1R - 427-281

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 4673

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. J-36 vent (1R427-281): UL/J, Sec. 36, T20S, R36E
Formerly EME Jct. H-36 vent

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. The site was previously referred to as the EME Jct. H-36 vent. However, GIS mapping shows the site to be located within unit letter J (Figure 1). To reflect the geographical location of the site, the name has been changed to the EME Jct. J-36 vent. All future correspondence will reference EME Jct. J-36 vent.

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 6.5 miles southwest of Monument, New Mexico at UL/J sec. 36 T20S R36E as shown on the Site Location Map (Figure 2). An updated groundwater study of NM OSE records, conducted in 2013, indicated that groundwater would likely be encountered at a depth of approximately 269 +/- feet.

In 2007, ROC initiated work on the former EME J-36 junction box, which contained a vent. The site was delineated using a backhoe to form a 10 ft x 10 ft x 12 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 blended backfill were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite showed a chloride reading of 704 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 720 mg/kg and a GRO and DRO reading of non-detect. The blended backfill showed a laboratory chloride reading of 1,060 mg/kg and a GRO and DRO reading of non-detect. The site was backfilled with the blended soil to 6 ft bgs. At 6-5 ft bgs, a 1 foot thick clay layer was installed. The site was then backfilled with clean, imported soil to ground surface and the area was contoured to the surrounding landscape. On July 13th, 2007, the site was seeded with a blend of native vegetation. An identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on January 26th, 2009 and a junction box disclosure report was submitted to NMOCD with all the 2008 junction box closures and disclosures.

On March 27th, 2013, ROC submitted an Investigation and Characterization Plan (ICP) to NMOCD, which was approved on April 22nd, 2013. As part of the ICP, RECS personnel were on site to conduct soil bores installations on June 19th, 2013. A total of two soil bores were installed (Figure 3). Samples were taken at regular intervals and field tested for chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for analysis (Appendix A). SB-1 returned laboratory chloride readings of 224 mg/kg at 40 ft bgs and 96 mg/kg at 55 ft bgs. SB-2 returned laboratory chloride readings of 176 mg/kg at 25 ft bgs, 240 mg/kg at 40 ft bgs and 128 mg/kg at 45 ft bgs. GRO and DRO returned results of non-detect at all depths in both bores.

All of the soil bore data shows laboratory reading below 250 mg/kg. Therefore, it is evident that the residual chlorides in the vadose zone will not adversely affect groundwater beneath the site. In addition, the 10 ft x 10 ft clay liner will also inhibit the downward migration of constituents at the site. The site has returned to normal vegetative capacity (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 to groundwater.

Given that the residual constituents in the vadose zone will not in any way affect groundwater beneath the site and that the clay liner and vegetation will inhibit further migration of constituents to groundwater, 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

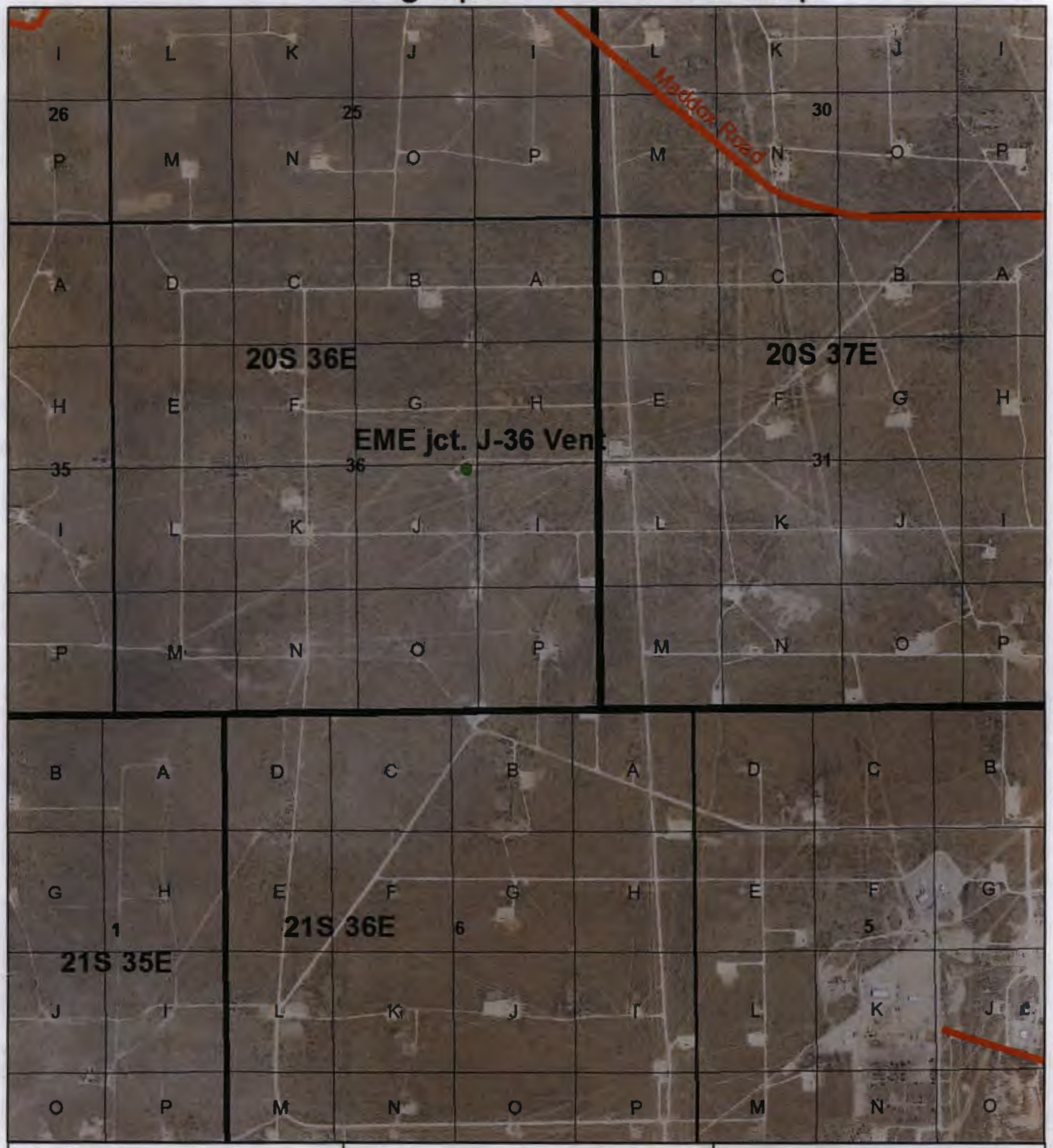
Attachments:

Figure 1 – Geographical Location Map
Figure 2 – Site Location Map
Figure 3 – 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 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Geographical Location Map



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME jct. J-36 Vent

Legals: UL/J sec. 36
T-20-S R-36-E
LEA COUNTY, NM
NMOCD CASE #: 1R427-281

Figure 1

N W E S

0 0.125 0.25 0.5 Miles

Drawing date: 2-27-13
Drafted by: LS

Site Location Map

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME jct. J-36 Vent

Legals: UL/J sec. 36
T-20-S R-36-E
LEA COUNTY, NM
NMOCD CASE #: 1R427-281

Figure 2

N W E S

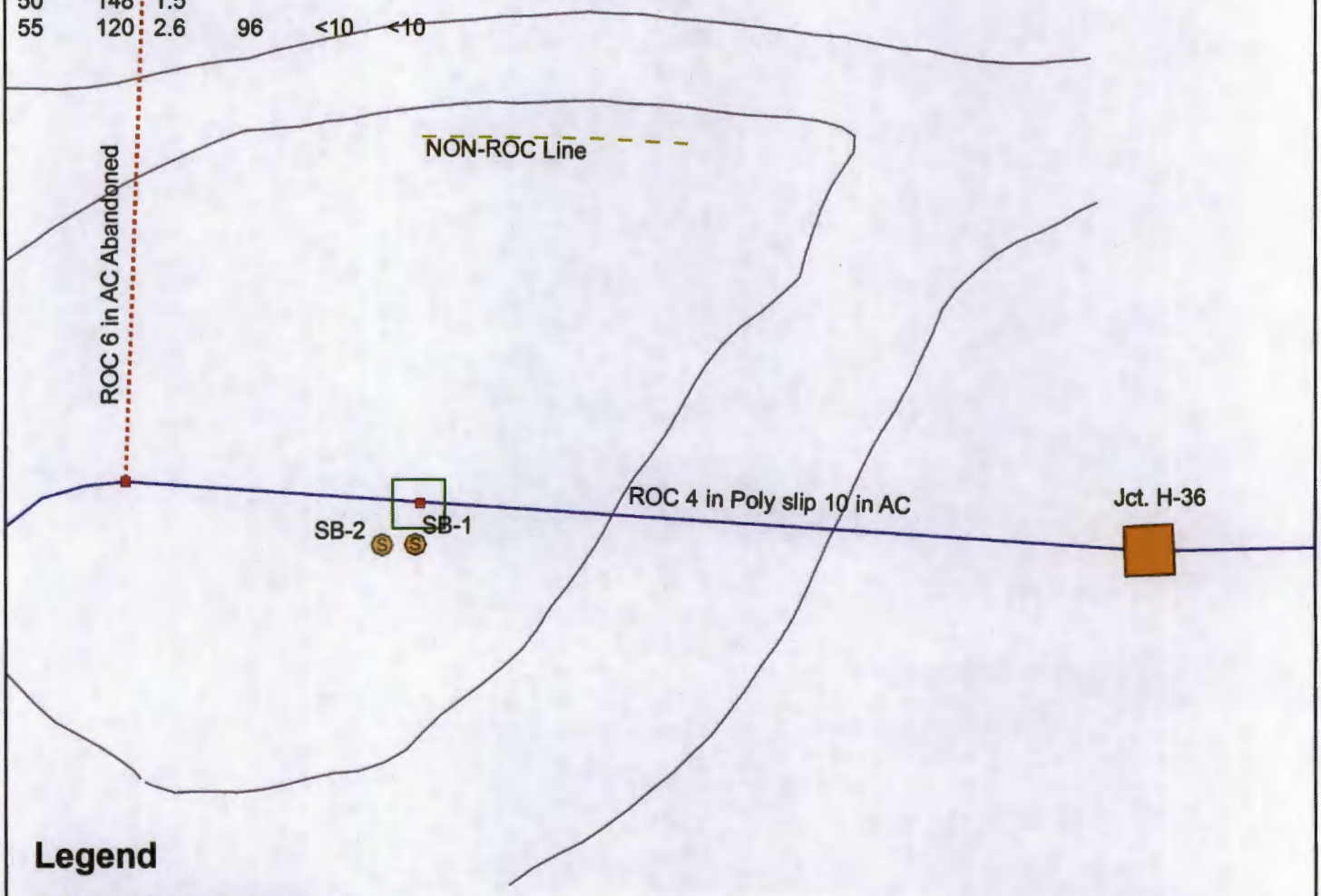
0 0.425 0.85 1.7 Miles

Drawing date: 2-27-13
Drafted by: LS

Soil Bore Installation

SB-1					
Depth	Cl-	PID	Lab Cl-	GRO	DRO
15	142	3			
20	181	2.1			
25	202	2.5			
30	209	2.9			
35	238	1.3			
40	283	3.7	224	<10	<10
45	176	3.1			
50	148	1.5			
55	120	2.6	96	<10	<10

SB-2					
Depth	Cl-	PID	Lab Cl-	GRO	DRO
15	118	2.2			
20	179	1.3			
25	236	3.1	176	<10	<10
30	226	3.7			
35	246	1.7			
40	280	1.8	240	<10	<10
45	141	1.5	128	<10	<10



Legend

- EME SOIL BORES
- EME MARKING PLATES
- LEASE ROAD
- 10' x 10' CLAY LINER @ 5' BGS
- ACTIVE, CONCRETE JCT. BOX

DGW = 269 ft

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC — RECS

EME jct. J-36 Vent

Legals: UL/J sec. 36
T-20-S R-36-E
LEA COUNTY, NM
NMOCD CASE #: 1R427-281

Figure 3

N W E S

0 30 60 Feet

Drawing date: 6/24/2013
Drafted by: C.Ursanic

Appendix A

Soil Bore Installation 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		**Project Name:** EME Jct. J-36 Vent **Well ID:** SB-1
Start Date:	6/19/2013		
End Date:	6/19/2013		**Project Consultant:** RECS

Comments: SB-1 is located 8 ft south of the former junction box site. All samples were from cuttings.

DRAFTED BY: L. Weinheimer

TD = 55 ft GW = 269 ft

Location: UL/J, Sec. 36, T20S, R36E

Lat: 32°31'46.374"N **County**: Lea

Long: 103°18'13.952"W **State**: NM

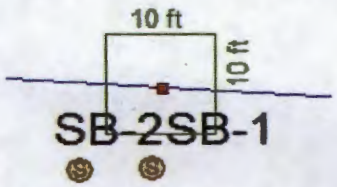
Depth (feet)	Chloride field tests	LAB	PID	Description
SS				
5 ft				Brown Sand
10 ft				
15 ft	142		3.0	
				Brown Caliche
20 ft	181		2.1	
25 ft	202		2.5	
30 ft	209		2.9	
35 ft	238		1.3	

Lithology

Well Construction

bentonite seal

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Brown Caliche		
40 ft	283	Cl- 224	3.7			
		GRO <10		Brown Sand		
		DRO <10				
45 ft	176		3.1			
50 ft	148		1.5			
55 ft	120	Cl- 96	2.6			
		GRO <10				
		DRO <10				

Logger:	Kyle Norman & Edward Cesareo		
Driller:	Harrison and Cooper, Inc.		
Drilling Method:	Air Rotary		**Project Name:** EME Jct. J-36 Vent **Well ID:** SB-2
Start Date:	6/19/2013		
End Date:	6/19/2013		**Project Consultant:** RECS

Comments: SB-2 in located 11 ft southwest of the former junction box site. All samples were from cuttings.

DRAFTED BY: L. Weinheimer

TD = 45 ft GW = 269 ft

Location: UL/J, Sec. 36, T20S, R36E

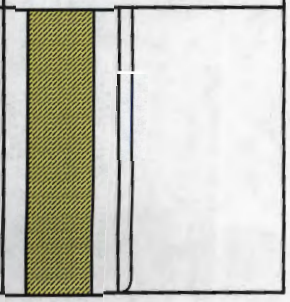
Lat: 32°31'46.375"N **County**: Lea

Long: 103°18'14.015"W **State**: NM

Depth (feet)	Chloride field tests	LAB	PID	Description
SS				Brown Sand
5 ft				
10 ft				
15 ft	118		2.2	
				Brown Caliche
20 ft	179		1.3	
25 ft	236	Cl- 176	3.1	
		GRO <10		
		DRO <10		
30 ft	226		3.7	
35 ft	246		1.7	
40 ft	280	Cl- 240	1.8	

Lithology

Well Construction: bentonite seal

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
		GRO <10		Brown Sand		
		DRO <10				
45 ft	141	Cl- 128	1.5			
		GRO <10				
		DRO <10				

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. J-36 VENT

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. J-36 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB #1 40' (H301420-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	06/21/2013	ND	416	104	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	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	*97.6 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*95.7 %*	*63.6-154*

Sample ID: SB #1 55' (H301420-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	06/21/2013	ND	416	104	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	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	*96.9 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*98.9 %*	*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

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. J-36 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB #2 25' (H301420-03)

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	06/21/2013	ND	416	104	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	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	*91.4 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*95.2 %*	*63.6-154*

Sample ID: SB #2 40' (H301420-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	06/21/2013	ND	416	104	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	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	*93.4 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*98.7 %*	*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 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. J-36 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB #2 45' (H301420-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	06/21/2013	ND	416	104	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	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	*99.5 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*96.5 %*	*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
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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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:	EME	**State:** **Zip:**	
Project Location:	Jct. J-36 VENT	**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				
H301420	EME Jct. J-36 VENT																								
1	SB#1	40'	G	1			✓							6-19-13	11:15	✓	✓								
2	SB#1	55'	G	1			✓								11:20	✓	✓								
3	SB#2	25'	G	1			✓								11:25	✓	✓								
4	SB#2	40'	G	1			✓								11:30	✓	✓								
5	SB#2	45'	G	1			✓								11:35	✓	✓								

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:	**Date:** 6-19-13	**Received By:** Jodi Henson	**Phone Result:** ☐ Yes ☑ No **Add'l Phone #:**
	Time: 2:35		**Fax Result:** ☐ Yes ☑ No **Add'l Fax #:**
Relinquished By:	**Date:**	**Received By:**	**REMARKS:** email results knorman@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; Lpena@riceswd.com; ecesareo@rice-ecs.com
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	**Sample Condition** Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	**CHECKED BY:** (Initials)	

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

#54

Appendix B

Site Photo Documentation

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

EME Jct. J-36 vent (1R427-281)

UL/J, Sec. 36, T20S, R36E

Site photo, from center facing north 6/12/13

Site photo, facing south toward site 6/12/13