1R - 427-95

REPORTS

DATE:

9-20-11

Rice Environmental Consulting & Safety
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL
RETURN RECIEPT NO. 7008 1140 0001 3070 5900

September 20th, 2011

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: **CAP REPORT AND TERMINATION REQUEST**
Rice Operating Company – EME SWD System
EME I-13 EOL (1R427-95): UL/I sec. 13 T19S R36E
(formerly EME P-13 EOL)

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/usage basis.

The site was previously referred to as the EME P-13 EOL. To reflect the geographical location of the site, the name has been changed to the EME I-13 EOL. All correspondences will reference EME I-13 EOL.

Background and Previous Work
The site is located approximately 3 miles north-west of Monument, New Mexico at UL/I sec. 13 T19S R36E as shown on the Site Location Map (Figure 1). Groundwater at this site is located at an approximate depth of 51 +/- feet bgs.

In 2002, ROC initiated work on the former EME I-13 EOL junction box. The site was delineated using a backhoe to form a 30 ft x 30 ft x 13 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 1,360 mg/kg, a gasoline range organics (GRO) reading of 1,380 and a diesel range organics (DRO) reading of 2,130 mg/kg. The benzene reading for the four-wall composite was non-detect. The toluene reading was 0.248 mg/kg, the ethyl benzene reading was 0.153, and the total xylene reading was 1.161. The bottom composite

showed a chloride laboratory reading of 1,740 mg/kg, a GRO reading of 632 mg/kg and a DRO reading of 64.6 mg/kg. The benzene reading of the bottom composite showed a reading of non-detect. The toluene reading was 0.0355, the ethyl benzene reading was 0.0978 mg/kg and the total xylene reading was 0.803. At the bottom of the excavation, a one foot clay barrier was installed to impede vertical migration of chlorides. The soil taken from the excavation was blended and returned to the excavation. Laboratory analysis of the blended backfill showed a chloride reading of non-detect, a GRO reading of non-detect and a DRO reading of 354 mg/kg. BTEX readings of the backfill were non-detect for each constituent. The area was contoured to the surrounding landscape and 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 31st, 2003 and a junction box disclosure report was submitted to NMOCD with all the 2002 junction box closures and disclosures.

As part of the Investigation and Characterization Plan (ICP) approved by NMOCD on May 19th, 2011, five soil bores (SB-1 through SB-5) were advanced through the former junction box site on June 7th, 2011. RECS personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID). Representative samples from the bores were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers. Laboratory readings showed chloride numbers ranging from a high of 1,300 mg/kg at 10 ft bgs in soil bore #5 to a low of 64 mg/kg at 30 ft bgs in soil bore #1. Laboratory readings for GRO showed non-detect in all soil bores. DRO readings showed non-detect in soil bores #1 and #2. In soil bores #3 through #5, DRO readings ranged from a high of 64.9 mg/kg at 20 ft bgs in soil bore #5 to a low of non-detect in both samples of soil bore #1 and soil bore #2, 20 ft bgs in soil bore #4 at 10 ft bgs in soil bore #5.

Corrective Action Plan Report

As part of the Investigation and Characterization Report and Corrective Action Plan approved by NMOCD on August 17th, 2011, ROC began the infiltration liner excavation on August 24th, 2011 (Figure 2). The site was dug to 57 ft x 55 ft x 5 ft deep and 300 yards of the excavated soil was disposed of at an NMOCD approved facility. The remainder of the excavated soil was blended on site to use as backfill. A sample of the blended soil was field tested with a photo-ionization detector (PID) for hydrocarbons and gave a reading of 0.9 ppm. The sample was then taken to a commercial laboratory for chloride analysis. The chloride laboratory reading for the blended backfill returned a result of 448 mg/kg (Appendix A).

Imported soil was used to pad the liner. A six inch pad was placed below and above the liner to protect it from punctures. The imported soil was field tested with a PID meter and returned a result of 0.0 ppm. The sample was then taken to a commercial laboratory for analysis of chlorides. The chloride laboratory reading of the imported soil returned a result of non-detect (Appendix B). A 20-mil reinforced poly liner was installed throughout the excavation on September 2nd, 2011. The excavation was then backfilled with the blended soil to a depth of 6 inches. Imported soil was used to complete the

backfill of the excavation and to contour the site to the surrounding area. A total of 416 yards was imported to use to pad the liner and to complete the backfill of the excavation.

On September 16th, 2011, the site was disked and soil amendments were added. The site was seeded with a blend of native vegetation and is expected to return to normal vegetative capacity (Appendix C). Photo for the infiltration liner excavation are located in Appendix D.

Because ROC has completed the CAP requirements and the site has been seeded, RECS requests 'remediation termination' status of the regulatory file.

ROC appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

Sincerely,

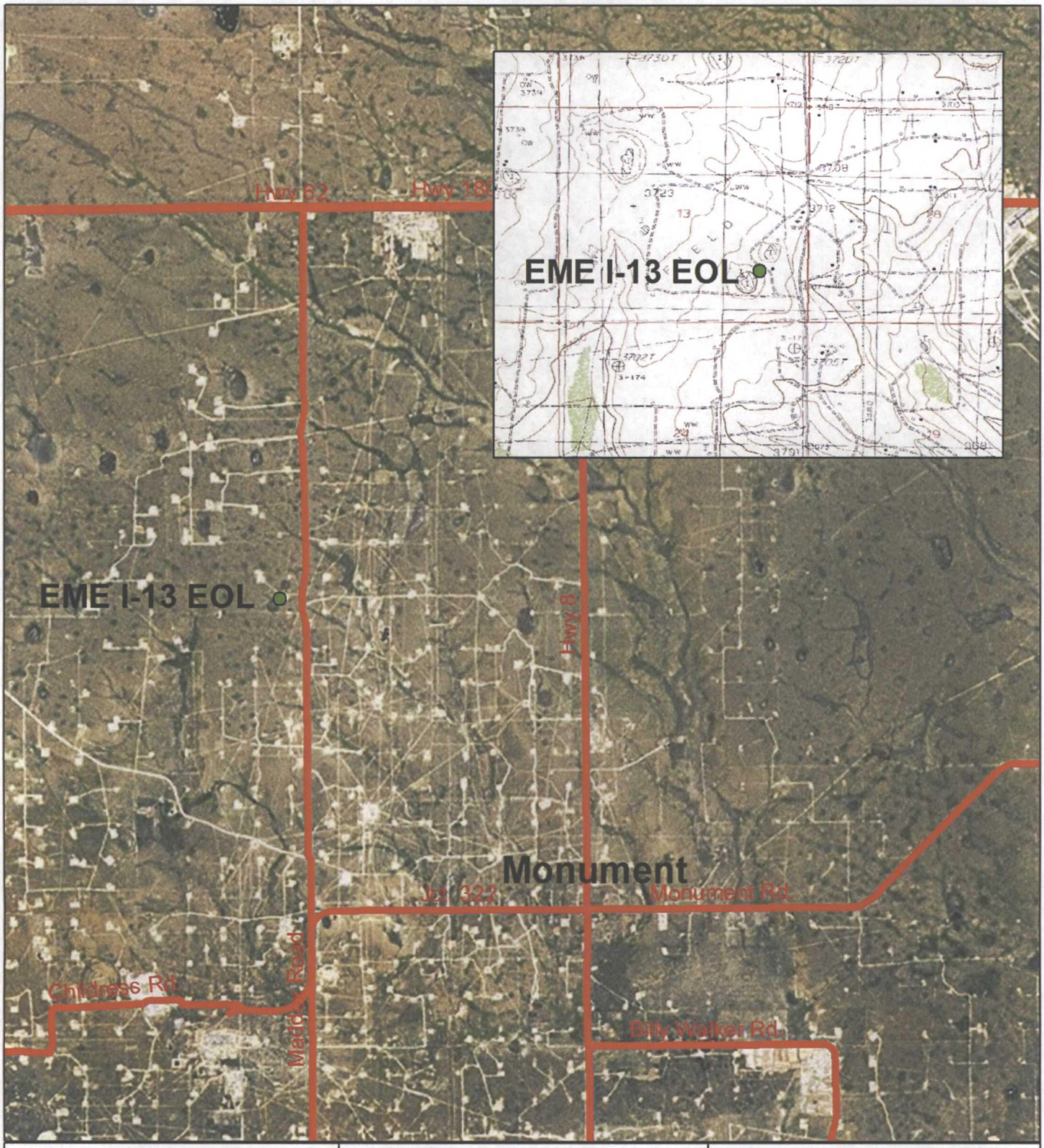
Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

- Figure 1 – Site location map
- Figure 2 – Liner excavation map
- Appendix A – Blended backfill laboratory confirmation
- Appendix B – Imported soil laboratory confirmation
- Appendix C – RECS revegetation form
- Appendix D – Excavation photos

Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

RECS

EME I-13 EOL

LEGALS: UL/I sec. 13
T19S R36E

NMOCD Case #: 1R427-95

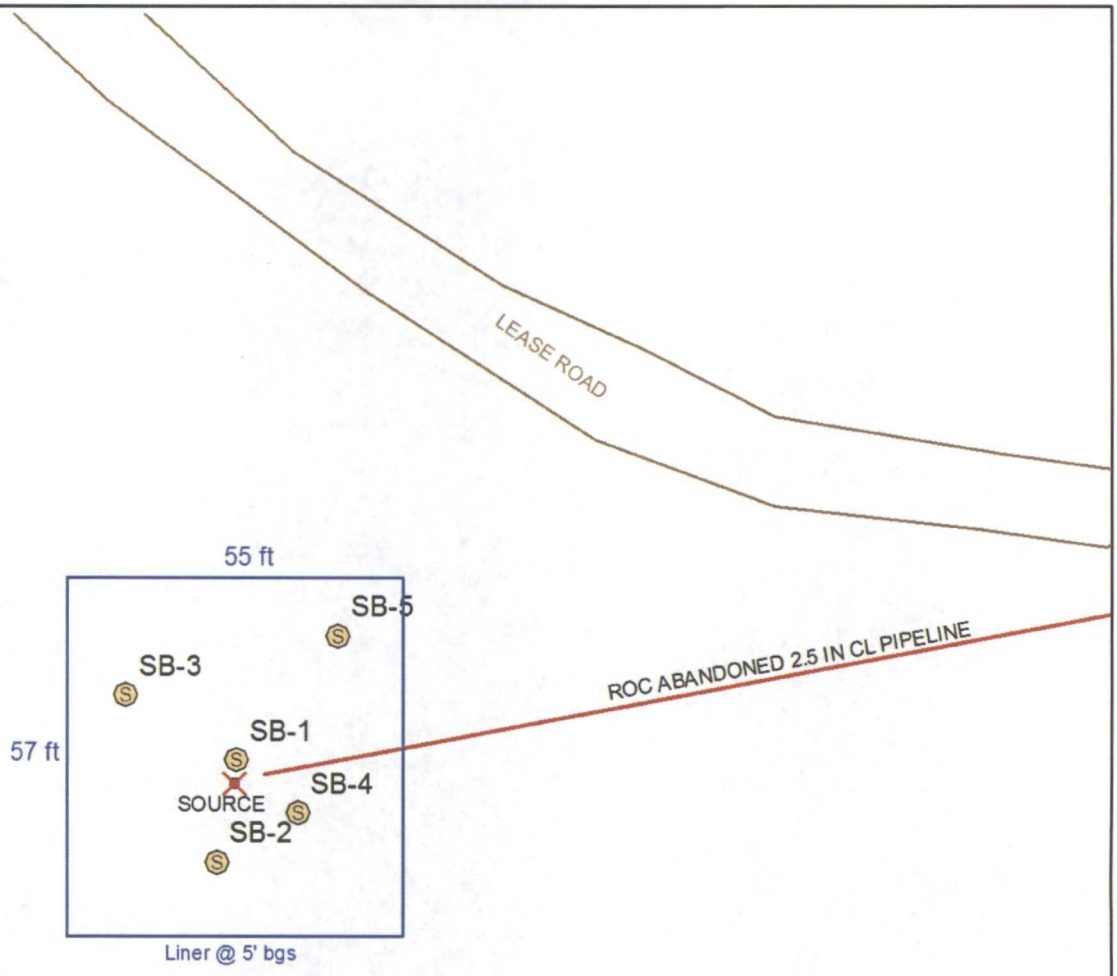
Figure 1

N
W E
S

0 2,300 4,600 9,200
Feet

Drawing date: 4-15-11
Drafted by: L. Weinheimer

Liner Excavation



SB-1

Depth	Cl-	PID	LAB Cl-	GRO	DRO
15	454	37.7	448	<10	<10
20	178	9.6			
25	178	6.8			
30	147	5.5	64	<10	<10

SB-2

Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	87	0			
5	1059	1.2			
10	1097	2.9	1200	<10	<10
15	293	1.2			
20	197	3.4	176	<10	<10

SB-3

Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	110	0.2			
5	735	2.4	688	<10	40.5
10	571	0.4			
15	418	5.6			
20	181	0.8	176	<10	40

SB-4

Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	88	0.2			
5	435	3.4			
10	891	0.6	1020	<10	40.2
15	288	0.7			
20	165	0.5	96	<10	<10

SB-5

Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	84	0			
5	492	1.3			
10	1263	1.1	1300	<10	<10
15	419	0.6			
20	196	0.1	144	<10	64.9

DGW = 51 ft

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC (RECS)

EME I-13 EOL

LEGALS: UL/I sec. 13
T19S R36E

NMOCD Case #: 1R427-95

Figure 2

N W E S

0 12.5 25 50 Feet

Drawing date: 6-28-11
Drafted by: L. Weinheimer

Appendix A

Blended backfill laboratory confirmation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CARDINAL Laboratories

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

September 07, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME I-13 EOL

Enclosed are the results of analyses for samples received by the laboratory on 09/06/11 16:05.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (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
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	09/06/2011	Sampling Date:	09/06/2011
Reported:	09/07/2011	Sampling Type:	Soil
Project Name:	EME I-13 EOL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EME I-13 EOL		

Sample ID: BLENDED BACKFILL (H101895-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**448**	16.0	09/07/2011	ND	416	104	400	3.77	

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:	Rice	**BILL TO**	
Project Manager:	Mark Condra	P.O. #:	
Address:	1322 W. Taylor	Company:	
City:	Hobbs	State: NM Zip: 88240	Attn:
Phone #:		Fax #:	Address:
Project #:		Project Owner:	City:
Project Name:			State: Zip:
Project Location:	EME I-13 20/34		Phone #:
Sampler Name:	Jason Fraine		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
H101895-1	Blended Backfill	C	1			X						X	9-6-11	10:45	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:	Date: 9-6-11	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
	Time: 4:05		Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 20°

Sample Condition		CHECKED BY: (Initials)
Cool	Intact	
☐ Yes ☐ No	☐ Yes ☐ No	

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

#26

PUSH

Appendix B

Imported soil laboratory confirmation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CARDINAL Laboratories

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

September 02, 2011

Bruce Baker

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME I-13 EOL

Enclosed are the results of analyses for samples received by the laboratory on 09/01/11 8:28.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (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
Bruce Baker
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	09/01/2011	Sampling Date:	08/31/2011
Reported:	09/02/2011	Sampling Type:	Soil
Project Name:	EME I-13 EOL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EME I-13 EOL		

Sample ID: IMPORTED SOIL (H101858-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/02/2011	ND	416	104	400	7.41	

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 Company
Project Manager: Bruce Baker
Address: 122 W. Taylor
City: Hobbs State: NM Zip: 88240
Phone #: 575-393-9174 Fax #: 575-397-1471
Project #: Project Owner:
Project Name: EME I-13 EOL
Project Location:
Sampler Name:

BILL TO
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Cl⁻
H101858-1	Imported Soil	G	1			✓							8/31/11	10:10	✓

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: [signature] Date: 9/1/11 Time: [illegible] Received By: [signature]
Relinquished By: [signature] Date: 9/1/11 Time: 9:28 Received By: [signature]
Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 23.5
Sample Condition: Cool ☐ Yes ☑ No; Intact ☑ Yes ☐ No
CHECKED BY: (Initials) [initials]

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: E-Mail Results To:
K Jones @ ricesswd.com
B baker " " "
K egang " " "
D Harris " " "
Z. Conder ~~Rice Swd com~~ Rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476
#26

Appendix C

RECS revegetation form

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

PO Box 5630
Hobbs, NM 88241
Phone: (575) 393-4411
Fax: (575) 393-0293

VEGETATION FORM

1. General Information

Site name: EME I-13 EOL						
U/L I	Section 13	Township 19S	Range 36E	County Lea	Latitude N 32° 39.401'	Longitude W 103° 18.138'
Contact Name: Zach Conder						
Email: zconder@rice-ecs.com						
Site size: 150'x120' 18,000 square feet			Map detail of site attached ☐			
Additional information: Site size is the excavated area and the disturbed area surrounding.						

2. Soils **Do not rip caliche subsoils; caliche rocks brought to the surface by ripping shall be removed.*

Salvaged from site ☒	Bioremediated ☐	Imported ☒	Blended ☐	Depth (in): 4 ft.-6 in. salvaged, 6 in.-ground surface imported blow sand
Texture: Sandy	Describe soil & subsoil: Blow sand and subsoil caliche			
Soil prep methods:	Rip ☐ Depth(in):	Disc ☒ Depth (in): 6 in.	Rollerpack ☐	
Date completed: 9-16-11				

3. Bioremediation

Fertilizer ☐	Hay ☐	Other ☒
Type:		Describe: RestorNance
Lbs/acre:		4 bags (200 lbs.) spread over backfilled area

4. Seeding **Attach seed bag tags to this form. Seed bag tags shall contain the site name and S-T-R.*

Custom seed mix ☒	Prescribed mix ☐	Seed mix name: Lea County Mix	Seeding date: 9-16-11
Broadcast ☒ Method: Portable seeder			
Soil conditions during seeding: Dry ☐ Damp ☒ Wet ☐			
Photos attached ☐ Number of photos:	Observations: 5 lbs. Lea County Mix, 5 lbs. Wheat Beardless, 8 lbs. Blue Grama		

5. Certification I hereby certify that the information in this form and attachments is true and complete to the best of my knowledge and belief.

Name: Tony Grieco	Title: Environmental Tech.	Date: 9-16-11
Signature:		

Appendix D

Excavation photos

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

EME I-13 EOL
Unit I, Section 13, T-19-S, R-36-E

Beginning excavation, facing east 8/24/11

Excavating site, facing west 8/25/11

Completed excavation, facing south 8/26/11

Blending the backfill, facing west 8/25/11

Exporting the spoil pile, facing west 8/30/11

Importing blow sand, facing west 8/31/11

Pad installed below liner, facing south 9/2/11

Installing the liner, facing south 9/2/11

Backfilling over padded liner, facing east 9/8/11

Adding soil amendments and disking, facing west 9/16/11

Seeding the site, facing south 9/16/11

Site completed, facing west 9/16/11