

1R - 427-409

# REPORTS

DATE:

3-15-13

1R427-409

RECEIVED

APR 2 2013

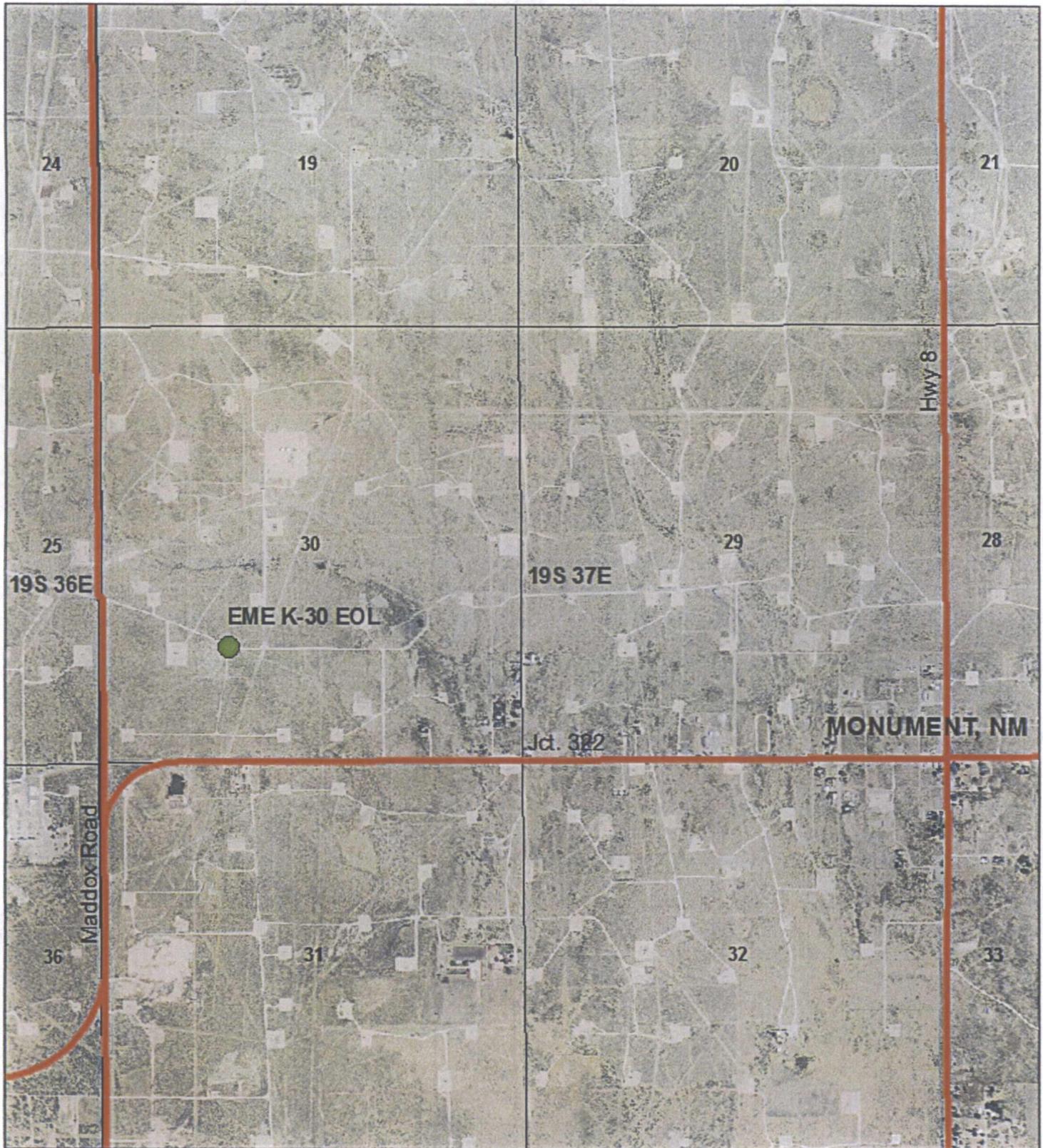
Oil Conservation Division  
1220 S. St. Francis Drive  
Denver, CO 80202

EME K-30 EOL

2012

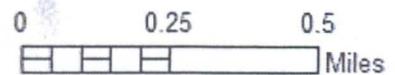
DISCLOSURE





**EME K-30  
EOL**

UL/K SECTION 30  
T-19-S R-37-E  
LEA COUNTY, NM



Drawing date: 11/7/12  
Drafted by: Tony Grieco

# EME K-30 EOL

UL/K Sec. 30 (T19S-R37E)



Excavating site

8/15/2012



Collecting sample

8/23/2012



Exporting soil

8/29/2012



Installed 30'x30' liner @ 12' bgs

9/11/2012



Backfilling site

9/11/2012



Importing soil

9/14/2012



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

August 23, 2012

ZACH CONDER

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME K-30 EOL

Enclosed are the results of analyses for samples received by the laboratory on 08/20/12 16:15.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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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 (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

COPY

**Analytical Results For:**

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

Received:	08/20/2012	Sampling Date:	08/20/2012
Reported:	08/23/2012	Sampling Type:	Soil
Project Name:	EME K-30 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

**Sample ID: 8 PT BLENDED BACKFILL (H201965-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1170</b>	16.0	08/22/2012	ND	400	100	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	08/23/2012	ND	200	100	200	4.43		
DRO >C10-C28	<10.0	10.0	08/23/2012	ND	198	99.0	200	4.04		

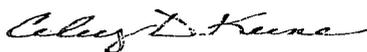
Surrogate: 1-Chlorooctane	79.6 %	65.2-140
Surrogate: 1-Chlorooctadecane	85.2 %	63.6-154

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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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*Coley D. Keene*

---

Coley 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		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																					
Project Manager: Zach Conder		P.O. #:		<table border="1"> <tr><td>Chlorides</td></tr> <tr><td>TPH 8015 M</td></tr> <tr><td>BTEX</td></tr> <tr><td>Texas TPH</td></tr> <tr><td>Complete Cations/Anions</td></tr> <tr><td>TDS</td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>										Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS						
Chlorides																									
TPH 8015 M																									
BTEX																									
Texas TPH																									
Complete Cations/Anions																									
TDS																									
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: <i>EME K-32 EOL</i>		Phone #:																							
Sampler Name: <i>Dustin Z. Younsborough</i>		Fax #:																							
FOR LAB USE ONLY																									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.		SAMPLING															
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME											
<i>14201965</i>	<i>817 Blended Backfill CB</i>		<i>1</i>			<i>1</i>							<i>8/20/12</i>	<i>1:00P</i>											

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 analysis. 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: <i>[Signature]</i>	Date: <i>8-20-12</i>	Received By: <i>Jodi Benson</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
	Time: <i>4:15P</i>		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:		email results Zconder@rice-ecs.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; <i>[Signature]</i> @rice-ecs.com	
Delivered By: (Circle One)	Sample Condition	CHECKED BY:		
Sampler - UPS - Bus - Other:	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	(Initials) <i>[Signature]</i>		

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

#26

August 30, 2012

ZACH CONDER

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME K-30 EOL

Enclosed are the results of analyses for samples received by the laboratory on 08/24/12 14:25.

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Sincerely,



Celey D. Keene

Lab Director/Quality Manager

COPY

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

Received:	08/24/2012	Sampling Date:	08/23/2012
Reported:	08/30/2012	Sampling Type:	Soil
Project Name:	EME K-30 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

**Sample ID: 4 WALL COMP (H202033-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>960</b>	16.0	08/28/2012	ND	416	104	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	08/29/2012	ND	201	100	200	0.929		
<b>DRO &gt;C10-C28</b>	<b>17.4</b>	10.0	08/29/2012	ND	204	102	200	0.300		

Surrogate: 1-Chlorooctane 66.8 % 65.2-140  
 Surrogate: 1-Chlorooctadecane 81.2 % 63.6-154

**Sample ID: 5 PT BTTM COMP (H202033-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>208</b>	16.0	08/28/2012	ND	416	104	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	08/29/2012	ND	201	100	200	0.929		
<b>DRO &gt;C10-C28</b>	<b>&lt;10.0</b>	10.0	08/29/2012	ND	204	102	200	0.300		

Surrogate: 1-Chlorooctane 78.5 % 65.2-140  
 Surrogate: 1-Chlorooctadecane 94.9 % 63.6-154

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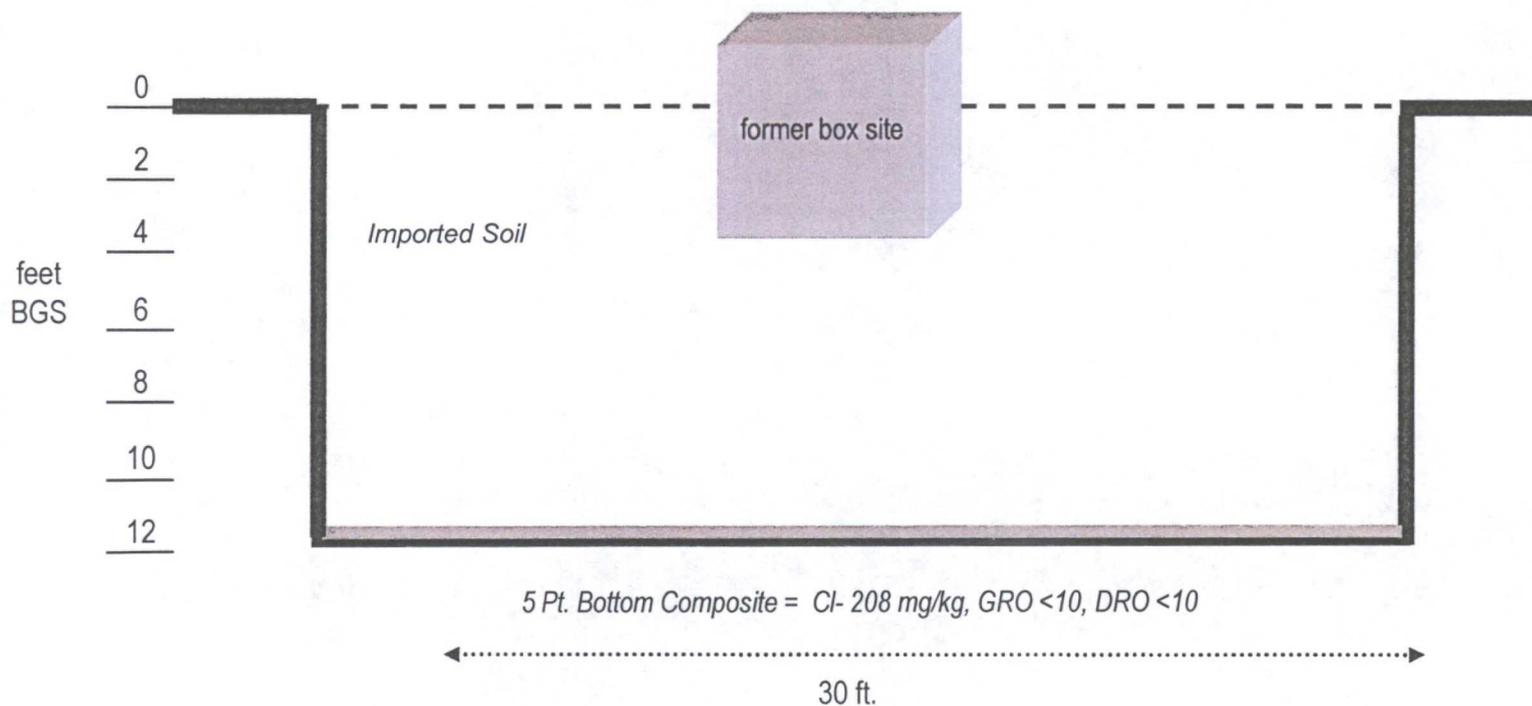
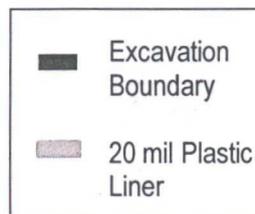


EME K-30 EOL  
Unit 'K', Sec. 30, T19S, R37E

### Excavation Cross-Section

N

S



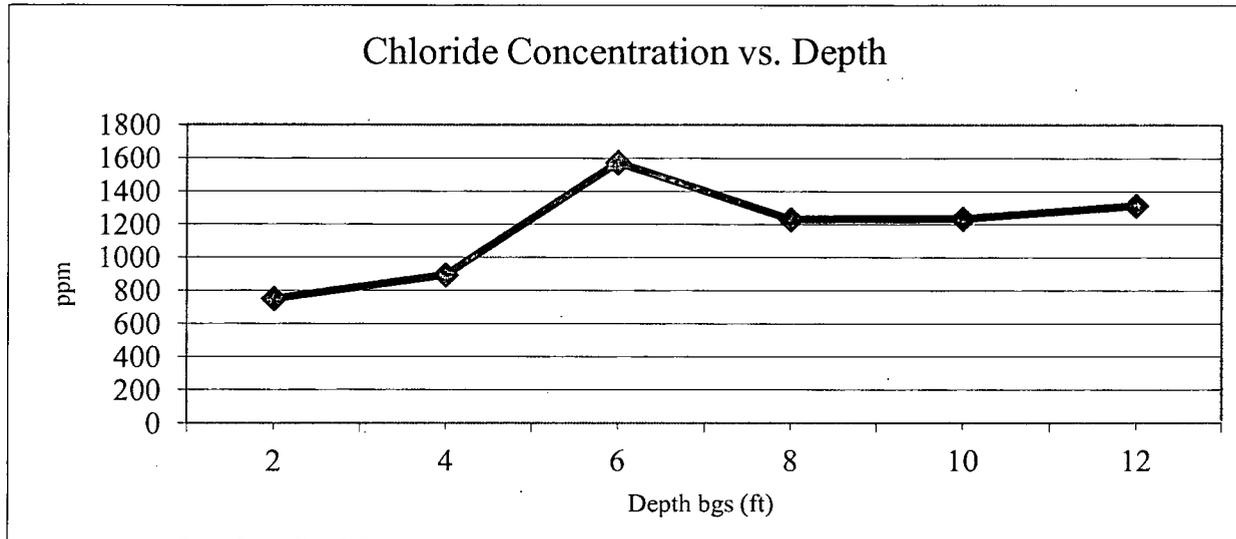
# EME K-30 EOL

Unit 'K', Sec. 30, T19S, R37E

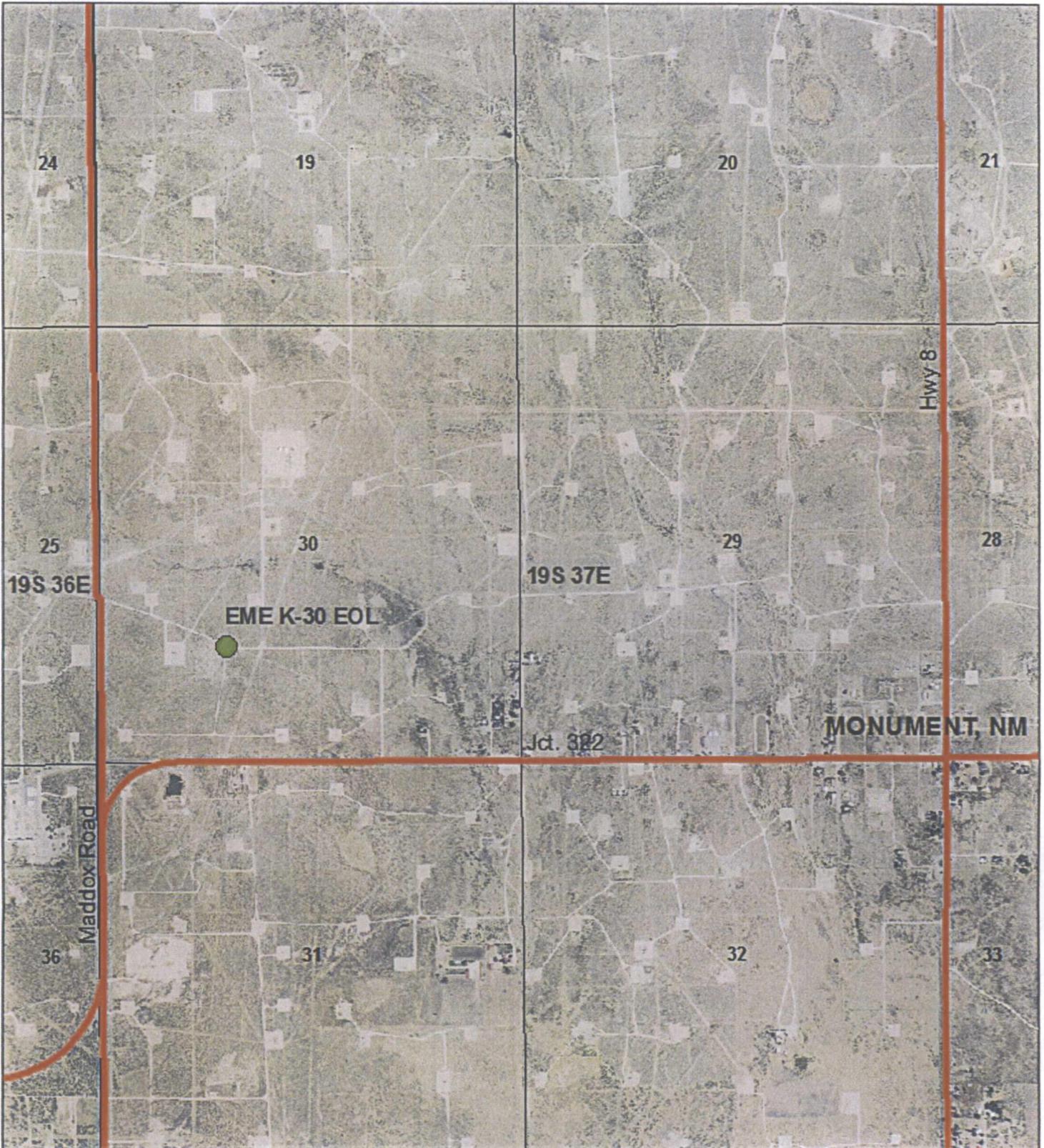
Backhoe samples at 5' N of the junction (source)

Depth bgs (ft)	[Cl <sup>-</sup> ] ppm
2	750
4	894
6	1574
8	1232
10	1236
12	1315

Groundwater = 37 ft

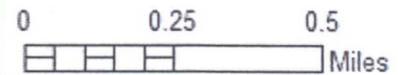






**EME K-30  
EOL**

UL/K SECTION 30  
T-19-S R-37-E  
LEA COUNTY, NM



Drawing date: 11/7/12  
Drafted by: Tony Grieco

# EME K-30 EOL

UL/K Sec. 30 (T19S-R37E)



Excavating site

8/15/2012



Collecting sample

8/23/2012



Exporting soil

8/29/2012



Installed 30'x30' liner @ 12' bgs 9/11/2012



Backfilling site

9/11/2012



Importing soil

9/14/2012

August 23, 2012

ZACH CONDER

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

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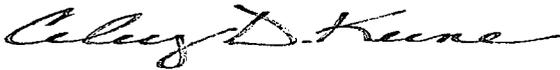
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 ZACH CONDER  
 112 W. Taylor  
 Hobbs NM, 88240  
 Fax To: (575) 397-1471

Received:	08/20/2012	Sampling Date:	08/20/2012
Reported:	08/23/2012	Sampling Type:	Soil
Project Name:	EME K-30 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

**Sample ID: 8 PT BLENDED BACKFILL (H201965-01)**

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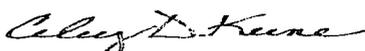
<i>Surrogate: 1-Chlorooctane</i>	79.6 %	65.2-140
<i>Surrogate: 1-Chlorooctadecane</i>	85.2 %	63.6-154

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August 30, 2012

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 Fax To: (575) 397-1471

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Reported:	08/30/2012	Sampling Type:	Soil
Project Name:	EME K-30 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

**Sample ID: 4 WALL COMP (H202033-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
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<b>DRO &gt;C10-C28</b>	<b>17.4</b>	10.0	08/29/2012	ND	204	102	200	0.300		

Surrogate: 1-Chlorooctane	66.8 %	65.2-140
Surrogate: 1-Chlorooctadecane	81.2 %	63.6-154

**Sample ID: 5 PT BTTM COMP (H202033-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>208</b>	16.0	08/28/2012	ND	416	104	400	3.92		
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/29/2012	ND	201	100	200	0.929		
DRO >C10-C28	<10.0	10.0	08/29/2012	ND	204	102	200	0.300		

Surrogate: 1-Chlorooctane	78.5 %	65.2-140
Surrogate: 1-Chlorooctadecane	94.9 %	63.6-154

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Cardinal Laboratories

\* = Accredited Analyte

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Caley 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

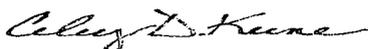
COPY

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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		<b>BILL TO</b>		ANALYSIS REQUEST									
Project Manager: Zach Conder		P.O. #:		Chlorides TPH 8015 M BTEX Texas TPH Complete Cations/Anions TDS									
Address: 112 W. Taylor		Company:											
City: Hobbs State: NM Zip: 88240		Attn:											
Phone #: Fax #:		Address:											
Project #: Project Owner:		City:											
Project Name: EME H-3D EDL 19.37		State: Zip:											
Project Location:		Phone #:											
Sampler Name:		Fax #:											
FOR LAB USE ONLY													
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX			PRESERV.		SAMPLING				
				GROUNDWATER	WASTEWATER	SOIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME
4202033	14 Wall Comp.	C	1									8/23/12	1:45P
	25ft Bottom Comp.	C	1									8/23/12	1:50P

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Relinquished By: <i>[Signature]</i>	Date: 8/23/12 Time: 5:00P	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: 8-24-12 Time: 14:25	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 type="checkbox"/> Intact <input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials) <i>[Initials]</i>	REMARKS: email results Zconder@rice-ecs.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; dwyarbrough@rice-ecs.com	

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

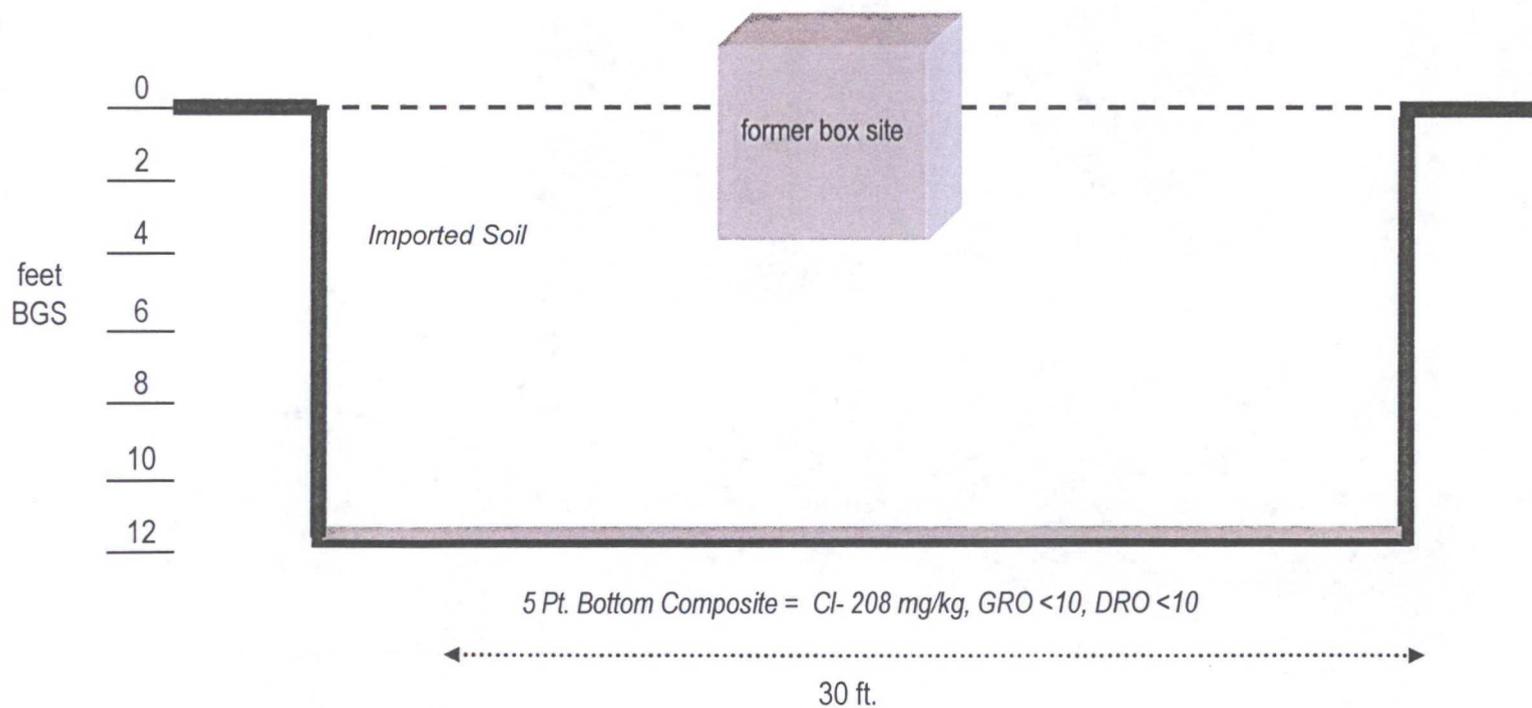
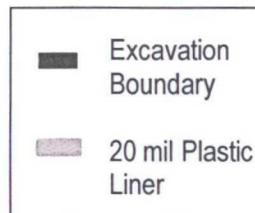
#26

EME K-30 EOL  
Unit 'K', Sec. 30, T19S, R37E

### Excavation Cross-Section

N

S



# CHLORIDE CONCENTRATION CURVE

RICE Operating Company

## EME K-30 EOL

Unit 'K', Sec. 30, T19S, R37E

Backhoe samples at 5' N of the junction (source)

Depth bgs (ft)	[Cl <sup>-</sup> ] ppm
2	750
4	894
6	1574
8	1232
10	1236
12	1315

Groundwater = 37 ft

