

1R - 425-86

REPORTS

DATE:

12-21-12

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

Texerra LLC

20055 Laredo Lane Monument, Colorado 80132
Tel: 719-339-6791 E-mail: lpg@texerra.com

RECEIVED OCD

2012 DEC 21

1:38

December 21st, 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

RE: Corrective Action Plan (CAP) Report & Termination Request
Rice Operating Company – Vacuum SWD System
Vacuum N-28-2 vent (Formerly Vacuum K-28-2 vent)
NMOCD Case Number: 1R425-86. UL/N, Sec. 28, T17S, R35E

Sent via Certified U.S. Mail w/ Return Receipt No. 7011 0110 0002 5197 1341

Mr. Hansen:

RICE Operating Company (ROC) has retained Texerra (now Texerra LLC) to address potential environmental concerns at the above-referenced site in the abandoned Vacuum Salt Water Disposal (SWD) system. This site was previously referred to as the Vacuum K-28-2 Vent. The name was subsequently changed to the Vacuum N-28-2 Vent to reflect the geographical location of the site.

This site is located approximately 2.5 miles east of Buckeye, New Mexico in UL/N, Sec. 28, T17S, R35E. NM OSE records indicate that groundwater is expected at a depth of approximately 68 +/- feet.

In 2009, ROC initiated work on the former Vacuum N-28-2 Vent as part of the Vacuum SWD system abandonment. An initial evaluation of residual soil chlorides and petroleum hydrocarbons, utilizing an air-rotary drill, was conducted and soil samples were analyzed at the former junction box location from the ground surface to 12 ft bgs. Diesel range organics (DRO) and gasoline range organics (GRO) both tested below 10 mg/kg in the 12 ft bgs sample, while PID (field) readings were low throughout the sampling depths. In contrast, residual soil chlorides rose from approximately 200 mg/kg near the surface to 5,440 at 12 ft bgs. The entire borehole was plugged with bentonite to the ground surface. NMOCD was notified of potential groundwater impact on November 16th, 2009.

As part of the Investigation and Characterization Plan (ICP), approved by OCD on June 9th, 2011, ROC completed additional soil delineation work in 2011 and 2012. High levels of residual soil chlorides were found in all of the ten soil borings taken. Field PID readings indicated residual soil petroleum hydrocarbons in several locations, but these tended to decrease with depth.

It should be noted that site is located within the immediate vicinity of oil field facilities having a long history with apparent surface spillage and that the elevated levels of residual soil chlorides are likely

Rice Operating Company - Vacuum N-28-2 Vent

due to activities not directly caused by ROC operations. Nevertheless, in order to protect groundwater quality from the potential migration of residual soil chlorides and hydrocarbons, ROC submitted a CAP on April 16th, 2012. The report proposed installing a 20-mil reinforced liner at 3 ft bgs (limited by the presence of hard rock), backfilling with clean soil, and seeding of the surface. NMOCD approved the report on June 25th, 2012.

Between August 20th, 2012 and September 24th, 2012, ROC completed the following actions:

- Excavated the area encompassed by the soil borings (55 ft by 61 ft) to a depth of approximately 5 ft bgs (See attached plat).
- Clean blow sand was imported placed in the bottom of the excavation creating a 6 inch blow sand layer. A sample of the imported soil returned a field PID result of 1.4 ppm, a laboratory chloride result below detectable limit (<16 mg/kg) and a laboratory TPH result below detectable limit (<10 mg/kg DRO and GRO). A 55 ft by 61 ft, 20-mil, reinforced poly liner was installed and properly seated above a 6 inch pad, and a 1 foot layer of blow sand was placed above the liner .
- The excavated soil was screened to remove large rocks and the soil was properly disposed of at a NMOCD approved facility.
- The large rocks were returned to the excavation and the site was then backfilled and contoured to the surrounding area with clean, imported soil.
- On September 24th, 2012, the site was seeded with a blend of native vegetation.

A schematic diagram, photographs of this work, laboratory analysis, a PID sheet, and a revegetation form are attached.

As this work has ensured the protection of groundwater quality from potential impacts of residual soil chlorides, ROC respectfully requests remediation termination or other appropriate regulatory closure status.

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.

Rice Operating Company - Vacuum N-28-2 Vent

We appreciate your consideration of this CAP Report and Termination Request. Please do not hesitate to contact either Hack Conder of Rice Operating Company or myself if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to be 'L. Peter Galusky, Jr.', written in a cursive style.

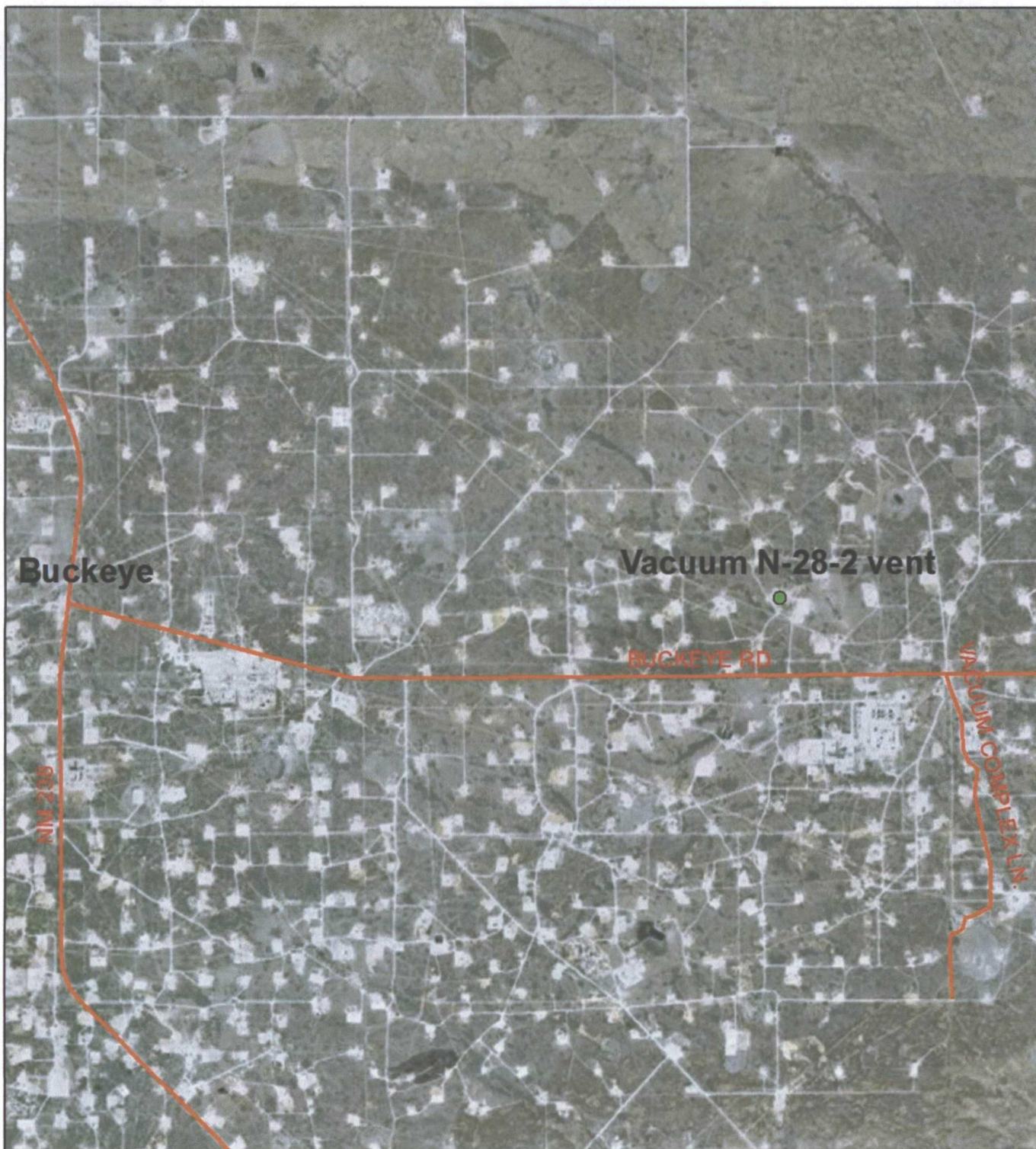
L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company

Attachment: Appendix, as outlined below.

APPENDIX

- **Figure 1 - Site Location Map**
- **Figure 2 - Aerial extent of installed synthetic liner**
- **Figure 3 – Soil backfill laboratory analysis report**
- **Figure 4 – Soil backfill field PID report**
- **Figure 5 – Revegetation Form**
- **Figure 6 – Photographs of CAP work**



Vacuum N-28-2 vent

LEGALS: UL/N sec. 28
T17S R35E

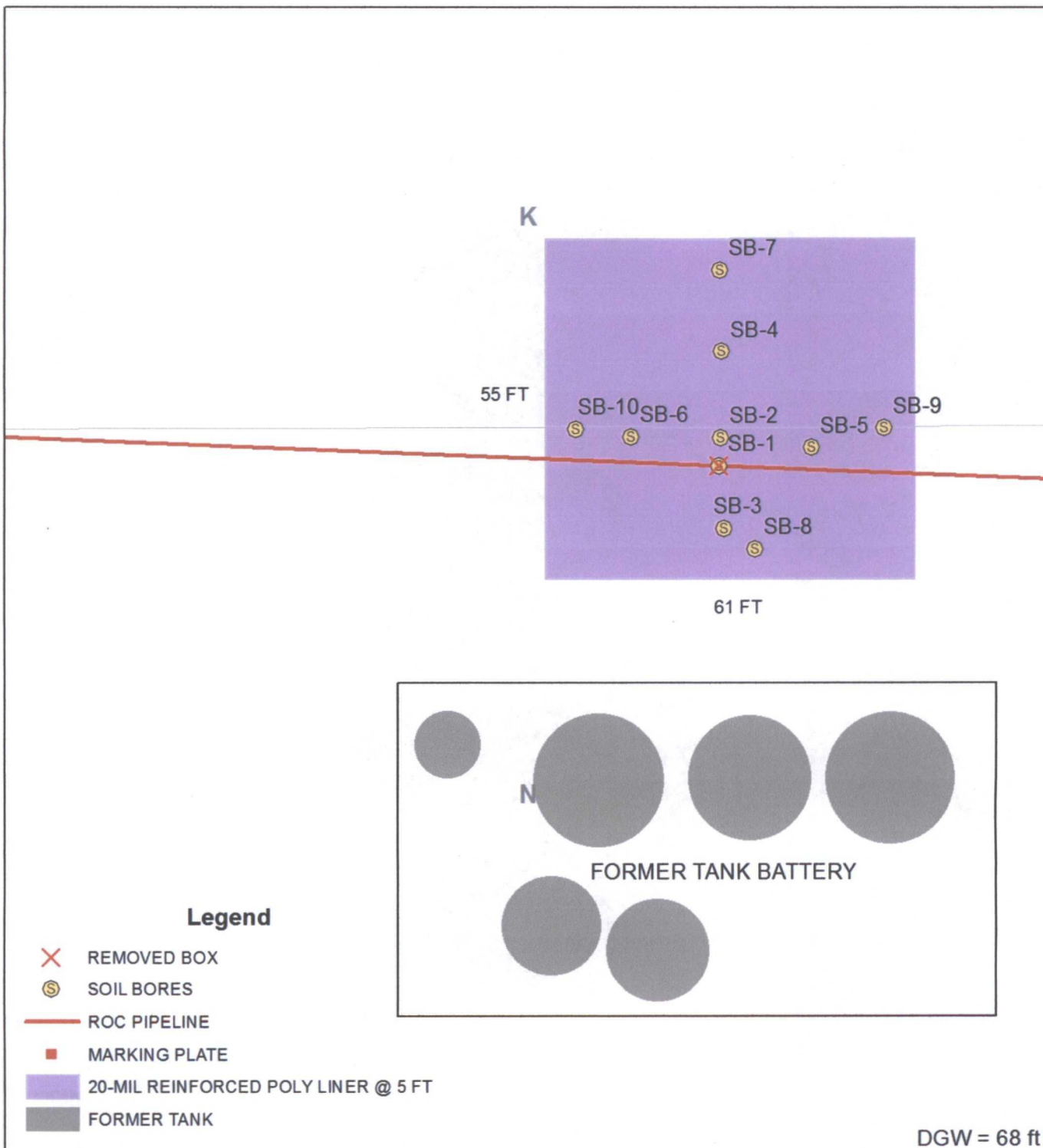
NMOCD Case #: 1R425-86

Figure 1



0 875 1,750 3,500
Feet

Drawing date: 4-20-11
Drafted by: L. Weinheimer



DGW = 68 ft



Vacuum N-28-2 vent

LEGALS: UL/N sec. 28
T17S R35E

NMOCD Case #: 1R425-86

Figure 2



0 10 20
Feet

Drawing date: 12/17/12
Drafted by: L. Weinheimer

September 07, 2012

ZACH CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

112 W. TAYLOR

HOBBS, NM 88240

RE: VACUUM N-28-2 VENT

Enclosed are the results of analyses for samples received by the laboratory on 08/31/12 15:20.

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/ga/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 ENVIRONMENTAL CONSULTING & SAFETY
ZACH CONDER
112 W. TAYLOR
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	08/31/2012	Sampling Date:	08/31/2012
Reported:	09/07/2012	Sampling Type:	Soil
Project Name:	VACUUM N-28-2 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

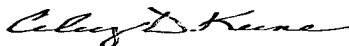
Sample ID: IMPORT SOIL/ BACKFILL (H202111-01)

Chloride, SM4500Cl-B			mg/kg							
			Analyzed By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/04/2012	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	09/06/2012	ND	191	95.3	200	5.10		
DRO >C10-C28	<10.0	10.0	09/06/2012	ND	156	78.2	200	6.68		
Surrogate: 1-Chlorooctane	90.0 %	65.2-140								
Surrogate: 1-Chlorooctadecane	99.1 %	63.6-154								

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 tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 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 subsidiaries, 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 D. Keene, Lab Director/Quality Manager

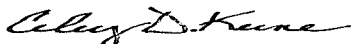
Notes and Definitions

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

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 tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 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 subsidiaries, 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 D. Keene, Lab Director/Quality Manager

[illegible]

Figure 4

RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240
 PHONE: (505) 393-9174 FAX: (505) 397-1471
 PID METER CALIBRATION & FIELD REPORT FORM

CK.	<input type="checkbox"/>
MODEL	<input type="checkbox"/>
NO.	<input type="checkbox"/>
	<input checked="" type="checkbox"/>

MODEL: PGM 7300	SERIAL NO: 590-000508
MODEL: PGM 7300	SERIAL NO: 590-000504
MODEL: PGM 7320	SERIAL NO: 592-903318
MODEL: PGM 7300	SERIAL NO: <u>590-902012</u>

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: <u>HAL-248-100-1</u>	EXPIRATION DATE: 7/1/2015
METER READING ACCURACY: 100 PPM	

ACCURACY : +/- 2%

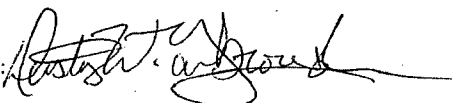
COMPANY
Rice Operating

SITE	UNIT	SECTION	TOWN SHIP	RANGE
VAC N-28-2 <i>Vent</i>	N	28	17S	35E

SAMPLE ID	PID	SAMPLE ID	PID
Imported Backfill Soil	1.4		

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE:



DATE: 8.31-12



Figure 5

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

REVEGETATION FORM

1. General Information

Site name: Vacuum N-28-2 vent						
U/L N	Section 28	Township 17S	Range 35E	County Lea	Latitude 32°48'8.483"N	Longitude 103°27'49.816"W
Contact Name: Zach Conder						
Email: zconder@rice-ecs.com						
Site size: 5,000 square feet				Map detail of site attached <input type="checkbox"/>		
Additional information:						

2. Soils

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

Salvaged from site <input checked="" type="checkbox"/>	Bioremediated <input type="checkbox"/>	Imported <input checked="" type="checkbox"/>	Blended <input type="checkbox"/>	Depth (in):
Texture:		Describe soil & subsoil: caliche from the site was used to backfill the excavation and imported top soil was use to contour the site to the surrounding area		
Soil prep methods:	Rip <input type="checkbox"/>	Depth(in):	Disc <input type="checkbox"/>	Depth (in):
Rollerpack <input type="checkbox"/>				
Date completed: 9/12/2012				

3. Bioremediation

Fertilizer <input type="checkbox"/>	Hay <input type="checkbox"/>	Other <input type="checkbox"/>
Type:	Describe:	
Lbs/acre:		

4. Seeding

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

Custom seed mix <input checked="" type="checkbox"/>	Prescribed mix <input type="checkbox"/>	Seed mix name: 5 lbs. Blue grama, 5 lbs. Side oats grama	Seeding date: 9/24/2012
Broadcast <input checked="" type="checkbox"/>			
Method: Portable seeder			
Soil conditions during seeding: Dry <input checked="" type="checkbox"/> Damp <input type="checkbox"/> Wet <input type="checkbox"/>			
Photos attached <input type="checkbox"/>	Observations:		
Number of photos:			

5. Certification

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

Name: Eduardo Garcia	Title: Environmental Tech	Date: 9/24/2012
Signature: <i>Eduardo Garcia</i>		

Figure 6

**Vacuum N-28-2 vent
Unit N, Section 28, T17S, R35E**



site prior to excavation, facing east
4/19/2012



excavating the site, facing northwest
8/27/2012



screening rock from the excavated soil,
facing north 8/27/2012



installing the 20-mil, reinforced liner above the
6 inch blow sand pad, facing north 8/30/2012



20-mil, reinforced liner installed,
facing west 8/30/2012



padding above the liner with 6 inches of blow
sand, facing west 8/30/2012



Exporting excavated soil, facing west
9/10/2012



seeding the backfilled site, facing south
9/24/2012



raking in the seed, facing north 9/24/2012



site complete, facing west 9/24/2012