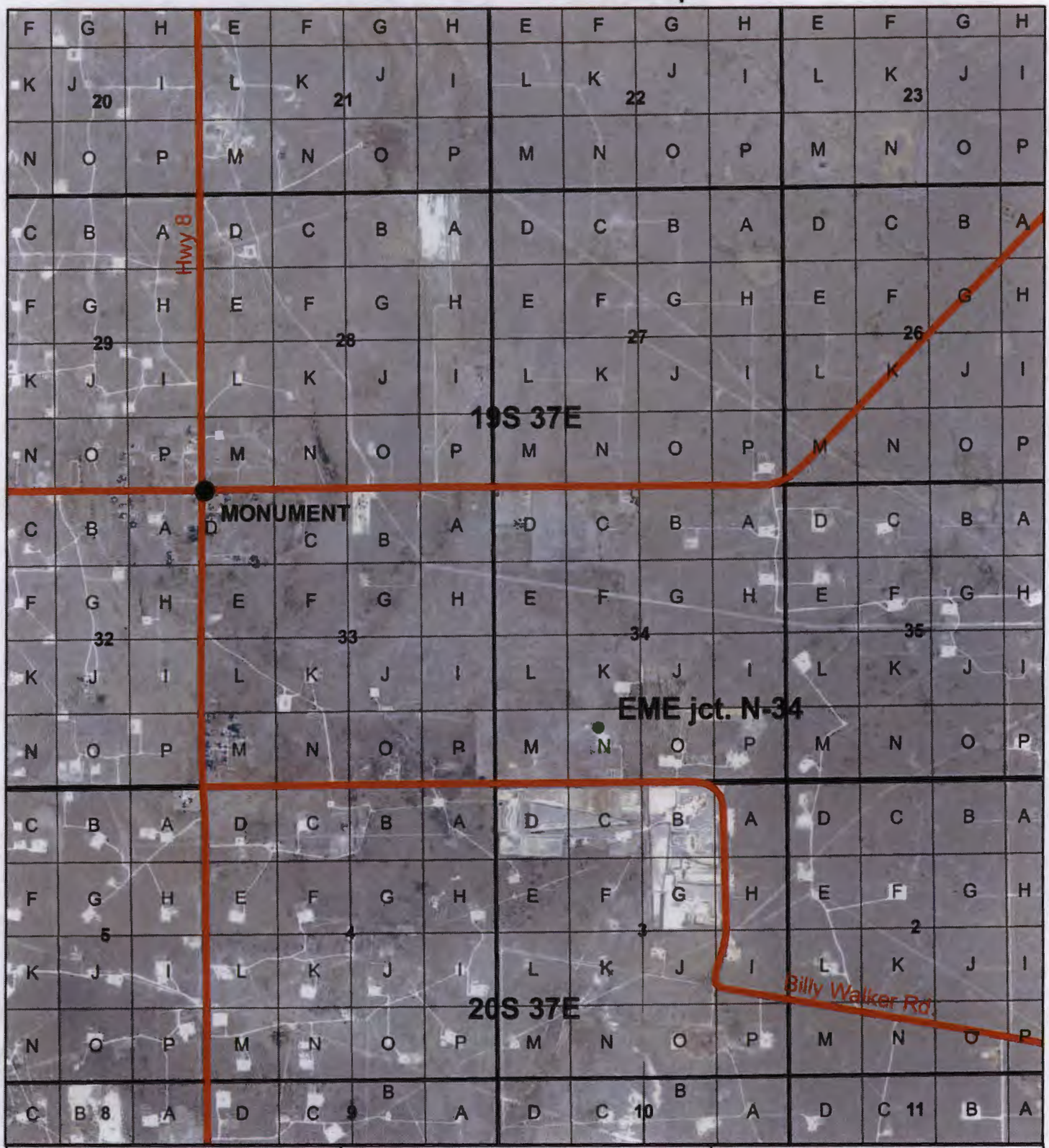
Attachments:

Figure 1 – Site Location Map
Figure 2 – Soil Bore Installation Map
Appendix A – Soil Bore Installation Documentation
Appendix B – Site Photo Documentation

Figures

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

Site Location Map



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC
RECS

EME jct. N-34

Legals: UL/N sec. 34
T-19-S R-37-E
LEA COUNTY, NM

NMOCD CASE #: 1R427-284

Figure 1

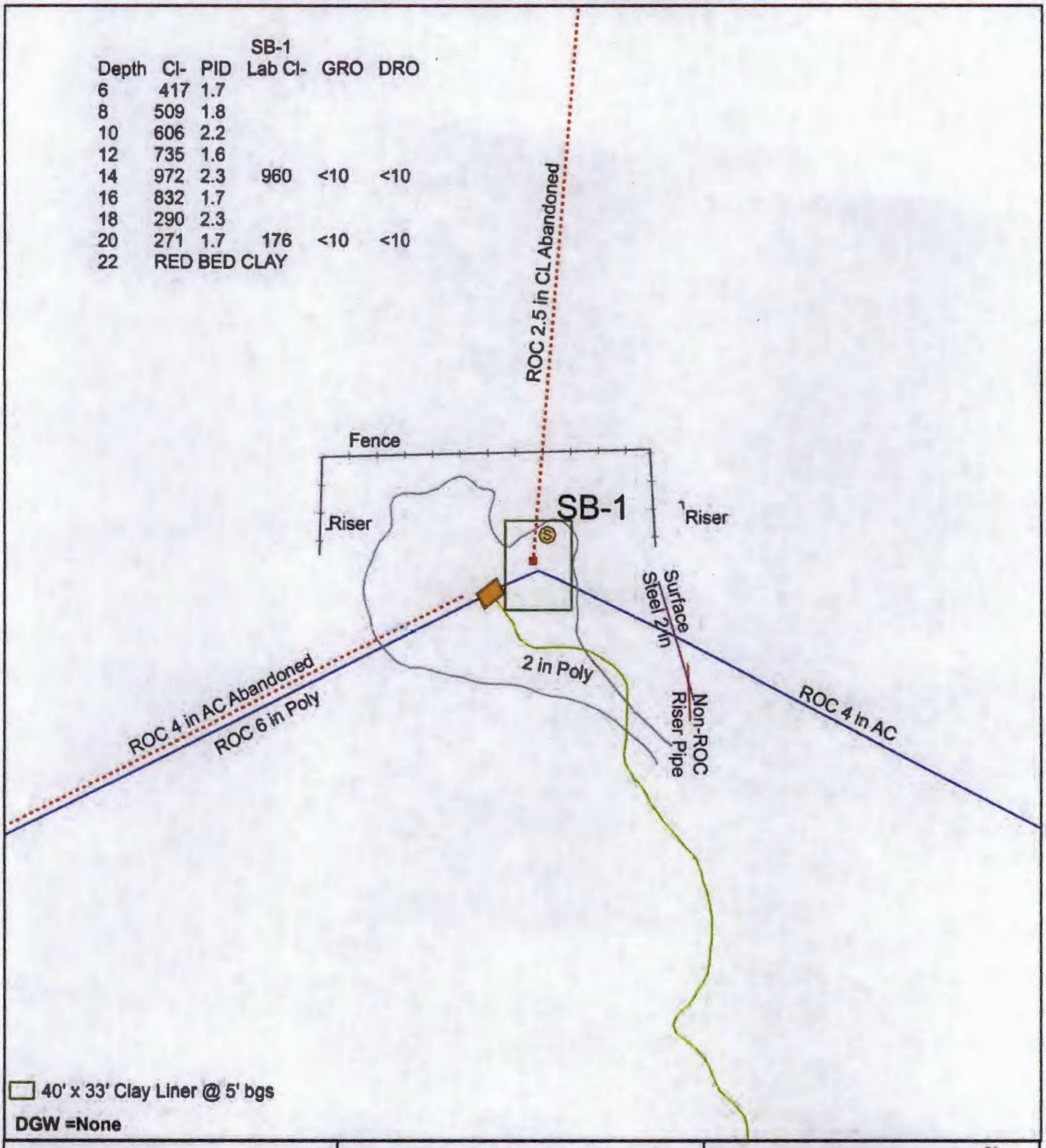
N W E S

0 0.2 0.4 0.8 Miles

Drawing date: 7/8/13
Drafted by: L. Weinheimer

Soil Bore Installation

Depth	Cl-	PID	SB-1 Lab Cl-	GRO	DRO
6	417	1.7			
8	509	1.8			
10	606	2.2			
12	735	1.6			
14	972	2.3	960	<10	<10
16	832	1.7			
18	290	2.3			
20	271	1.7	176	<10	<10
22	RED BED CLAY				



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME jct. N-34

Legals: UL/N sec. 34
T-19-S R-37-E
LEA COUNTY, NM

NMOCD CASE #: 1R427-284

Figure 2

N W E S

0 40 80 Feet

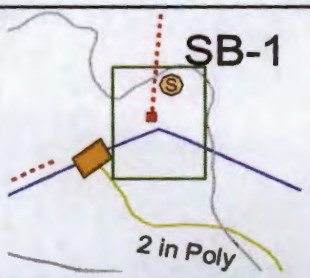
Drawing date: 6/24/13
Drafted by: C.Ursanic

Appendix A

Soil Bore Documentation

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

Logger:	Kyle Norman & Edward Cesareo
Driller:	Harrison & Cooper, Inc.
Drilling Method:	Air Rotary
Start Date:	6/19/2013
End Date:	6/19/2013



Project Name: EME Jct. N-34 **Well ID:** SB-1

Project Consultant: RECS

Comments: SB-1 is located 14 ft northeast of the former junction box site. All samples were from cuttings.

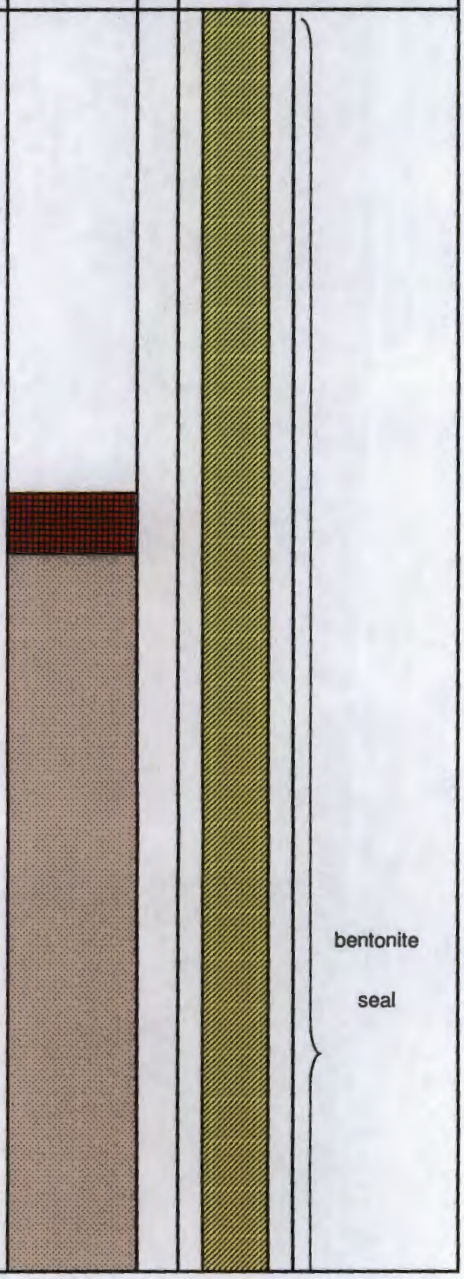
DRAFTED BY: L. Weinheimer

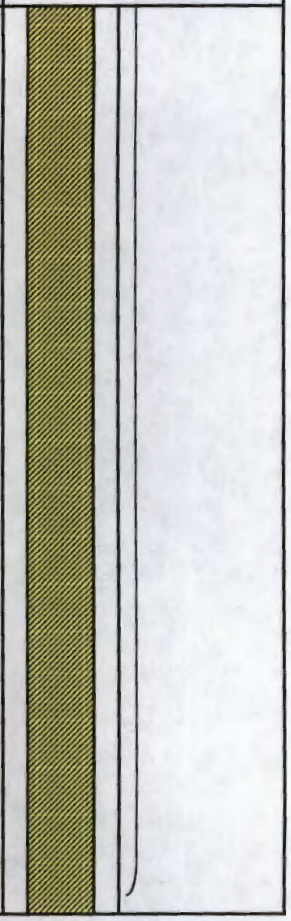
TD = 32 ft GW = NONE

Location: UL/N sec. 34 T19S, R37E

Lat: 32°36'44.376"N **Long:** 103°14'32.588"W **County:** Lea **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description
SS				Regolith
2 ft				
4 ft				
5 ft				
				CLAY LINER
6 ft	417		1.7	Tan Sand with Caliche
8 ft	509		1.8	
10 ft	606		2.2	
12 ft	735		1.6	



Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
14 ft	972	Cl- 960	2.3	Tan Sand with Caliche		
		GRO <10		Tan Caliche		
		DRO <10				
16 ft	832		1.7			
				Caliche		
18 ft	290		2.3			
20 ft	271	Cl- 176	1.7			
		GRO <10				
		DRO <10				
22 ft				RED BED CLAY		
32 ft						

CARDINAL Laboratories

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

June 24, 2013

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JCT. N-34

Enclosed are the results of analyses for samples received by the laboratory on 06/19/13 14:35.

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 Operating Company
KATIE JONES
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	06/19/2013	Sampling Date:	06/19/2013
Reported:	06/24/2013	Sampling Type:	Soil
Project Name:	EME JCT. N-34	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB #1 14' (H301421-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**960**	16.0	06/20/2013	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	06/21/2013	ND	220	110	200	1.01	
DRO >C10-C28	<10.0	10.0	06/21/2013	ND	231	116	200	0.0575	

Surrogate: 1-Chlorooctane	*97.7 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*94.4 %*	*63.6-154*

Sample ID: SB #1 20' (H301421-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	06/20/2013	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	06/21/2013	ND	213	106	200	0.956	
DRO >C10-C28	<10.0	10.0	06/21/2013	ND	213	106	200	3.66	

Surrogate: 1-Chlorooctane	*93.3 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*94.9 %*	*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 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name:	RICE Operating	**BILL TO**	
Project Manager:	Katie Jones	**P.O. #:**	
Address:	112 W. Taylor	**Company:**	
City:	Hobbs **State:** NM **Zip:** 88240	**Attn:**	
Phone #:	**Fax #:**	**Address:**	
Project #:	**Project Owner:**	**City:**	
Project Name:		**State:** **Zip:**	
Project Location:	EME Sct. N-34	**Phone #:**	
Sampler Name:	Edward Cesareo	**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	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS					
H301421	EME Sct. N-34																								
1	SB#1 14'	G	1			✓							6-19-13	9:00	✓	✓									
2	SB#1 20'	G	1			✓							6-19-13	9:05	✓	✓									

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 consequental 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:	Date: 6-19-13	**Received By:**	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Steve Cesareo	Time: 2:35	Jodi Henson	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Relinquished By:	Date:	**Received By:**	REMARKS:
	Time:		email results hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; Lpena@riceswd.com; knorman@rice-ecs.com; ecesareo@rice-ecs.com

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

Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No

CHECKED BY: (Initials) JH

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#54

Arc Environmental
P. O. Box 1772
Lovington, New Mexico 88260
(575) 631-9310
Rozanne Johnson ~ rozanne@valornet.com

June 21, 2013

Mr. Hack Conder
RICE Operating Company
112 West Taylor
Hobbs, New Mexico 88240

Re: EME Junction N-34

Mr. Conder,

On Friday June 21, 2013 soil bore #1 at the EME Junction N-34, Lea County T19S, R37E, Sec 34 Unit Letter N was checked with a Solinist Water Level Meter for water accumulation within the borehole. The meter indicated no water within the borehole at a total depth of 37.32 feet.

Sincerely,
Arc Environmental

Rozanne Johnson
Rozanne Johnson

Electronic Copy: Hack Conder
Katie Jones

EME jct. N-34 (1R427-284)
Unit Letter N, Section 34, T-19-S, R-37-E

Drilling SB-1, facing northeast 6/19/13

Check for groundwater, facing west 6/21/13

Plugging SB-1 in total with bentonite, 6/21/13

Completed SB-1, facing west 6/21/13

Appendix B

Site Photo Documentation

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

EME Jct. N-34 (1R427-284)

UL/N sec. 34 T19S R37E

Site Photo, facing east 6/12/13

Site Photo, facing west 6/12/13