

1R - 425-80

WORKPLANS

Date:

4-16-12

Hansen, Edward J., EMNRD

From: Katie Jones <kjones@riceswd.com>
Sent: Wednesday, August 28, 2013 10:10 AM
To: Hansen, Edward J., EMNRD
Cc: Hack Conder; L Peter Galusky; Laura Pena
Subject: ROC - Vacuum Jct. D-31-2 (1R425-80) CAP Addendum
Attachments: Vacuum Jct. D-31-2 (1R425-80) SB 1-7 with Proposed Liner.jpg; Vacuum Jct. D-31-2 (1R425-80) SB 8-11 with Proposed Liner.jpg

Mr. Hansen,

ROC proposes the following as an Addendum to the Vacuum Jct. D-31-2 (1R425-80) Corrective Action Plan (CAP), submitted on April 16, 2012 and approved by the NMOCD on May 31, 2012.

The following paragraph (in blue) will replace the first four bullet points on Page 2 of the CAP (shown in red, strikethrough).

“In order to protect groundwater quality from the potential migration of residual soil chlorides ROC proposes the following actions to serve as a Corrective Action Plan (CAP) for this project.

ROC will:

Install a 20-mil Reinforced Sub-surface Infiltration Barrier and Restore the Ground Surface

There is an active, non-ROC line running through the southeast corner of the NMOCD approved liner. After numerous attempts, ROC was not obtain permission to excavated beneath the line. As such, ROC proposes to install two separate liners, as shown on the attached plats. Each liner will remain a safe distance from the active line, or at least 3 ft. Due to the presence of hard rock, ROC will excavate each area to depth of 3 ft bgs, and properly seat a 20-mil, reinforced poly liner. Each excavation will be backfilled with soil containing a chloride concentration less than 500 mg/kg and PID (field) reading less than 100 ppm. Excavated soil will be evaluated for use as backfill, and any soil requiring disposal will be properly disposed of at a NMOCD approved facility. The site will be contoured to the surrounding area and seeded with a blend of native vegetation.

- ~~● Excavate a 75 by 65 ft area surrounding the former junction box (Figures 2a & 2b) to a depth of approximately 3 ft bgs (limited by the presence of hard rock).~~
- ~~● Install a 20 mil, reinforced poly liner over a 6 inch layer of clean blow sand and pad this with another 6 inch layer of the same.~~
- ~~● The excavation will then be backfilled with soil that chlorides measure less than 500 mg/kg and PID hydrocarbons measure less than 100 ppm. Excavated soil will be evaluated for use as backfill, and any soil requiring disposal will be properly disposed of at a NMOCD approved facility.~~
- ~~● Restore the ground surface to natural contours and seed with a blend of native vegetation mix.”~~

If you need any further information, please let me or Hack know.

Thank you.

Katie Jones
Environmental Project Manager
RICE Operating Company

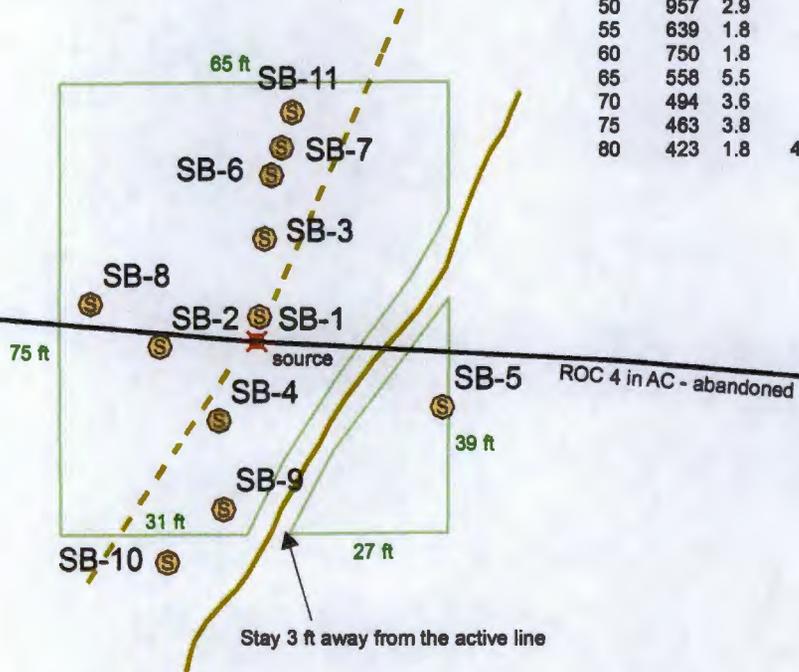
Soil Bore Installation and Proposed Liner

SB-8					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	330	0.3			
5	1385	0.5			
10	2310	0.7			
15	2366	0.8	2320	<10	<10
20	2043	1.4			
25	1354	1.4			
30	1056	1.3			
35	815	1.8			
40	468	1.2			
45	408	1.8			
50	371	0.8			
55	852	0.7			
60	195	1.1			
65	149	1.7	112	<10	10.1

SB-9					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	119	0.9			
5	146	0.7			
10	174	1.1			
15	598	1.4			
20	1239	1.2			
25	2166	1.2			
30	3096	1.5	3160	<10	<10
35	1795	0.9			
40	2106	0.8			
45	2143	1.1			
50	1969	0.5			
55	1917	0.7			
60	1890	1.2			
65	1295	0.6			
70	1438	1.5			
75	1169	0.7			
80	1122	1.1	1120	<10	<10

SB-10					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	164	7.5	48	<10	<10
5	141	9.2			
10	91	7.4			
15	89	13.9	48	<10	<10

SB-11					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	173	5.2			
5	1196	5.5			
10	2499	3.3			
15	2160	4.5			
20	2591	3.7	2920	<10	<10
25	2366	4.3			
30	1693	5.3			
35	1717	8.2			
40	1706	4			
45	1040	1.6			
50	957	2.9			
55	639	1.8			
60	750	1.8			
65	558	5.5			
70	494	3.6			
75	463	3.8			
80	423	1.8	464	<10	<10



Legend

- ABANDONED LINES
- BURIED LINE HIT
- CHEVRON SURFACE POLY
- S SOIL BORES
- MARKING PLATE
- PROPOSED EXCAVATION 20 mil reinforced liner @ 3 ft

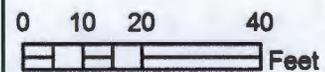
DGW: 83 ft



Vacuum jct. D-31-2

LEGALS: UL/D sec. 31
T17S R35E

NMOCD Case #: 1R425-80



Drawing date: 8/23/13
Drafted by: L. Weinheimer

Soil Bore Installation and Proposed Liner

SB-1					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
15	1391	82	1880	<10.0	645
20	3890	5.1			
25	3299				
30	3660				
35	3231				
40	3050		3120	<10.0	<10.0
45	2460				
50	2411				
55	2533				
60	2584		2280	<10.0	<10.0

SB-2					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	223	0.2			
5	2556	1.5	2760	<10	<10
10	1918	1.5			
15	366	1.7			
20	2421	1.1			
25	2519	2			
30	2070	2.9			
35	2496	2.1			
40	2047	1.3			
45	1677	0.7			
50	308	1.2			
55	1575	2.6			
60	1859	2.3			
65	1087	2.9			
70	1074	1.5			
75	1143	3			
80	812	0.9	352	<10	<10

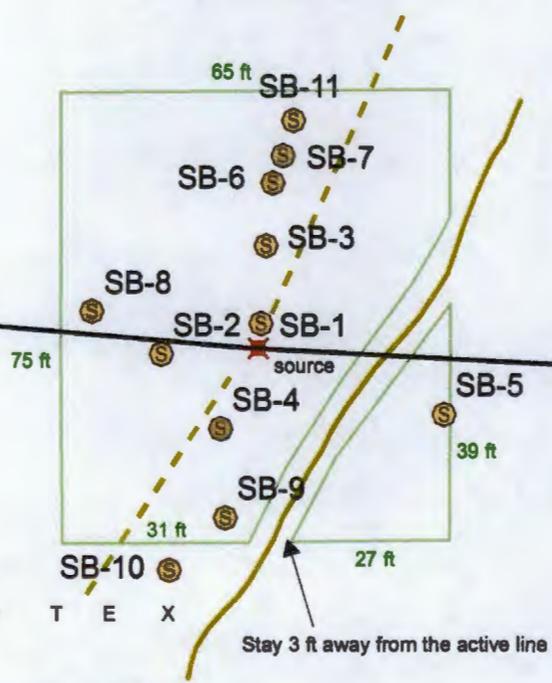
SB-3					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	117	0.2			
5	1715	4.6			
10	4859	2.8			
15	3671	1.7			
20	3890	2.2			
25	3031	2.2			
30	4279	2.2			
35	2421	2.3			
40	4081	2.5			
45	3397	1.9			
50	4862	1.8	3680	<10	<10
55	3338	0.1			
60	3284	0			
65	2825	0			
70	2384	0			
75	2162	0			
80	2437	0	1600	<10	<10

SB-5					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	142	0.4			
5	750	0.5			
10	502	0.8			
15	1046	0.6	1340	<10	<10
20	684	0.7			
25	469	0.6			
30	338	0.9			
35	234	0.8	272	<10	<10

SB-6					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	554	0.9			
5	278	1.1			
10	607	0.9			
15	3521	1.3	3560	<10	<10
20	3119	0.9			
25	557	1.2			
30	374	1.2			
35	440	1.3			
40	671	0.8			
45	994	1.4			
50	1901	1.6			
55	1742	2.6			
60	1706	2.3			
65	963	0.6			
70	1047	0.8			
75	1033	1.2			
80	978	1.4	1180	<10	10.9

SB-7					
Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	347	0.8			
5	279	1.5			
10	401	1.5			
15	1926	1.4			
20	866	1.2			
25	1594	1.5			
30	2111	1.4	2200	<10	<10
35	1453	1.4			
40	1428	1			
45	1339	1.2			
50	2022	1.5			
55	701	1.9			
60	1006	1.3			
65	1041	1.1			
70	877	1.1			
75	632	1.4			
80	550	1.2	480	<10	12.3

SB-4						B T E X			
Depth	Cl-	PID	LAB Cl-	GRO	DRO	B	T	E	X
SS	149	0.2							
5	993	10.9							
10	112	307							
15	208	1136	112	<50	2390	<0.05	<0.05	2.65	1.78
20	994	279							
25	1462	158							
30	2069	120							
35	2876	34.9							
40	2941	19.7	2640	<10	<10				
45	2165	21.2							
50	2560	6.6							
55	2322	5.2							
60	2726	2.9							
65	1727	1.4							
70	1723	2.9							
75	2572	2.8							
80	1644	0.9	1790	<10	<10				



- Legend**
- ABANDONED LINES
 - - - BURIED LINE HIT
 - CHEVRON SURFACE POLY
 - ⊙ SOIL BORES
 - MARKING PLATE
 - PROPOSED EXCAVATION 20 mil reinforced liner @ 3 ft

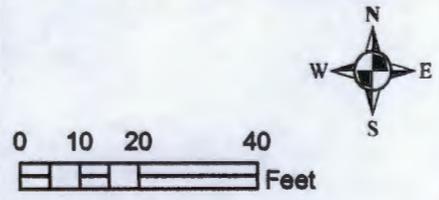
DGW: 83 ft



Vacuum jct. D-31-2

LEGALS: UL/D sec. 31
T17S R35E

NMOCD Case #: 1R425-80



Drawing date: 8/23/13
Drafted by: L. Weinheimer

L. Peter Galusky, Jr. Ph.D., P.G.

Texerra

20055 Laredo Lane Monument, Colorado 80132

Tel: 719-339-6791 E-mail: lpg@texerra.com

April 16th, 2012

Mr. Edward Hansen

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

RECEIVED

APR 25 2012

RE: **Corrective Action Plan (CAP)**

Rice Operating Company – Vacuum SWD System

Vacuum Jct. D-31-2: UL/D, Sec. 31, T17S, R35E (formerly Vacuum Jct. C-31-2)

NMOCD Case Number: 1R425-80

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Sent via Certified U.S. Mail w/ Return Receipt No. 7011 0110 0001 5863 4875

Mr. Hansen:

RICE Operating Company (ROC) has retained Texerra to address potential environmental concerns at the above-referenced site in the abandoned Vacuum Salt Water Disposal (SWD) system. This report summarizes additional soil characterization work completed since our submittal of the Investigation and Characterization Report of August 8th, 2011, approved by OCD on October 19th, 2011, and presents a Corrective Action Plan (CAP) for the protection of groundwater quality.

The location of the Vacuum Jct. D-31-2 site is given in Figure 1. A summary of soil boring analyses from samples taken to date is presented in Figures 2a and 2b and lab analysis is found in the Appendix.

The depth to groundwater at this site is estimated to be approximately 83 ft below ground surface (bgs). Residual soil petroleum hydrocarbons were essentially insignificant (PID readings < 100 ppm) in all soil borings except for SB-4 (approx. 14 ft southwest of the former junction box location) at 15 ft bgs where the PID reading measured 1,136 ppm. Residual soil chloride concentrations exceed 250 mg/kg in portions of most of the soil borings taken. Chloride concentrations in SB-5 decreased with depth from 1,340 mg/kg at 15 ft to 272 mg/kg at 35 ft, and concentrations in SB-8 decreased from 2,320 mg/kg at 15 ft to 112 mg/kg at 65 ft. Chloride concentrations were low throughout SB-10 with 48 mg/kg in the surface sample and the 15 ft sample, and SB-11 concentrations also decreased from 2,920 mg/kg at 20 ft to 464 mg/kg at 80 ft.

In order to protect groundwater quality from the potential migration of residual soil chlorides ROC proposes the following actions to serve as a Corrective Action Plan (CAP) for this project.

Vacuum Jct. D-31-2

ROC will:

Install a 20-mil Reinforced Sub-surface Infiltration Barrier and Restore the Ground Surface

- Excavate a 75 by 65 ft area surrounding the former junction box (Figures 2a & 2b) to a depth of approximately 3 ft bgs (limited by the presence of hard rock).
- Install a 20-mil, reinforced poly liner over a 6-inch layer of clean blow sand and pad this with another 6 inch layer of the same.
- The excavation will then be backfilled with soil that chlorides measure less than 500 mg/kg and PID hydrocarbons measure less than 100 ppm. Excavated soil will be evaluated for use as backfill, and any soil requiring disposal will be properly disposed of at a NMOCD approved facility.
- Restore the ground surface to natural contours and seed with a blend of native vegetation mix.

Install a near-source Monitor Well

- Install a near-source monitor well to determine if groundwater has been impacted by chlorides. Additional monitoring wells may be required to fully delineate groundwater quality.

Report the Course and Results of Work to NMOCD

- Provide a brief report with photographs summarizing the course of these corrective actions and presenting the results of the groundwater sampling.

Depending upon the results of the groundwater sample, ROC may then submit a request for remediation termination. Otherwise, additional groundwater sampling may be proposed.

ROC is the service provider (agent) for the Vacuum 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.

We appreciate your consideration of this Corrective Action Plan. Please do not hesitate to contact either Katie Jones of Rice Operating Company or myself if you have any questions or need additional information.

Sincerely,



L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company

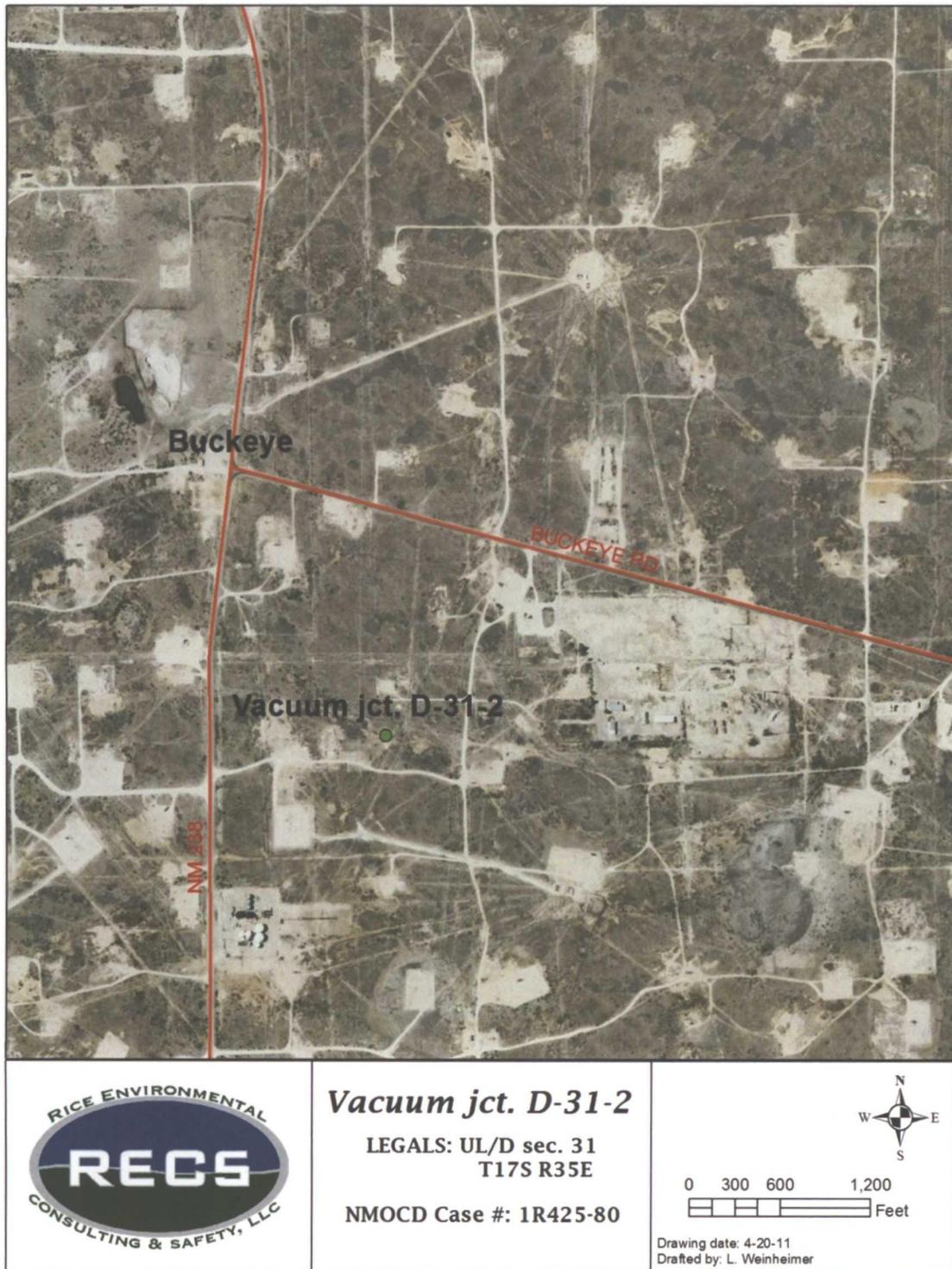


Figure 1 – Vacuum Jct. D-31-2 location.

Soil Bore Installation

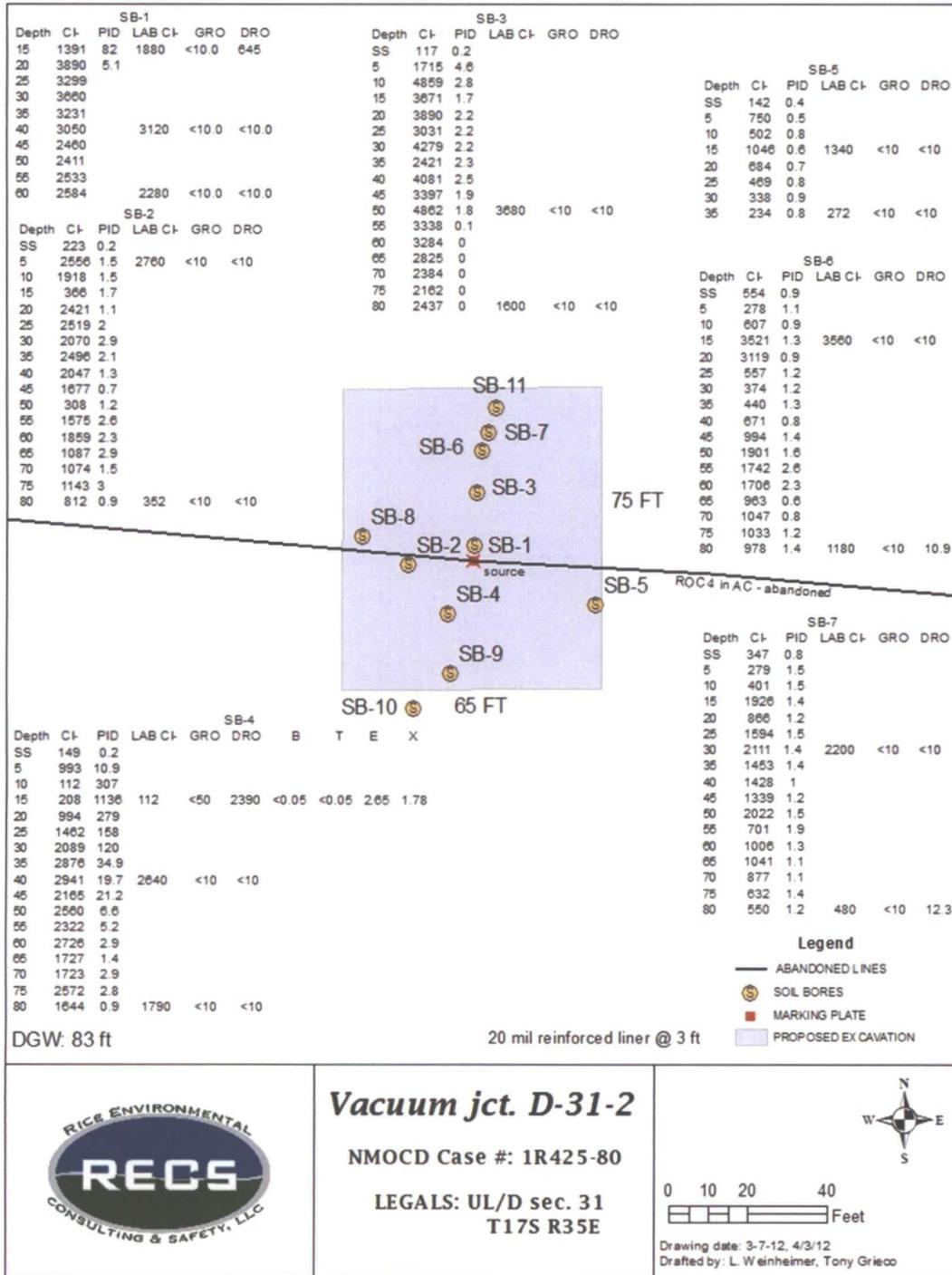


Figure 2a – Vacuum Jct. D-31-2 soil boring locations and analytical results.

Soil Bore Installation

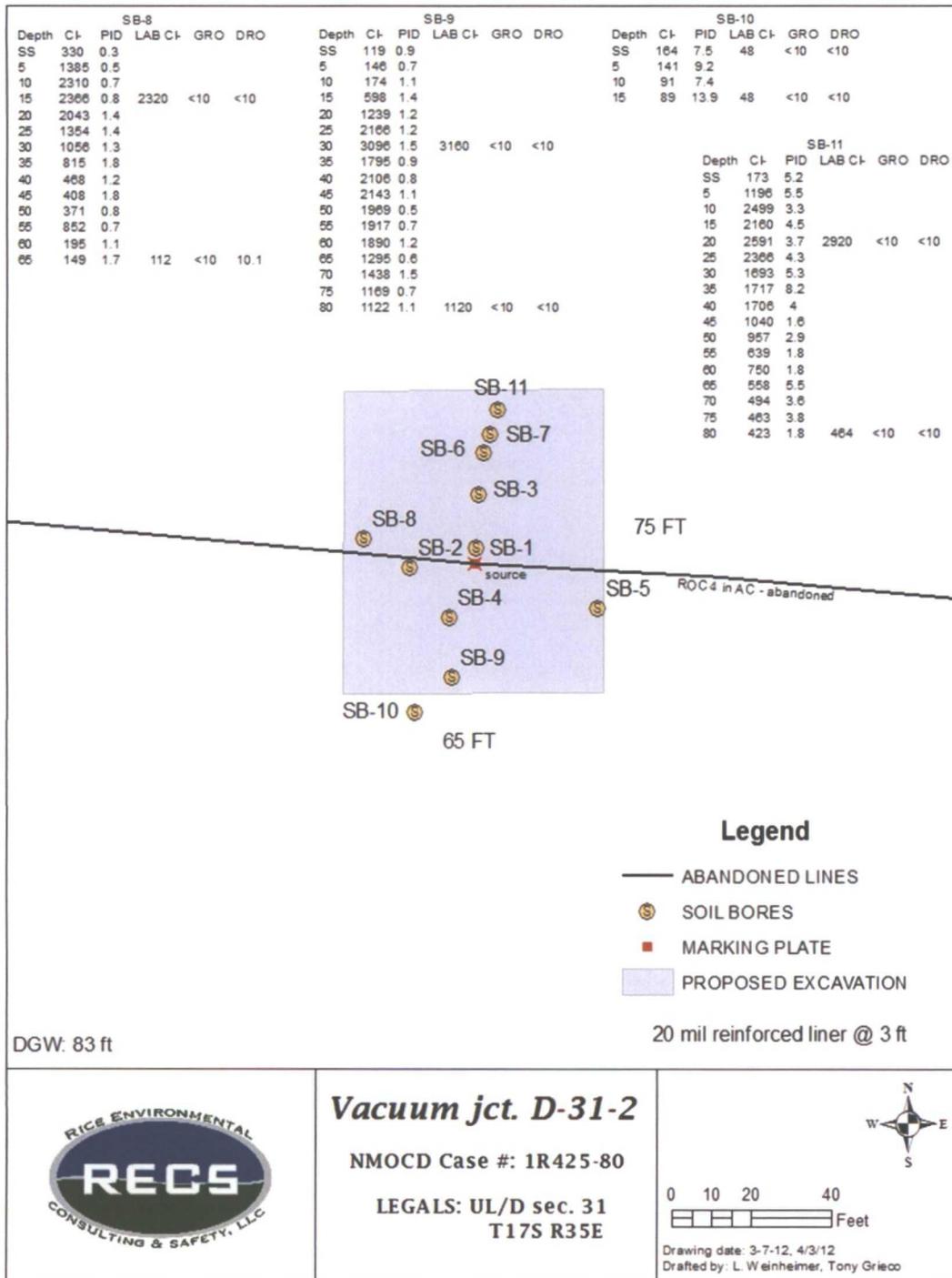


Figure 2b – Vacuum Jct. D-31-2 soil boring locations and analytical results.

Vacuum Jct. D-31-2

Appendix: Laboratory results of soil analysis



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

June 17, 2011

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

RE: VACUUM JCT D-31-2

Enclosed are the results of analyses for samples received by the laboratory on 06/10/11 16:20.

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 Hydrocarbons

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

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 (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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, prominent "C" and "K".

Celey D. Keene
Lab Director/Quality Manager



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:	06/10/2011	Sampling Date:	06/10/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT D-31-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 2 @ 5' (H101213-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2760	16.0	06/15/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32		
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61		
<i>Surrogate: 1-Chlorooctane</i>		90.8 %	70-130							
<i>Surrogate: 1-Chlorooctadecane</i>		111 %	70-130							

Sample ID: SB 2 @ 80' (H101213-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	06/15/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32		
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61		
<i>Surrogate: 1-Chlorooctane</i>		83.9 %	70-130							
<i>Surrogate: 1-Chlorooctadecane</i>		99.1 %	70-130							

Cardinal Laboratories

*=Accredited Analyte

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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:	06/10/2011	Sampling Date:	06/10/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT D-31-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 3 @ 50' (H101213-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3680	16.0	06/15/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32		
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61		
<i>Surrogate: 1-Chlorooctane</i>		89.3 %	70-130							
<i>Surrogate: 1-Chlorooctadecane</i>		103 %	70-130							

Sample ID: SB 3 @ 80' (H101213-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1600	16.0	06/15/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32		
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61		
<i>Surrogate: 1-Chlorooctane</i>		91.9 %	70-130							
<i>Surrogate: 1-Chlorooctadecane</i>		107 %	70-130							

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/10/2011	Sampling Date:	06/10/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT D-31-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 4 @ 15' (H101213-05)

BTEX 8260B		mg/kg		Analyzed By: CMS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/14/2011	ND	2.21	111	2.00	7.93		
Toluene*	<0.050	0.050	06/14/2011	ND	2.24	112	2.00	7.82		
Ethylbenzene*	2.65	0.050	06/14/2011	ND	2.32	116	2.00	8.13		
Total Xylenes*	1.78	0.150	06/14/2011	ND	6.54	109	6.00	8.53		

Surrogate: Dibromofluoromethane 90.9% 80-120
 Surrogate: Toluene-d8 95.2% 80-120
 Surrogate: 4-Bromofluorobenzene 110% 80-120

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	06/15/2011	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	06/16/2011	ND	206	103	200	5.32		
DRO >C10-C28	2390	50.0	06/16/2011	ND	187	93.3	200	5.61		

Surrogate: 1-Chlorooctane 117% 70-130
 Surrogate: 1-Chlorooctadecane 103% 70-130

Cardinal Laboratories

*=Accredited Analyte

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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:	06/10/2011	Sampling Date:	06/10/2011
Reported:	06/17/2011	Sampling Type:	Soil
Project Name:	VACUUM JCT D-31-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 4 @ 40' (H101213-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2640	16.0	06/15/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32		
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61		
<i>Surrogate: 1-Chlorooctane</i>		94.6 %	70-130							
<i>Surrogate: 1-Chlorooctadecane</i>		104 %	70-130							

Sample ID: SB 4 @ 80' (H101213-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1790	16.0	06/15/2011	ND	432	108	400	3.64		
TPH 8015M		mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/16/2011	ND	206	103	200	5.32		
DRO >C10-C28	<10.0	10.0	06/16/2011	ND	187	93.3	200	5.61		
<i>Surrogate: 1-Chlorooctane</i>		90.7 %	70-130							
<i>Surrogate: 1-Chlorooctadecane</i>		112 %	70-130							

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Celey D. Keene

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 SM4500C-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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A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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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: Hack Conder Address: 122 West Taylor City: Hobbs State: NM Zip: 88240 Phone #: 575-393-9174 Fax #: 575-397-1471 Project #: Project Owner: Project Name: Vacuum Jct D-31-2 Project Location: Vacuum Jct D-31-2 Sampler Name: Jordan Woodfin		BILL TO P.O. #: Company: Attn: Address: City: State: Zip: Phone #: Fax #:		ANALYSIS REQUEST Chlorides TPH 8015 M BTEX Texas TPH Complete Cations/Anions TPH 8015 M Extended Thru C40																						
FOR LAB USE ONLY Lab I.D. H101213		Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME										
-1		SB 2 @ 5'		1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	6/10/11	10:00										
-2		SB 2 @ 80'		1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	"	10:15										
3		SB 3 @ 50'		1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	"	10:30										
4		SB 3 @ 80'		1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	"	11:00										
5		SB 4 @ 15'		1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	"	01:15										
6		SB 4 @ 40'		1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	"	01:30										
7		SB 4 @ 80'		1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	"	02:00										

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Relinquished By: Jordan Woodfin		Date: 6/10/11 Time: 4:20		Received By: Jodi Newson		Date: Time:		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Add'l Phone #: Add'l Fax #:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool / Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CHECKED BY: (Initials) JJA		REMARKS: email results Hconder@riceswd.com; jwoodfin@rice-ecs.com; Lweinheimer@rice-ecs.com kjones@riceswd.com					

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

#26

NEED SAMPLES BACK, PLEASE



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

March 01, 2012

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

RE: VACUUM D-31-2 JCT 17S-35E

Enclosed are the results of analyses for samples received by the laboratory on 02/27/12 16:30.

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 accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Halooacetic 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene
Lab Director/Quality Manager



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:	02/27/2012	Sampling Date:	02/27/2012
Reported:	03/01/2012	Sampling Type:	Soil
Project Name:	VACUUM D-31-2 JCT 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	NOT GIVEN		

Sample ID: SB-5 @ 15' (H200512-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1340	16.0	02/28/2012	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	02/29/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	<10.0	10.0	02/29/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		83.7 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		91.7 %	57.6-158							

Sample ID: SB-5 @ 35' (H200512-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	02/28/2012	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	02/29/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	<10.0	10.0	02/29/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		85.2 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		90.3 %	57.6-158							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	02/27/2012	Sampling Date:	02/27/2012
Reported:	03/01/2012	Sampling Type:	Soil
Project Name:	VACUUM D-31-2 JCT 175-35E	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	NOT GIVEN		

Sample ID: SB-6 @ 15' (H200512-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3560	16.0	02/28/2012	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	02/29/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	<10.0	10.0	02/29/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		96.3 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		99.5 %	57.6-158							

Sample ID: SB-6 @ 80' (H200512-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1180	16.0	02/28/2012	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	02/29/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	10.9	10.0	02/29/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		83.3 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		92.9 %	57.6-158							

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	02/27/2012	Sampling Date:	02/27/2012
Reported:	03/01/2012	Sampling Type:	Soil
Project Name:	VACUUM D-31-2 JCT 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	NOT GIVEN		

Sample ID: SB-7 @ 30' (H200512-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2200	16.0	02/28/2012	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	02/29/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	<10.0	10.0	02/29/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		93.8 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		99.6 %	57.6-158							

Sample ID: SB-7 @ 80' (H200512-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	02/28/2012	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	03/01/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	12.3	10.0	03/01/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		99.0 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		105 %	57.6-158							

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	02/27/2012	Sampling Date:	02/27/2012
Reported:	03/01/2012	Sampling Type:	Soil
Project Name:	VACUUM D-31-2 JCT 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	NOT GIVEN		

Sample ID: SB-8 @ 15' (H200512-07)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2320	16.0	02/28/2012	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	03/01/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	<10.0	10.0	03/01/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		94.4 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		99.2 %	57.6-158							

Sample ID: SB-8 @ 65' (H200512-08)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	02/28/2012	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	03/01/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	10.1	10.0	03/01/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		93.8 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		101 %	57.6-158							

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	02/27/2012	Sampling Date:	02/27/2012
Reported:	03/01/2012	Sampling Type:	Soil
Project Name:	VACUUM D-31-2 JCT 17S-35E	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Celey D. Keene
Project Location:	NOT GIVEN		

Sample ID: SB-9 @ 30' (H200512-09)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3160	16.0	02/28/2012	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	03/01/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	<10.0	10.0	03/01/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		96.6 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		102 %	57.6-158							

Sample ID: SB-9 @ 80' (H200512-10)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	02/28/2012	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	03/01/2012	ND	177	88.4	200	8.22		
DRO >C10-C28	<10.0	10.0	03/01/2012	ND	187	93.6	200	7.89		
<i>Surrogate: 1-Chlorooctane</i>		94.2 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		102 %	57.6-158							

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Celey D. Keene, Lab Director/Quality Manager



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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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A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 8 of 8

Company Name: <i>Hack Conder RICE</i>		P.O. #:		ANALYSIS REQUEST Chlorides TPH 8015 M BTEX Texas TPH Complete Cations/Anions TDS	
Project Manager:		Company:			
Address:		Attn:			
City: State: NM Zip:		Address:			
Phone #: Fax #:		City:			
Project #: Project Owner:		State: Zip:			
Project Name:		Phone #:			
Project Location: <i>Vacuum D-31-2 Jct 17S-35E</i>		Fax #:			
Sampler Name: <i>Kyle Norman</i>					

Lab I.D.	Sample I.D.	FOR LAB USE ONLY	# CONTAINERS	MATRIX						PRESERV.		SAMPLING	
				GROUNDWATER	WASTEWATER	SOIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME
<i>H200512-</i>													
<i>01</i>	<i>SB5 @ 15'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>8:30</i>
<i>02</i>	<i>SB5 @ 35'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>8:45</i>
<i>03</i>	<i>SB6 @ 15'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>9:00</i>
<i>04</i>	<i>SB6 @ 80'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>9:30</i>
<i>05</i>	<i>SB7 @ 30'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>10:00</i>
<i>06</i>	<i>SB7 @ 80'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>10:30</i>
<i>07</i>	<i>SB8 @ 15'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>11:45</i>
<i>08</i>	<i>SB8 @ 65'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>12:00</i>
<i>09</i>	<i>SB9 @ 30'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>2:00</i>
<i>10</i>	<i>SB9 @ 80'</i>		<i>6</i>			<i>✓</i>						<i>2-27-12</i>	<i>2:45</i>

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Relinquished By: <i>Kyle Norman</i>	Date: <i>2-27-12</i>	Time: <i>8:30</i>	Received By: <i>Clyde</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Time:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: <i>3.5C</i>			Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	CHECKED BY: (Initials) <i>cdh</i>	

REMARKS:
email results
kjones@riceswd.com; knorman@rice-ecs.com;
Zconder@rice-ecs.com; Bbaker@rice-ecs.com;
hconder@rice-ecs.com; Lweinheimer@rice-ecs.com

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

#26



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

March 05, 2012

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

RE: VACUUM D-31-2 JCT 17S-35E

Enclosed are the results of analyses for samples received by the laboratory on 02/28/12 15:40.

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 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,

A handwritten signature in black ink that reads "Celey D. 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:	02/28/2012	Sampling Date:	02/28/2012
Reported:	03/05/2012	Sampling Type:	Soil
Project Name:	VACUUM D-31-2 JCT 175-35E	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 10 @ SURFACE (H200527-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/29/2012	ND	400	100	400	7.69		
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	03/02/2012	ND	202	101	200	9.46		
DRO >C10-C28	<10.0	10.0	03/02/2012	ND	201	101	200	9.80		
<i>Surrogate: 1-Chlorooctane</i>		88.8 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		92.8 %	57.6-158							

Sample ID: SB 10 @ 15' (H200527-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/29/2012	ND	400	100	400	7.69		
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	03/02/2012	ND	202	101	200	9.46		
DRO >C10-C28	<10.0	10.0	03/02/2012	ND	201	101	200	9.80		
<i>Surrogate: 1-Chlorooctane</i>		92.3 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		101 %	57.6-158							

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	02/28/2012	Sampling Date:	02/28/2012
Reported:	03/05/2012	Sampling Type:	Soil
Project Name:	VACUUM D-31-2 JCT 175-35E	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SB 11 @ 20' (H200527-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2920	16.0	03/01/2012	ND	400	100	400	7.69		
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	03/02/2012	ND	202	101	200	9.46		
DRO >C10-C28	<10.0	10.0	03/02/2012	ND	201	101	200	9.80		
<i>Surrogate: 1-Chlorooctane</i>		91.1 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		99.4 %	57.6-158							

Sample ID: SB 11 @ 80' (H200527-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	464	16.0	03/01/2012	ND	400	100	400	7.69		
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	03/02/2012	ND	202	101	200	9.46		
DRO >C10-C28	<10.0	10.0	03/02/2012	ND	201	101	200	9.80		
<i>Surrogate: 1-Chlorooctane</i>		86.7 %	55.5-154							
<i>Surrogate: 1-Chlorooctadecane</i>		93.2 %	57.6-158							

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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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 SM4500C-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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A handwritten signature in cursive script that reads "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Page 4 of 5



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: <i>Rice</i>		BILL TO:		ANALYSIS REQUEST																								
Project Manager: <i>Hank Conder</i>		P.O. #:		Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS																			
Address:		Company:																										
City: State: NM Zip:		Attn:																										
Phone #: Fax #:		Address:																										
Project #: Project Owner:		City:																										
Project Name:		State: Zip:																										
Project Location: <i>Vacuum D-31-2 Jct 175-35E</i>		Phone #:																										
Sampler Name: <i>Kyle Norman</i>		Fax #:																										
FOR LAB USE ONLY																												
Lab I.D.	Sample I.D.	(G)RAB OR (C)IMP.	# CONTAINERS							MATRIX				PRESERV.	SAMPLING													
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME														
<i>H200527</i>																												
	<i>1 SB10 @ Surface</i>	<i>G</i>	<i>1</i>										<i>2-28-12</i>	<i>830</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>												
	<i>2 SB10 @ 15'</i>	<i>G</i>	<i>1</i>										<i>2-28-12</i>	<i>900</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>												
	<i>3 SB11 @ 20'</i>	<i>G</i>	<i>1</i>										<i>2-28-12</i>	<i>10:30</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>												
	<i>4 SB11 @ 80'</i>	<i>G</i>	<i>1</i>										<i>2-28-12</i>	<i>1045</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>												
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Relinquished By: <i>[Signature]</i>		Date: <i>2-28-12</i>	Received By: <i>Jodi Henson</i>		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:																							
Relinquished By:		Time: <i>3:40</i>	Received By:		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #:																							
Delivered By: (Circle One)		Sample Condition		CHECKED BY: <i>[Signature]</i>		REMARKS:																						
Sampler - UPS - Bus - Other:		Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No				email results kjones@riceswd.com; knorman@rice-ecs.com; Zconder@rice-ecs.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com																						

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