1R-427-364 WORKPLANS Date: -18-



# RECEIVED OCD

2017 OCT 22 P 12: 32

Sent Certified Mail Return Receipt No. 7002 2410 0001 5813 0400

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

Subject:

ICP Report and Corrective Action Plan (CAP) EME I-7 EOL Unit I, SEC. 7, T19S, R37E, Monument, Lea County, New Mexico NMOCD CASE # 1R427-364

Mr. Hansen:

RICE Operating Company (ROC) has retained ARCADIS U.S., Inc. (ARCADIS) to address potential environmental concerns at the above-referenced site. 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. Environmental projects of this nature require System Party AFE approval prior to work commencing at the site. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is greatly appreciated.

On behalf of ROC, ARCADIS respectfully submits this ICP Report and Corrective Action Plan (CAP) for the above-referenced site.

## SITE HISTORY AND BACKGROUND

The site is located approximately five miles northwest of Monument, New Mexico. Groundwater at the site occurs at a depth of approximately 35 feet below ground surface (bgs). The junction box was eliminated and initial delineation was conducted from February 15<sup>th</sup> through May 12<sup>th</sup>, 2011. Initial delineation was completed with the drilling of five soil borings on July 9, 2012. ARCADIS U.S., Inc. 1004 North Big Spring Street Suite 300 Midland Texas 79701 Tel 432.687.5400 Fax 432.687.5401 www.arcadis-us.com

Environmental

Date: October 18, 2012

Contact: Sharon Hall

Phone: 432.687.5400

Email: sharon.hall@arcadis-us.cor

Our ref: MT001107.0001

ARCADIS U.S., Inc. TX Engineering License # F-533

Imagine the result

# ARCADIS

A backhoe was used to excavate soils from an excavation measuring 10 feet by 10 feet by 12 feet deep around the former junction box. Soil samples were collected at regular intervals and analyzed in the field for chlorides using field-adapted Standard Method 4500-Cl B and screened in the field using a photoionization detector (PID).

A five-point wall composite sample was collected from each of the four walls and combined to make a representative four-wall composite sample, and a five-point composite sample was collected from the bottom of the excavation and submitted to Cardinal Laboratories for gasoline range organics (GRO), diesel range organics (DRO) and chloride analysis. DRO was detected at a concentration of 144 milligrams per kilogram (mg/kg) in the four-wall composite sample and 46.8 mg/kg in the five-point bottom composite sample. Chlorides were detected at a concentration of 496 mg/kg in the four-wall composite sample and 48 mg/kg in the five-point composite bottom sample. GRO was not detected in either of the samples.

Based on the results of the soil sampling analytical results, elevated hydrocarbon concentrations are present at the subject site.

Approximately 96 cubic yards of excavated soil was disposed at a NMOCD approved facility. The excavation was backfilled with clean imported soil to ground surface and the area was contoured to the surrounding landscape.

ROC disclosed potential groundwater impact at the site to New Mexico Oil Conservation Division (NMOCD) via e-mail on April 9<sup>th</sup>, 2012. A disclosure report was submitted to NMOCD in the 2011 junction box closures and disclosures.

ROC submitted an ICP to NMOCD on June 7, 2012 and was approved by NMOCD on July 25, 2012.

## ICP INVESTIGATION RESULTS

Five soil borings (SB-1 through SB-5) were drilled at the site on July 9, 2012. Soil boring (SB-1) was advanced at the former junction box location and four soil borings were advanced 16 feet west (SB-2), 11 feet south (SB-3), 12 feet north (SB-4) and 12 feet east (SB-5) of the former junction box location.

The soil borings were drilled to depth of 20 feet bgs. Soil samples were collected every five feet and analyzed in the field for chlorides using field-adapted Method 4500-Cl-B and screened in the field using a PID. Two samples from each boring

Page: 2/3

# ARCADIS

Mr. Ed Hansen October 18, 2012

were submitted to Cardinal Laboratories and analyzed for chlorides, GRO and DRO. Chloride concentrations were low throughout the site, with the 20 ft sample in each bore being below 176 mg/kg. GRO was non-detect throughout all bores. DRO was detected in SB-1 at 5 feet bgs (17.2 mg/kg) and at 20 feet bgs (10.7 mg/kg) and in SB-3 at 20 feet bgs (24.8 mg/kg). DRO was non-detect in SB-2, SB-4 and SB-5 (see attached figures and soil bore logs).

## PROPOSED CORRECTIVE ACTION WORKPLAN

The potential source of chloride impacts to groundwater has been removed. Due to the low chlorides and DRO and non-detect GRO, ARCADIS recommends large rocks be removed and the site be seeded with native vegetation. Soil amendments will be added as necessary.

Thank you for your consideration concerning this ICP Report and CAP. If you have any questions, do not hesitate to contact Hack Conder or me.

Sincerely,

ARCADIS U.S., Inc.

Sham E. Hall

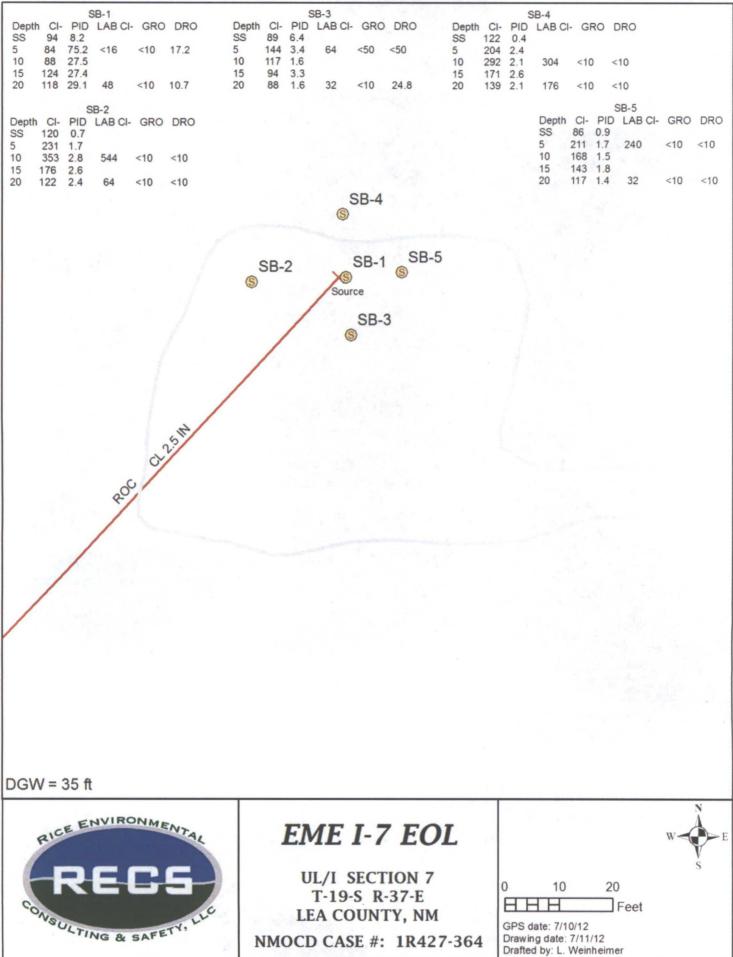
Sharon E. Hall Associate Vice President

Copies: Hack Conder, ROC

Attachments:

Soil Boring Installation Figure Soil Boring Logs Soil Boring Photo Documentation Soil Boring Laboratory Analysis Results

# Soil Bore Installation



Logger: Driller: Drilling Method: Start Date: End Date:		Kyle Norman Harrison & Cooper, Inc. Air Rotary 7/9/2012 7/9/2012		SB-2 SB-2 SB-1 SB-5	RECS SOMBULTING & SAFETY. LLC				
				SB-2 Source SB-3	Project Name: EME I-7 E0	Well ID: OL SB-1			
Comme	ents: Loo	cated at the All samp	former ju bles were	nction box site. from cuttings. Amy C. Ruth GW = 35 ft.	Project Consulta Location: UL/I Lat: 32°40'22.96 Long: 103°17'6.	sec. 7 T-19-S R-37-E 61"N <b>County</b> : Lea			
Depth (feet)	Chlorid field tes		PID	Description	Lithology	Well Construction			
SS	94		8.2						
5 ft	84	CI- <16 GRO <10 DRO	75.2						
10 ft	88	17.2	27.5	Brown Sand		bentonite seal			
15 ft	124		27.4						
20 ft	118	CI- 48 GRO <10	29.1						
		DRO 10.7			1.44				

Logger: Kyle Norman Driller: Harrison & Cooper, Inc.		SB-4	RECS				
Drilling N Start Date End Date	e:	Air Rotary 7/9/2012 7/9/2012 7/9/2012 SB-2 Source SB-3 SB-3 SB-3 SB-3 Project Name: EME I-7 EOL Project Consultant					
Comme		All sam	ples wer	ne former junction box site. e from cuttings. Amy C. Ruth GW = 35 ft.		sec. 7 T-19-S R-37-E 54"N <b>County</b> : Lea	
Depth (feet)	Chlor field to		PID	Description	Lithology	Well Construction	
SS	120	)	0.7	Brown Sand			
5 ft	231	1	1.7		0		
10 ft	353	GRO <10	3	Tan Sand With Some Caliche	•	bentonite seal	
1		DRO <10		Tan Gand With Some Galene			
15 ft	176	3	3		0		
20 ft	122	2 CI- 64 GRO <10	2.4		•		
		DRO <10					

.

Logger:	iger: Kyle Norman		nan	SB-4 ⑤	RICE	ECS
Driller:			SB-2 SB-1 SB-5	CONSUL	ING & SAFETY, LLE	
Drilling Method: Air Rotary		ry	SB-2 Source	Project Name:	Well ID:	
Start Date	e:	7/9/201	2	SB-3	EME I-7 EC	OL SB-3
End Date	The second second	7/9/201		6	Project Consulta	ant: ARCADIS
Comme		All samp DRAF	les were	he former junction box site. e from cuttings. Amy C. Ruth	Lat: 32°40'22.86	obuing. Loc
		= 20 ft.		GW = 35 ft.	Long: 103°17'6.	278"W State: NM
Depth (feet)	Chlori field te		PID	Description	Lithology	Well Construction
SS	89		6.4	Brown Sand		
5 ft	144		3.4	Tan Sand With Some Caliche	0	
		GRO <50			Carlos and	
	1. A.	DRO <50			133.333	bentonite
10 ft	117	,	1.6			seal
15 ft	94		3.3	Brown Sand		
20 ft	88	88 CI- 32 1.6 GRO <10				
		DRO 24.8				

Logger: Driller:		Kyle Norm Harrison & Coo		SB-4 SB-1 SB-5	R	ECS			
Start Dat	rilling Method: Air Rotary tart Date: 7/9/2012		2	SB-2 Source SB-3	Project Name: Well ID: EME I-7 EOL SB-4				
End Date	ents: Lo	All samp	orth of the	he former junction box site. e from cuttings. Amy C. Ruth GW = 35 ft.	Project Consulta Location: UL/I s Lat: 32°40'23.07 Long: 103°17'6.	sec. 7 T-19-S R-37-E 73"N <b>County</b> : Lea			
Depth (feet)	Chlor field te		PID	Description	Lithology	Well Construction			
SS	122	2	0.4	Brown Sand					
5 ft	204	l	2.4		•				
10 ft	292	GRO <10 DRO	2.1	Tan Sand With Some Caliche	•	bentonite seal			
15 ft	171	<10	2.6		o				
20 ft	139	) CI- 176 GRO <10	2.1		•				
		DRO <10			· · · · ·				

.

Logger: Driller: Drilling N Start Date End Date Comme	Method: e: ents: Locate TD = 20	All samp	oer, Inc. y ast of the	SB-4 SB-2 Source SB-3 Source SB-3 SB-3 SB-3 SB-3 SB-3 SB-3 SB-3 SB-3	Project Name: EME I-7 EC Project Consulta	ant: ARCADIS sec. 7 T-19-S R-37-E s9"N County: Lea
Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
SS	86		0.9	Brown Sand		
5 ft	211	CI- 240 GRO <10 DRO <10	1.7		•	bentonite
10 ft	168		1.5		•	seal
			1 1	Tan Sand With Some Caliche	0	
15 ft	143		1.8		•	
20 ft	117	CI- 32 GRO <10	1.4		•	
		DRO <10			•	

# EME I-7 EOL Unit I, Section 7, T-19-S, R-37-E



Drilling SB-1, facing west

7/9/12



Completed SB-1, facing west

7/9/12



Plugging SB-2 in total with bentonite



Plugging SB-1 in total with bentonite 7/9/12



Drilling SB-2, facing west

7/9/12



Completed SB-2, facing northwest

7/9/12



Drilling SB-3, facing northwest

7/9/12



Completed SB-3, facing northwest

7/9/12



Plugging SB-4 in total with bentonite



Plugging SB-3 in total with bentonite 7/9/12



Drilling SB-4, facing west

7/9/12



Completed SB-4, facing west

7/9/12



Drilling SB-5, facing north

7/9/12



Completed SB-5, facing west

7/9/12



Plugging SB-5 in total with bentonite



July 16, 2012

Hack Conder Rice Operating Company 112 W. Taylor Hobbs, NM 88240

RE: EME I-7 EOL (19/37)

Enclosed are the results of analyses for samples received by the laboratory on 07/09/12 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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited retrift.

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,

Celeg D. Keine

Celey D. Keene Lab Director/Quality Manager

# **CARDINAL** Laboratories

## Analytical Results For:

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

Received:	07/09/2012	Sampling Date:	07/09/2012
Reported:	07/16/2012	Sampling Type:	Soil
Project Name:	EME I-7 EOL (19/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

# Sample ID: SB 1 @ 5' (H201561-01)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP		<u> </u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg/kg		Analyzed By: AM			<u> </u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	17.2	10.0	07/11/2012	ND	184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	82.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	105	% 63.6-15	4						

# Sample ID: SB 1 @ 20' (H201561-02)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP		· · · · · · · · · · · · · · · · · · ·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	8S	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg/kg		Analyzed By: AM			•		·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	10.7	10.0	07/11/2012	ND	184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	81.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	104	% 63.6-15	4						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

REASE NOTE: Lidolity and Damages. Cardinat's Bublity and client's exclusive remedy for any clean arising, whether based in contract or bart, shall be limited to the amount paid by client for analyzes. All claims, including those for negligence and any other cause whotsoever shall be deemed waived untess made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without fination, business thermptions, boss of use, or loss of profils incurred by Cardinal, modelines, affiliates or successors atshing out of or related to the performance of the services hereinder by Cardinal, regardless of whether such claims be used by the service in the line interface to the performance of the services including to be services in the service in th

Celez Di Keene

Celey D. Keene, Lab Director/Quality Manager



# Analytical Results For:

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

Received:	07/09/2012	Sampling Date:	07/09/2012
Reported:	07/16/2012	Sampling Type:	Soil
Project Name:	EME I-7 EOL (19/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: SB 2 @ 10' (H201561-03)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	₿S	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	<10.0	10.0	07/11/2012	ND	. 184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	85.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	108	% 63.6-15	4						

## Sample ID: SB 2 @ 20' (H201561-04)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg/kg		Analyzed By: AM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	<10.0	10.0	07/11/2012	ND	184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	71.3	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	93.4	% 63.6-15	4						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEXE NOTE: Liability and Damages. Cardhad's liability and client's exclusive remedy for any claim arising, whether based in contract or bort, shall be limited to the amount paid by client for analyses. All claims, including those for megligence and any other cause whitescener shall be deemed watered unless made in withing and received by Cardhad britty (30) days after completion of the applicable service. In no event shall Cardhad be liable for incidential or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profils incurred by client, its subsidiates or successors arising out of or related to the performance of the services hereander by Cardhad, regardless of whether such client is based upone statiot (easons or otherwise. Resisting-taic-outly bits samples thereander by Cardhad, hereander by Cardhad, regardless of whether such client is based upone statiot (easons or otherwise.)

Celleg Di Keine-

Celey D. Keene, Lab Director/Quality Manager



# Analytical Results For:

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

Received:	07/09/2012	Sampling Date:	07/09/2012
Reported:	07/16/2012	Sampling Type:	Soil
Project Name:	EME I-7 EOL (19/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: SB 3 @ 5' (H201561-05)

Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
64.0	16.0	07/12/2012	ND	416	104	400	3.77	
mg /	/kg	Analyze	d By: AM	<u> </u>				
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<50.0	50.0	07/11/2012	, ND	171	85.5	200	3.36	
<50.0	50.0	07/11/2012	ND	184	92.2	200	1.06	
<u>7</u> 1.6	% 65.2-14(	0						
103	% 63.6-15:	4				•		
	64.0 mg/ Result <50.0 <50.0	64.0         16.0           mg/kg         Resolt         Reporting Limit           <50.0	64.0     16.0     07/12/2012       mg/kg     Analyze       Result     Reporting Limit     Analyzed       <50.0	64.0         16.0         07/12/2012         ND           mg/kg         Analyzed By: AM           Result         Reporting Limit         Analyzed         Method Blank           <50.0	64.0         16.0         07/12/2012         ND         416           mg/kg         Analyzed By: AM         Method Blank         BS           <50.0	64.0     16.0     07/12/2012     ND     416     104       mg/kg     Analyzed By: AM     Method Blank     BS     % Recovery       <50.0	64.0       16.0       07/12/2012       ND       416       104       400         mg/kg       Analyzed By: AM       Method Blank       BS       % Recovery       True Value QC         <50.0	64.0       16.0       07/12/2012       ND       416       104       400       3.77         mg/kg       Analyzed By: AM       Method Blank       BS       % Recovery       True Value QC       RPD         <50.0

# Sample ID: SB 3 @ 20' (H201561-06)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: AM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	24.8	10.0	07/11/2012	ND ·	184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	79.4	% 65.2-14	0	· ·					
Surrogate: 1-Chlorooctadecane	105	% 63.6-15	4						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEXE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or bort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whotescener shall be deemed walked unless made in writing and received by clearts and received by clearts and received by clearts and the limit (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without initiation, business interruptions, loss of use, or loss of profits incurred by cleart, its absidianties, affiliates or successor antihing out of or related to the performance of the services hereander by Cardinal, regardless of whether such climits based upon any of the shore static recomposer and otherwise. Results relate only to the sample shall be institled above.

Celez Freenan.

Celey D. Keene, Lab Director/Quality Manager

**CARDINAL** Laboratories

## Analytical Results For:

Rice Opera	ting Company					
Hack Conder						
112 W. Tay	/lor					
Hobbs NM,	88240					
Fax To:	(575) 397-1471					

Received:	07/09/2012	Sampling Date:	07/09/2012
Reported:	07/16/2012	Sampling Type:	Soil
Project Name:	EME I-7 EOL (19/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

## Sample ID: SB 4 @ 10' (H201561-07)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP				2	
Analyte .	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: AM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	<10.0	10.0	07/11/2012	ND	184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	84.7	% 65.2-14	0				· · ·		
Surrogate: 1-Chlorooctadecane	106	% 63.6-15	4			<b>.</b> '			

#### Sample ID: SB 4 @ 20' (H201561-08)

Chloride, SM4500Cl-B	· mg,	/kg	Analyze	d By: AP	•				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg ,	/kg	Analyze	d By: AM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	<10.0	10.0	07/11/2012	ND	184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	86.2	% · · 65.2-14	0	• •					
Surrogate: 1-Chlorooctadecane	. 110 9	63.6-15	4						
· · · · ·									

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or bort, shall be limited to the amount paid by client for anyinges. All claims, including those for negligence and any other case whisporer shall be deemed waived unless made in writing and received by Cardinal within thirth (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, boss of use, or loss of profits incurred by client, its abadiates, affiliates or successor arbiting out of or related to the performance of the services hereander by Cardinal, regardless of whether such client is based upon any of the solve static removes or based or other than the learning of the interviews.

Celez L'Arena-

Celey D. Keene, Lab Director/Quality Manager

# **CARDINAL** Laboratories

# Analytical Results For:

Rice Operating Company					
Hack Conder					
112 W. Taylor					
Hobbs NM, 88240					
Fax To: (575) 3	97-1471				

Received:	07/09/2012	Sampling Date:	07/09/2012
Reported:	07/16/2012	Sampling Type:	Soil .
Project Name:	EME I-7 EOL (19/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN	· · · ·	

#### Sample ID: SB 5 @ 5' (H201561-09)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP			۲		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	07/12/2012	ND	416	. 104	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: AM	•			-	`
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/11/2012	ND	171	85.5	200	3.36	
DRO >C10-C28	<10.0	10.0	07/11/2012	ND	184	92.2	200	1.06	
Surrogate: 1-Chlorooctane	79.6	% 65.2-14	0			•			
Surrogate: 1-Chlorooctadecane	96.5	% 63.6-15	4						

# Sample ID: SB 5 @ 20' (H201561-10)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/12/2012	ND	416	104	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: AM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/12/2012	ND	167	83.4	200	0.491	
DRO >C10-C28	<10.0	10.0	07/12/2012	ND	175	87.7	200	1.55	
Surrogate: 1-Chlorooctane	77.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	100	% 63.6-15	4						•

#### Cardinal Laboratories

#### \*=Accredited Analyte

PLEASE NOTE: Likbling and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or bort, shall be limited is the amount paid by client for analyses. All cleares, including those for negligence and any other cause whiteboerer shall be deemed wheted unless made in writing and received by clearts, including those for negligence and inclusive, completion of the applicable service. In no event shall Cardinal is liability and client's exclusive for any claim arising, whether based in contract or bort, shall be limited is 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 the services hereunder by Cardinal, regardless of whether such climits based. Inclimits humits in thild with written approal of correlated inclinational advances.

Celez Keine

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 SM4500CI-B does not require samples be received at or below $6^{\circ}\text{C}$ Samples reported on an as received basis (wet) unless otherwise noted on report

#### Cardinal Laboratories

#### \*=Accredited Analyte

PLEASE NOTE: Lishifty and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or bort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whitsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (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 subsidiantes, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey Ditreene

Celey D. Keene, Lab Director/Quality Manager

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603

(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 F. Company Name: 5(2), 2							BILL TO						ANALYSIS REQUEST										
Froject Manager: Hack Conder							P.O. #:					<u> </u>	1		i				ΓT	<u> </u>		7	
Address:							Company:					1				S							
City: Hobbs State: NM Zip: 88240								Attn:									6						
Phone #: • Fax #:							Address:					ļ	l			Ē							
Project #: Project Owner:							City:						Σ			S/P							
Project Name:						State: Zíp:					Chlorides		$\mathbf{x}$	TPH	Cations/Anions								
Project Location: EME I-7 FOL 195-37F							Phone #:					1.5	b	BTEX	s ۲	ați.	TDS						
Sampler Name: Kyle Norman							Fax #:					읃		Ш	Ха		F						
Eab I.D. H201561	Sample I.D.			CONTAINERS	GROUNDWATER WASTEWATER	MATE SOL					DATE	TIME	U U	TPH 8015		Texas	Complete						
1	15A1851			Ť	<u> </u>	17	<u>-  </u>		s.µ≞ ¦∂	12	72.9.12	200	17	12.									
2			67			1			-17		l	2:20	1									-	
3	SP32 8 10		(7 (4	1							1	2:30	1	Z									
4	E \$32 @ 36			1		v.						2:40	12	1									
5	Sp.h.Co 51					4		<b></b> [.				2:50											
	<u>SR - CC 24</u>		G			ų.						3:42	-4 <u>/-</u>	14									
	101 101 15 40 201			. <u>.</u>		-4/						2:15 8:30	ų.	$\frac{V}{V}$									
<u>a</u>	<u>NB40 201</u>					5				<u> </u>		<u>2:30</u> 2; 9:5	¥/	4									
	SR5 6 24		4			17			$-\frac{1}{1}$		~~~	4400	7	7									
studyses, AE claury, muhatri Service, In no event studi Ga afficien er saccester, ander	d Damages, Cardinal's febrity and client g those for negligence and wry other ca mice if be indite for incidential or consequ g out of or related to the performance of	use whetherver that be world document, including services forecaster by C	de e me d valhou antirval	i wniwr Lâmda Lâmda	tion, beach diana of wh	enn kalert «Frei mir	uptions, l	ose cla	ta, or la	as of tr	alls insuited by a	ilent, its subsidiants or otherwood	iirs it.						<u>.</u>	lee		·····	
Relinquished By					the	M	Àl	9V	L	Phone Rei Fax Resul REMARKS	sult: (3 Yes F) No Add'I Fax #:												
Relinquished By: Date: Received By:						email				l results: zconder@rice-ecs.com													
	-	Time:	1									Knorn	nan(	@rice	e-ecs	s.cor	n; lp	ena	@ric	eswd	.com		
Delivered By: (Circle One) Sample Condition												jones@riceswd.com; Bbaker@rice-ecs.com;											
Sampler - UP5 - Bus - Other: Diffees Uffees Diffees Uffees						.	(hillials)   hconder@rice_ecs.com ! weinheimer@rice_ecs.com									n							
† Cardinal	cannot accept verbal cl	hanges. Please	e fax	wri	tten cl	nange	s to	505-3	303-2	476													
								47		,													

Page 8 of 8

# hlor'de Cor ce 't at or At '' e Recepto ' Well EME I-7 EOL

