1R - 425.85

REPORTS

DATE:

9-11-12

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

September 11th 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
SEP 17 2012
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

RE: **Corrective Action Plan (CAP) Report & Termination Request**
Rice Operating Company – Vacuum SWD System
Vacuum N-28 Vent: UL/N, Sec. 28, T17S, R35E
NMOCD Case Number: 1R425-85

Sent via Certified U.S. Mail w/ Return Receipt No. 7011 0110 0002 5197 1310

Mr. Hansen:

This report summarizes work completed per the NMOCD approved Corrective Action Plan (CAP) of April 17th, 2012, approved by NMOCD on June 25th, 2012, for the above-referenced project. This site is located approximately 2.5 miles east of Buckeye, New Mexico in UL/N, Sec. 28, T17S, R35E as shown on the attached Site Location Map. The depth to groundwater at this site is estimated to be approximately 68 ft below ground surface (bgs).

In 2009, ROC initiated work on the former Vacuum N-28 Vent as part of the system abandonment. An initial evaluation of residual soil chlorides and petroleum hydrocarbons was made using an air-rotary drill, analyzing samples taken at the former junction box location the ground surface to 12 ft bgs. Laboratory analysis for diesel range organics (DRO) tested at 80.3 mg/kg and gasoline range organics (GRO) were non-detect (< 10 mg/kg). In contrast, residual soil chlorides tested approximately 2,560 mg/kg 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 Characterization Plan (ICP) approved by OCD on June 9th, 2011, ROC evaluated soils with respect to residual chlorides and petroleum hydrocarbons from six bores. Residual soil chlorides were found in all of the soil borings near the surface. However, soil chloride concentrations dropped to below 250 mg/kg in SB-2, SB-3, SB-4, SB-5 and SB-6. Chloride concentrations in SB-2 decreased from 960 mg/kg at 20 ft to 32 mg/kg at 40 ft, SB-3 decreased from 1,170 mg/kg at 8 ft to 224 mg/kg at 12 ft, concentrations in SB-4 decreased from 3,680 mg/kg at 8 ft to 48 mg/kg at 55 ft, concentrations decreased in SB-5 decreased from 3,560 mg/kg at 7 ft to 32 mg/kg at 40 ft, and SB-6 decreased from 2,240 mg/kg at 7 ft to 64 mg/kg at 40 ft. Residual soil petroleum hydrocarbons were low (PID readings < 100 ppm) in all soil borings except SB-6 where the

GRO concentration was 136 mg/kg at 3 ft and the DRO concentration was 1,740 mg/kg, at 7 ft the GRO was 179 mg/kg and the DRO was 2,430 mg/kg, but decreased to a value of non-detect by 40 ft. Taken together, these data indicate that residual chlorides and petroleum hydrocarbons are concentrated in the near-surface across the location.

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 due to activities not directly caused by ROC operations. Nevertheless, in order to protect groundwater quality from the potential migration of residual soil chlorides, ROC submitted a CAP on April 17th, 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 July 31st, 2012 and August 29th, 2012, ROC completed the following actions:

- Excavated the area encompassed by the soil borings (48 ft by 96 ft) to a depth of approximately 5 ft bgs. Due to the close proximity between this and the ROC Vacuum Jct. N-28-1 junction box, the excavation and liner encompassed the affected areas of both former boxes (See attached plat).
- Clean blow sand was imported and placed in the bottom of the excavation creating a 6 inch blow sand layer. The imported blow sand was utilized for the three N-28 sites (N-28 vent, Jct. N-28-1, and N-28-2 vent). A sample of the imported soil returned a field PID reading 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 48 ft by 96 ft, 20-mil, reinforced poly liner was installed and properly seated above a 6 inch pad, and a 6 inch 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.
- The site was then seeded with a blend of native vegetation.

A schematic diagram of the installed liner, laboratory analysis, photographs of the course of work, 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.

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.

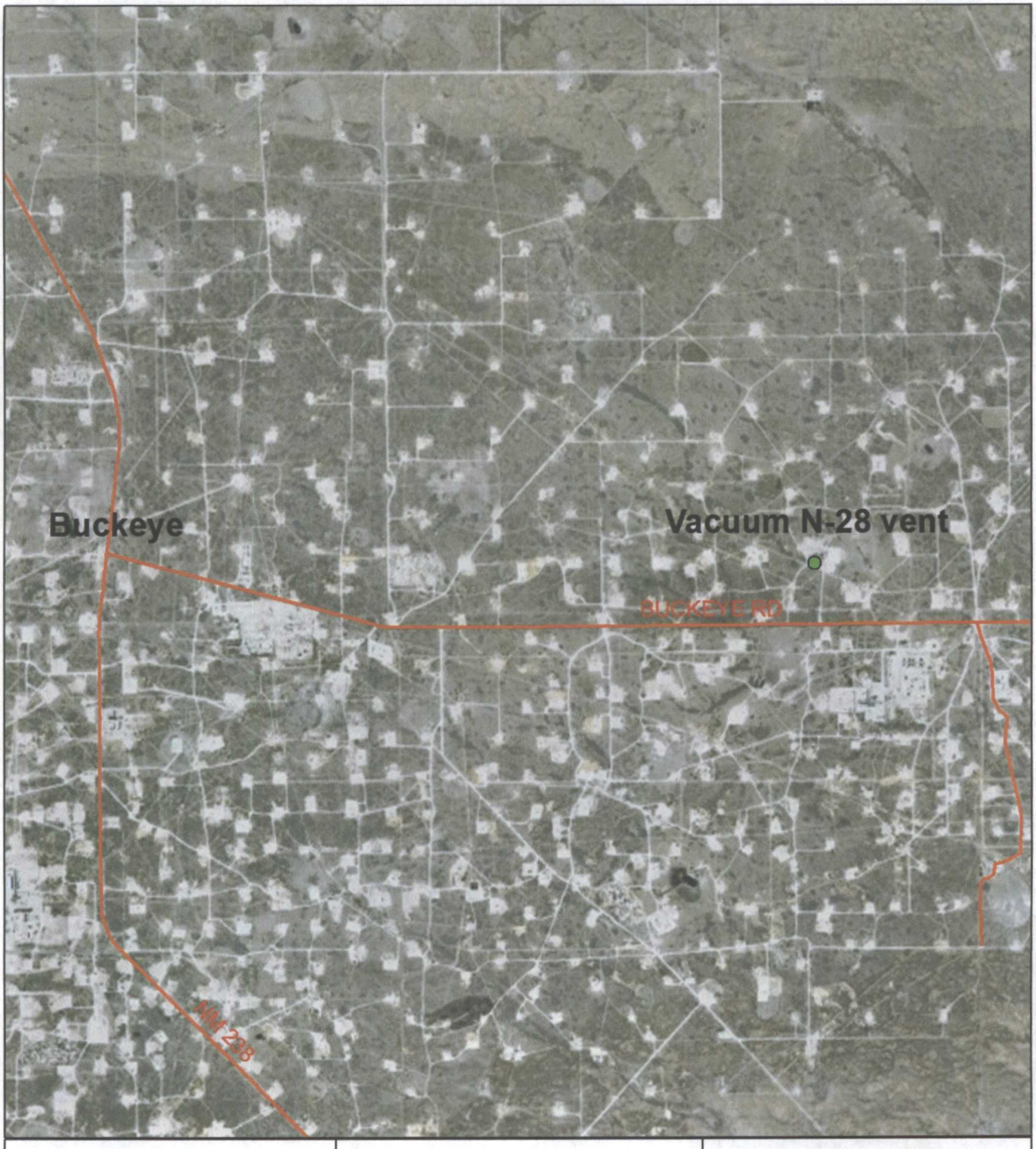
Sincerely,

L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company

Attachments: *as noted in text*

Site Location



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

Vacuum N-28 vent

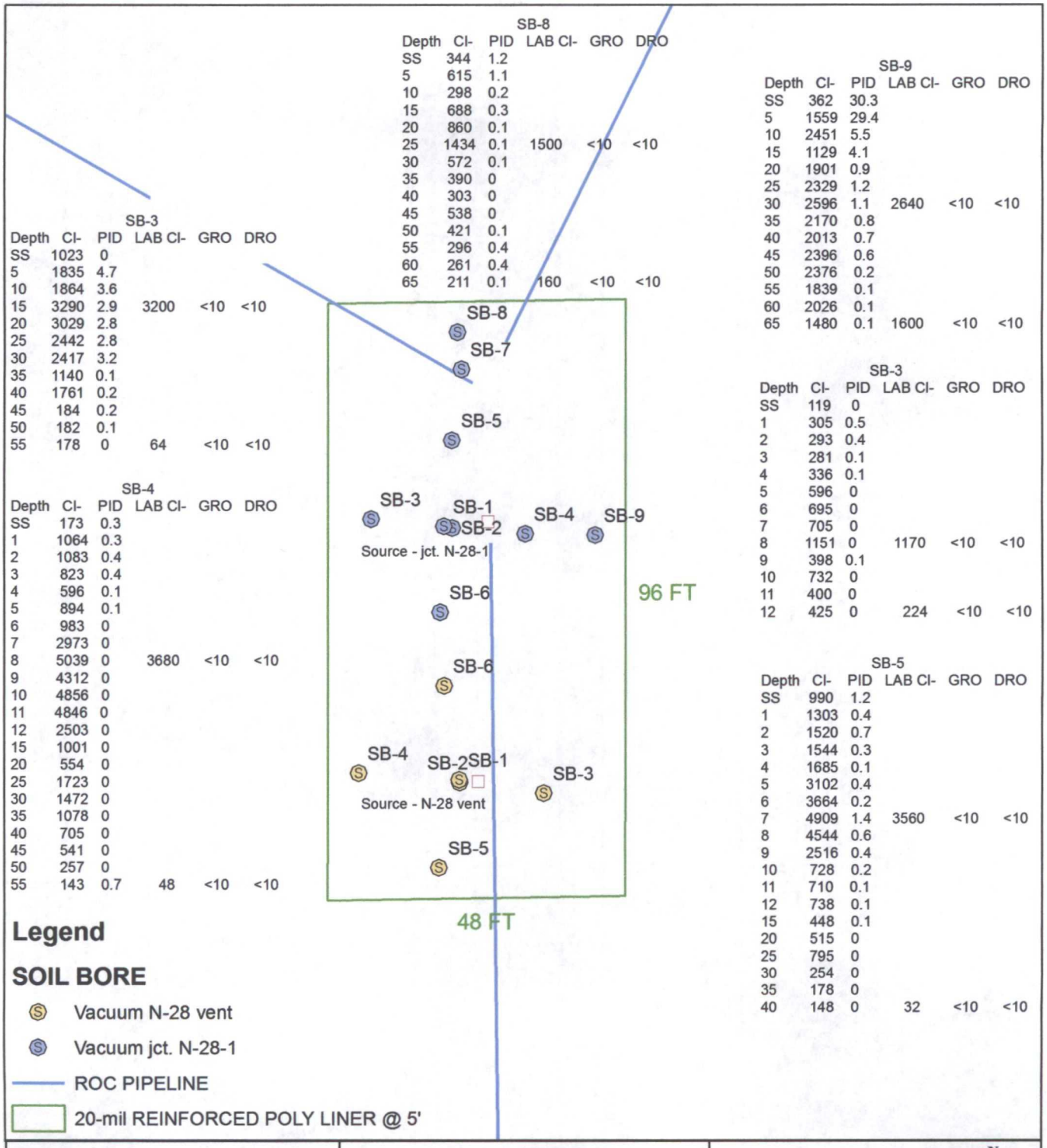
LEGALS: UL/N sec. 28
T17S R35E

NMOCD Case #: 1R425-85

N
W E
S

0 875 1,750 3,500
Feet

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



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

VACUUM N-28 VENT & JCT. N-28-1

UL's N & K SECTION 28
T-17-S R-35-E
LEA COUNTY, NM

N W E S

0 10 20 Feet

Drawing date: 4/12/12
Drafted by: L. Weinheimer

CARDINAL Laboratories

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

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/qa/lab_accred_certif.html.

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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Rice Environmental Consulting & Safety	**BILL TO**
Project Manager: Zach Conder	P.O. #:
Address:	Company:
City: State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Vac. N-25-3 Vent	State: Zip:
Project Location:	Phone #:
Sampler Name:	Fax #:

ANALYSIS REQUEST: Chlorides; TPH 8015m

Lab I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	TIME	Chlorides	TPH 8015m
H202111 -1	Impact Soil/Backfill	G	1			✓							3-31-12	10:45A	✓	✓

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 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 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: [signature]	Date: 3-31-12 Time: 3:00P	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials) [initials]	REMARKS: E-MAIL ALL to dyarbrough@rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#26

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. MODEL NO.			
		MODEL: PGM 7300	SERIAL NO: 590-000508
		MODEL: PGM 7300	SERIAL NO: 590-000504
		MODEL: PGM 7320	SERIAL NO: 592-903318
	X	MODEL: PGM 7300	SERIAL NO: 590-902072

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : HAL-248-100-1	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 Vent	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: [signature] DATE: 8-31-12

Vacuum N-28 Vent (1R425-85) and Vacuum Jct. N-28-1 (1R425-87)

Unit Letter N, Section 28, T17S, R35E

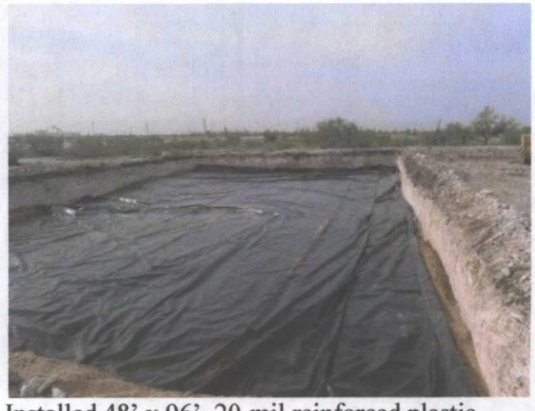
Sites prior to excavation, facing south-southwest 7/31/2012

Screening rock, facing northeast 8/10/2012

Completed excavation, facing south 8/10/2012

Exporting spoil pile, facing west 8/13/2012

Installing 6" bottom sand pad, facing south 8/15/2012

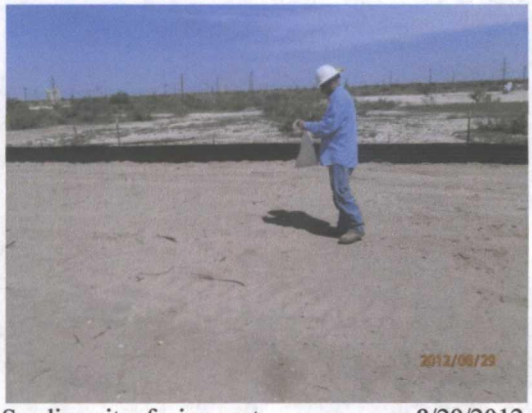


Installed 48' x 96', 20-mil reinforced plastic liner at 5' bgs, facing south 8/17/2012

Installing 1' sand lift above liner, facing south 8/17/2012

Returning rock to 2' bgs, facing east 8/17/2012

Backfilling with topsoil from 2' bgs, facing north 8/17/2012



Seeding site, facing east 8/29/2012

Raking seed, facing north 8/29/2012

Site complete, facing south 8/29/2012

RICE ENVIRONMENTAL
RECS
CONSULTING & SAFETY, LLC

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

REVEGETATION FORM

1. General Information

Site name:	**Vacuum N-28 Vent and Vacuum Jct. N-28-1**					
U/L	Section	Township	Range	County	Latitude	Longitude
N	**28**	**17S**	**35E**	**Lea**	**32°48'7.954"N 32°48'8.341"N**	**103°27'47.929"W 103°27'47.989"W**
Contact Name:	**Bruce Baker**					
Email:	**bbaker@rice-ecs.com**					
Site size:	**45' x 85' 3,825** square feet		Map detail of site attached ☐			
Additional information:						

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

Salvaged from site ☐	Bioremediated ☐	Imported ☒	Blended ☐	Depth (in): **60 in**
Texture: **Sandy**	Describe soil & subsoil:	**Sandy soils**		
Soil prep methods:	Rip ☐ Depth(in):	Disc ☐ Depth (in):	Rollerpack ☐	
Date completed: **8/22/12**				

3. Bioremediation

Fertilizer ☐	Hay ☐	Other ☐
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 ☒	Prescribed mix ☐	Seed mix name: **5 lbs side oats 5 lbs blue grama grass seed**	Seeding date: **8/29/12**
Broadcast ☒ Method: **Hand Broadcast**			
Soil conditions during seeding:	Dry ☒	Damp ☐	Wet ☐
Photos attached ☐ Number of photos:	Observations:	**Seed was raked into soil.**	

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: **8/29/12**
Signature: Eduardo Garcia		