

**1R-427-406**

**Approval & ICP/CAP**

**DATE**

**July 8, 2014**

**From:** Lowe, Leonard, EMNRD  
**To:** ["Hack Conder \(hconder@riceswd.com\)"](mailto:hconder@riceswd.com)  
**Cc:** [Oberding, Tomas, EMNRD](#); ["Katie Jones <kjones@riceswd.com> \(kjones@riceswd.com\)"](mailto:kjones@riceswd.com); ["lflores@rice-ecs.com"](mailto:lflores@rice-ecs.com); ["Lara Weinheimer \(lweinheimer@rice-ecs.com\)"](mailto:lweinheimer@rice-ecs.com)  
**Subject:** ICP & CAP (1R427-406) Approval - ROC EME H - 9 EOL  
**Date:** Tuesday, July 08, 2014 12:13:00 PM  
**Importance:** High

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**RE: Investigation and Characterization Plan (ICP) Report and Corrective Action Plan (CAP) for the Rice Operating Company's  
EME H – 9 EOL  
Unit Letter K, Section 30, T19S, R37E, NMPM, Lea County, New Mexico  
Corrective Action Plan (1R427-406) Approval**

Dear Mr. Conder:

The New Mexico Oil Conservation Division (OCD) has received the Investigation and Characterization Plan and Corrective Action Plan for the **EME H – 9 EOL**, dated **June 13, 2014**, and has conducted a review of the Plan. The Plan indicates that Rice Operating Company (ROC) has met the requirements of 19.15.29 NMAC (Rule 29; formerly, Rule 116) for a remediation plan. Therefore, the OCD hereby conditionally approves the Corrective Action Plan as proposed for above-referenced site in accordance with 19.15.29 NMAC:

ROC must submit to the OCD a report of the corrective actions within 270 days.

Please be advised that OCD approval of this plan does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have any questions regarding this matter, please contact me at 505-476-3492.

**Leonard Lowe**

Environmental Engineer

[Environmental Bureau]

**Oil Conservation Division**

**Energy Minerals and Natural Resources Department**

1220 South St. Frances

Santa Fe, New Mexico 87004

Office: 505-476-3492

Fax: 505-476-3462

E-mail: [leonard.lowe@state.nm.us](mailto:leonard.lowe@state.nm.us)

Website: <http://www.emnrd.state.nm.us/oed/>

**From:** [Katie Jones](#)  
**To:** [Lowe, Leonard, EMNRD](#)  
**Cc:** [Hack Conder](#); [VonGonten, Glenn, EMNRD](#); [Laura Flores](#)  
**Subject:** ROC - EME H-9 EOL (1R427-406) ICP Report and CAP  
**Date:** Friday, June 13, 2014 10:02:45 AM  
**Attachments:** [ROC - EME H-9 EOL \(1R427-406\) ICP Report and CAP.pdf](#)  
[ROC Flow Chart for Report Submissions CAP.pdf](#)

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Mr. Lowe,

I've attached a Corrective Action Plan (CAP) for the EME H-9 EOL (1R427-406) site. I've also attached the ROC Flow Chart showing the stage of this project.

This report will also be top priority for us so that we are able to continue working over the next few months. If you have any questions or require any additional information, please contact me or Hack Conder.

Thank you,

Katie Jones  
Environmental Project Manager  
RICE Operating Company (ROC)



PO Box 2948 | Hobbs, NM 88241 | Phone 575.393.2967

**June 13, 2014**

**Mr. Leonard Lowe**

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

**RE: ICP Report & Corrective Action Plan (CAP)  
Rice Operating Company – EME SWD System  
EME H-9 EOL (1R427-406): UL/H sec. 9 T21S R36E**

Mr. Lowe:

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 9 miles south of Monument, New Mexico in UL/H sec. 9 T21S R36E as shown in the Site Location Map (Figure 1). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 198 +/- feet.

In 2012, ROC initiated work on the former EME H-9 EOL junction box. The site was delineated using a backhoe to form a 25 ft x 25 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 and the bottom composite were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite showed a chloride reading of 608 mg/kg and a gasoline range organics (GRO) reading and a diesel range organics (DRO) reading of non-detect. The bottom composite showed a chloride laboratory reading of 832 mg/kg and GRO and DRO readings of non-detect. The excavated soil was blended on site and a composite sample was taken to a commercial laboratory for analysis. The blended soil returned a chloride result of 400 mg/kg and a GRO reading of non-detect. The DRO reading for the blended soil returned a result of 17.7 mg/kg. A total of 396 yards of blended soil was taken to a NMOCD approved facility for disposal. A 20-mil reinforced plastic liner was installed and properly seated into the base of the excavation. The excavation was then backfilled with clean, imported soil to ground surface and contoured to the surrounding location. The site was seeded with a blend of native vegetation.



NMOCD was notified of potential groundwater impact on January 30<sup>th</sup>, 2013 and a junction box disclosure report was submitted to NMOCD with all the 2012 junction box closures and disclosures.

### **Investigation and Characterization Plan (ICP) Report**

As part of the Investigation and Characterization Plan submitted to NMOCD on October 10<sup>th</sup>, 2013, and approved on October 21<sup>st</sup>, 2013, RECS personnel were on site on February 2<sup>nd</sup>, 2014, to conduct soil bore installations (Figure 2). One soil bore was drilled east of the source to a depth of 20 ft bgs. As the soil bore, SB-1, was advanced, samples were taken at regular intervals and field tested for both chlorides and hydrocarbons. Representative samples were taken to a commercial laboratory for field number confirmation. Laboratory chloride readings for SB-1 returned results of 112 mg/kg at 15 ft bgs and 96 mg/kg at 20 ft bgs. Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) readings throughout all depths were non-detect (Appendix A).

### **Corrective Action Plan**

The lateral extent of the site was defined to the west with the 10 ft west vertical, in which chloride concentrations were low and decreased to 173 mg/kg at 12 ft bgs. The southern edge was defined by the 10 ft south vertical, with a chloride concentration of 178 mg/kg at 12 ft bgs. The northern edge was defined by the 15 ft north vertical, with a concentration of 354 mg/kg at 12 ft bgs. SB-1 defined the eastern edge of the site with a low concentration of 96 mg/kg at 20 ft bgs. Based on the low concentrations observed across the site and the existing 25 ft x 25 ft, 20-mil reinforced poly liner, it is evident that the residual chlorides in the vadose zone will not contribute to the degradation of groundwater beneath the site. Vegetation has not returned to this site; therefore, RECS recommends that the site be scraped to an approximate depth of 6 inches. Clean, imported soil will be used as backfill over the site. The backfill material will have a laboratory chloride reading no greater than 500 mg/kg and a field PID reading below 100 ppm. The area will be contoured to the surrounding location and the site will be seeded with a blend of native vegetation. Soil amendments will also be added, as necessary, to promote the growth of vegetation. Vegetation will 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.

Once the CAP activities are completed, ROC will submit a written report detailing the CAP activities and a request for 'remediation' termination 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,

A handwritten signature in cursive script, appearing to read "L. Flores".

Laura Flores  
Rice Environmental Consulting & Safety (RECS)  
Project Manager

Attachments:

Figure 1 – Site Location Map

Figure 2 – Soil Bore Installation Map

Appendix A – Soil Bore Installation Documentation

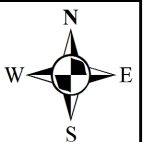


# Site Location Map



***EME H-9  
EOL***  
UL/H SECTION 9  
T-21-S R-36-E  
LEA COUNTY, NM  
NMOCD Case #: 1R427-406

Figure 1

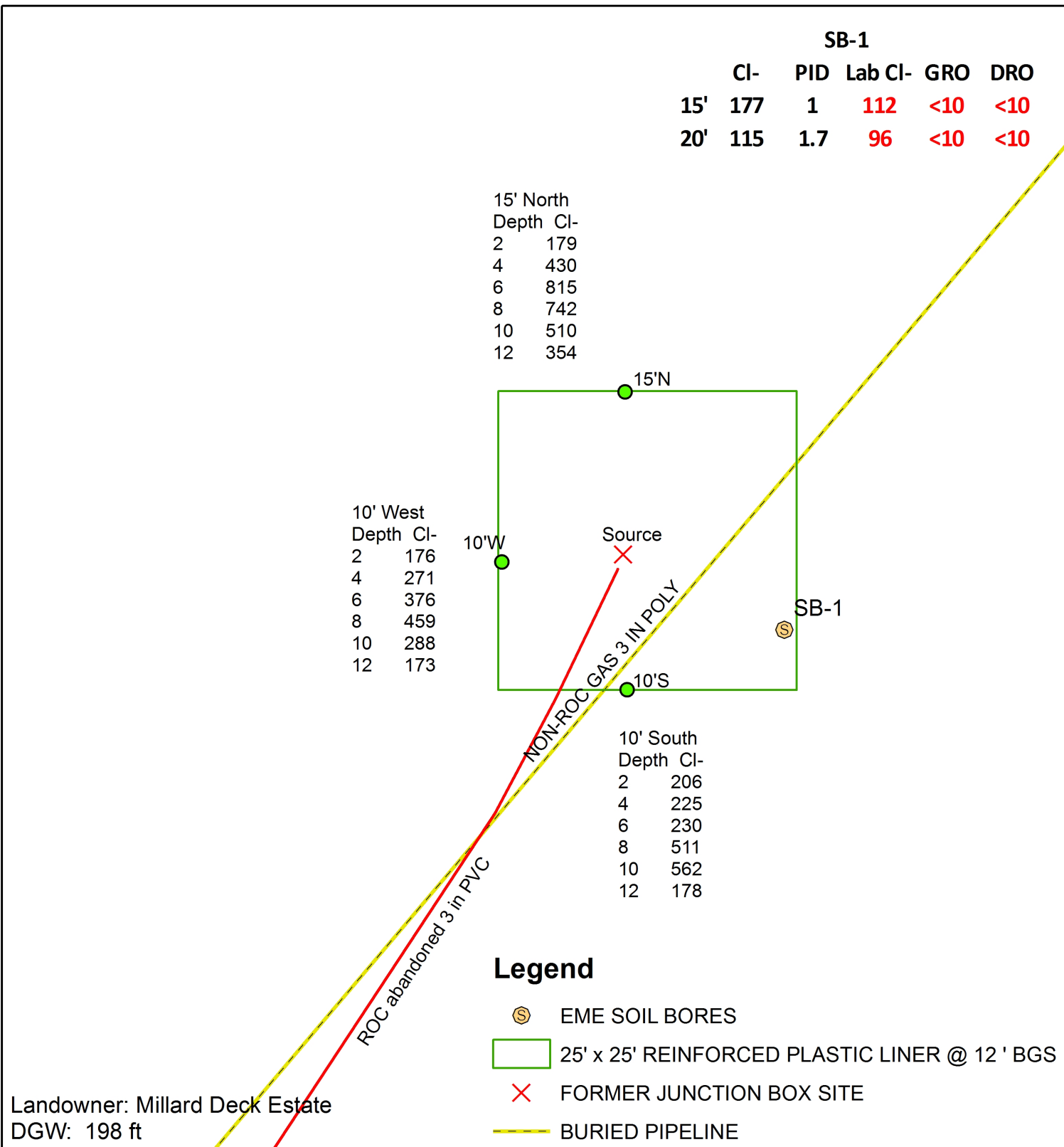


0 0.7 1.4  
Miles

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



# Soil Bore Installation



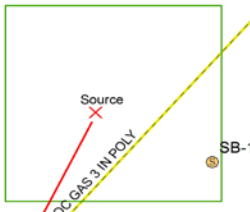

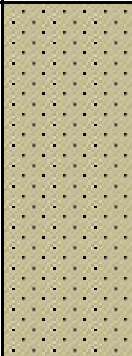

# Appendix A

## Soil Bore Installation Documentation

**RICE Environmental Consulting and Safety (RECS)**

P.O. Box 2948, Hobbs, NM 88241

Phone 575.393.2967

Logger:	Kyle Schnaidt						
Driller:	Harrison&Cooper Inc.						
Drilling Method:	Air Rotary			Project Name:		Well ID:	
Start Date:	2/2/2014			EME H-9 EOL		SB-1	
End Date:	2/2/2014			Project Consultant: RECS			
Comments: All samples were taken from cuttings. SB-1 is located 15 ft southeast of the former junction box site.				Location:			
DRAFTED BY: C. Ursanic				U/L H Sec. 9 T-21-S R-36-E			
TD = 20'				Lat: 32°29'36.394"N			
GW = 198'				County:Lea			
				Long:103°15'55.36"W			
				State:NM			
Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction	
15 ft	177	Lab Cl-112	1	TAN SAND		 Bentonite Seal	
		GRO <10					
		DRO <10					
20 ft	115	Lab Cl-96	1.7				
		GRO <10					
		DRO <10					

February 10, 2014

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME H-9 EOL

Enclosed are the results of analyses for samples received by the laboratory on 02/05/14 9:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited 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

Lab Director/Quality Manager

**Analytical Results For:**

Rice Operating Company  
KYLE NORMAN  
112 W. Taylor  
Hobbs NM, 88240  
Fax To: (575) 397-1471

Received: 02/05/2014  
Reported: 02/10/2014  
Project Name: EME H-9 EOL  
Project Number: NONE GIVEN  
Project Location: T-21S R-36E

Sampling Date: 02/04/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: SB 1 @ 15' (H400356-01)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>112</b>	16.0	02/10/2014	ND	400	100	400	3.92	
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	02/06/2014	ND	205	102	200	8.13	
DRO >C10-C28	<10.0	10.0	02/06/2014	ND	197	98.5	200	11.2	
Surrogate: 1-Chlorooctane	99.6 %	65.2-140							
Surrogate: 1-Chlorooctadecane	102 %	63.6-154							

**Sample ID: SB 1 @ 20' (H400356-02)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	02/10/2014	ND	400	100	400	3.92	
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	02/06/2014	ND	205	102	200	8.13	
DRO >C10-C28	<10.0	10.0	02/06/2014	ND	197	98.5	200	11.2	
Surrogate: 1-Chlorooctane	105 %	65.2-140							
Surrogate: 1-Chlorooctadecane	110 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**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

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Relinquished By: - Kyle Schwartz		Date: 2-4-14 Time: 7:00 AM	Received By: <i>[Signature]</i>		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>[Signature]</i>		Date: 2-5-14 Time: 9:35	Received By: <i>[Signature]</i>		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		CHECKED BY: <i>[Signature]</i>	REMARKS: email results Knorman@rice-ecs.com Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com	

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

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