

1R - 426-98

REPORTS

DATE:

5-5-11

Texerra

RECEIVED OCD

75 Wuthering Hts Drive Colorado Springs, CO 80921

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

May 5th, 2011

2011 MAY 12 A 11:49

Mr. Edward Hansen

New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

RE: **Corrective Action Plan (CAP) Progress Report**
Rice Operating Company – BD SWD System
BD O-23-1 Junction Box (Vent) UL O, Sect 23, Township 21S, Range 37E
NMOCD Case Number 1R426-98

Sent via Email and U.S. Certified Mail Return Receipt No. 7011 0110 0001 5863 4783

Mr. Hansen,

This Progress Report summarizes work completed to date by Rice Operating Company (ROC) at the BD O-23-1 vent junction box location (Figure 1). ROC has completed the soil restoration and vadose zone protection work elements specified in the Corrective Action Plan (CAP) for this project, as summarized below. The CAP was approved by the NMOCD on January 10, 2011.

From February 18, 2011 through April 1, 2011, chloride impacted soils were removed across the area affected, approximately 48x50 ft, by past operations of the BD O-23-1 vent junction box, to a depth of 5 ft below ground surface (bgs). Six inches of clean blow sand (padding) were added to the bottom of the excavation and a 20 mil impermeable liner was carefully installed. An additional 6 inches of clean blow sand was padded on top of the liner before the excavated soil material was placed above it. An eight-point composite sample from the backfilled material tested 23.6 ppm (Figure 3; measured using a field PID meter) and 128 mg/kg for chlorides (Figure 4; by laboratory analysis). Clean, imported topsoil was amended with peanut hay and spread over the work area and the lease road was repaired using imported base coarse. The site was seeded using 10 pounds (lbs) of pecos district mix and 10 lbs of tritcale seed (Figure 5) and silt fencing was installed to preclude wildlife during seedling growth.

On January 21, 2011, ROC plugged and abandoned the initial near-source monitor well (MW-1; Figures 6 & 7) and replaced it with a 4-inch monitoring well (MW-1R; Figures 8 & 9).

To further enhance recover of the NMOCD approved chloride mass, ROC installed an additional 4-inch diameter pumping well (RW-2) on April 12, 2011 for the removal of contributed chloride mass (Figures 10 & 11). Water pumping and storage facilities are presently under construction, and we anticipate this system to be operational this summer. We will subsequently report the removal of the requisite mass of groundwater chlorides and at that time request that final project remediation termination status be granted.

We appreciate your consideration of this report. Please do not hesitate to contact either myself or Rice Operating Company if you have any questions or need additional information. Hack, we don't usually ask for Termination unless all the work at the site is finished; however, OCD did give Termination of the Vac Jct. M-5 soils. Do you want to do that here or say that upon completion of the chloride mass removal, a Termination Request will be submitted?

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., P.G.
Principal

Copy: Rice Operating Company

Attachments:

- Site location map
- Photographs of soil excavation & restoration.
- Drillers plugging & abandonment report & photographs for Monitor Well #1.
- Drillers log & photographs for the installation of the recovery well.

BD O-23-1 vent

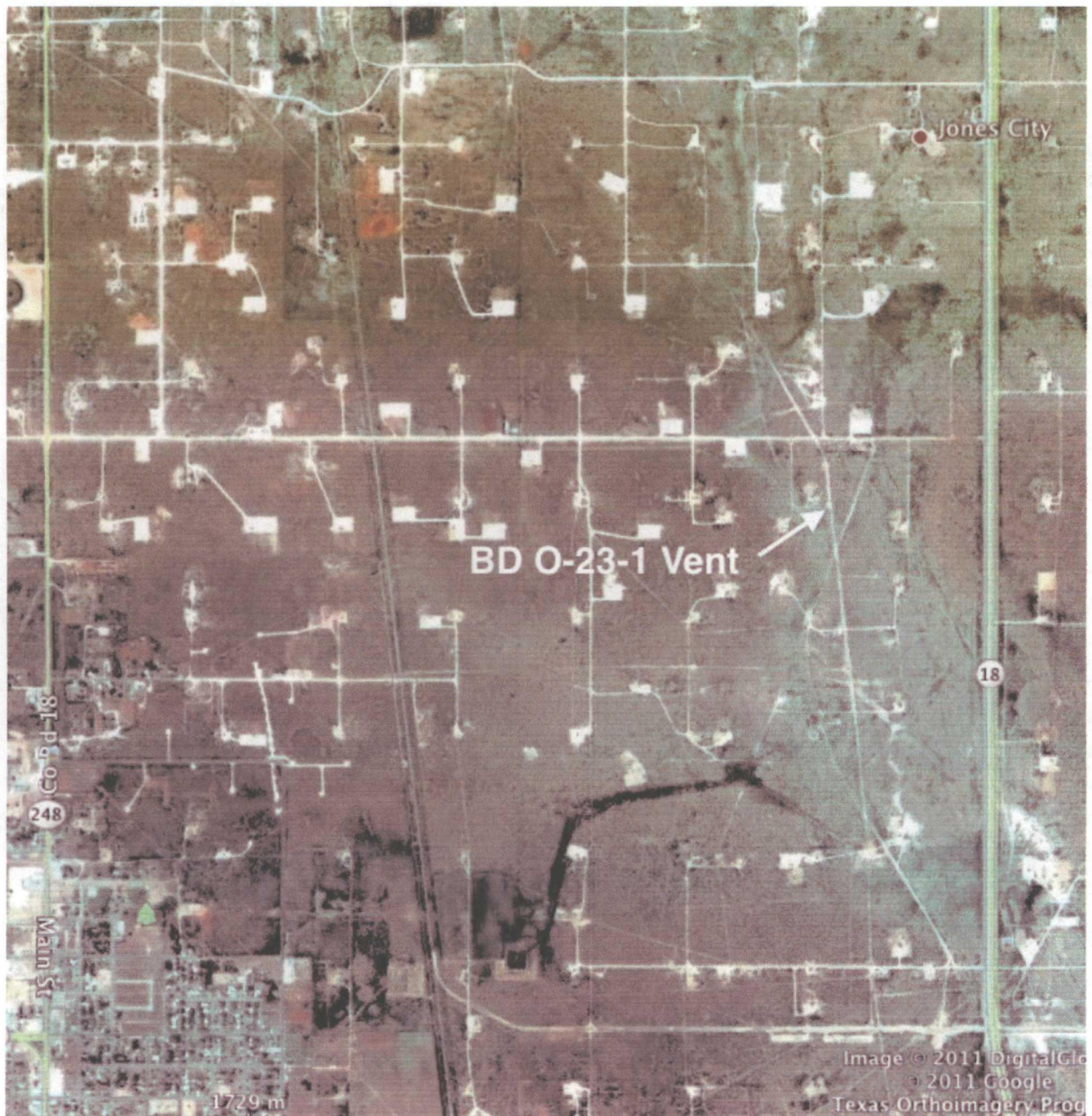


Figure 1 – Site location.

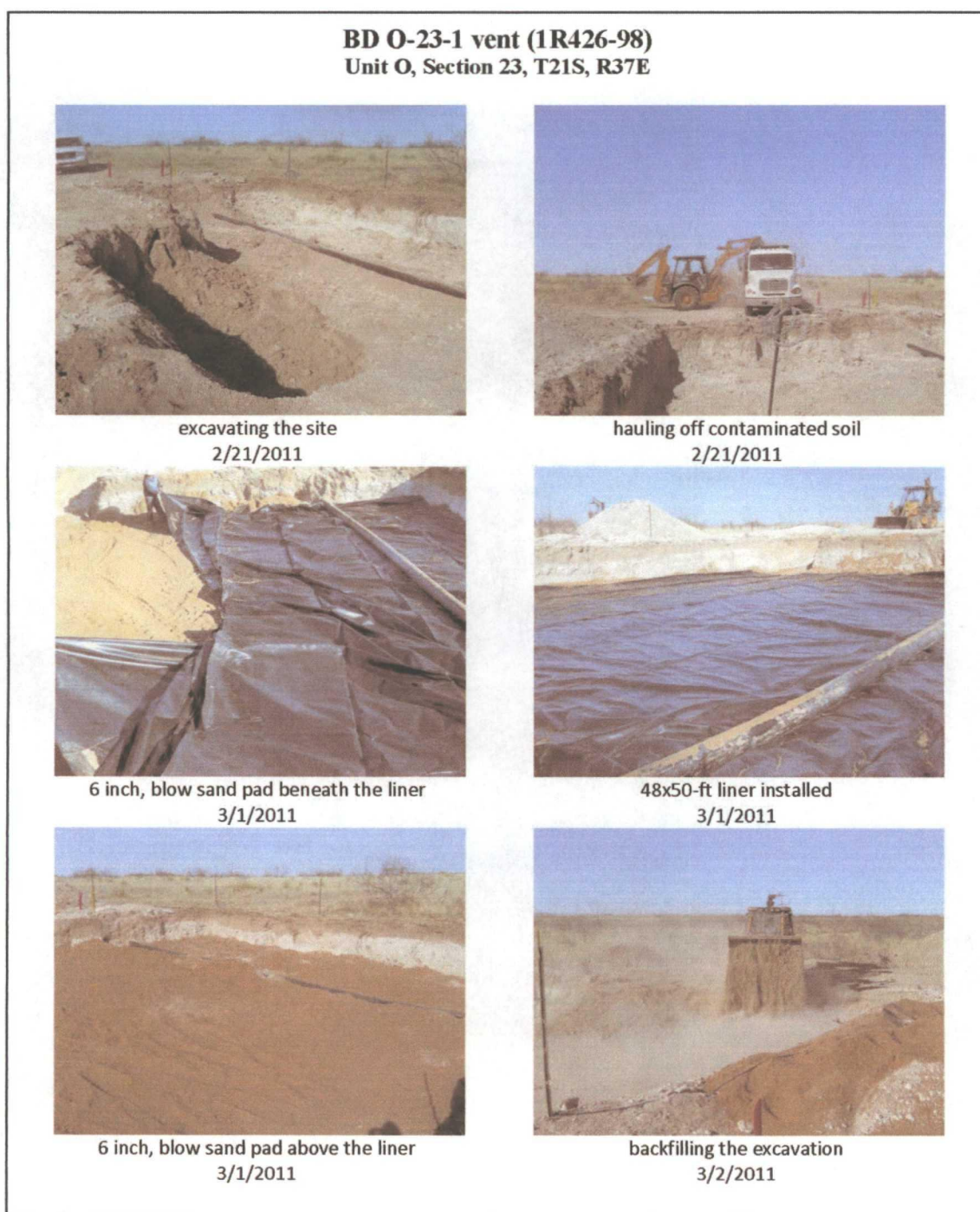


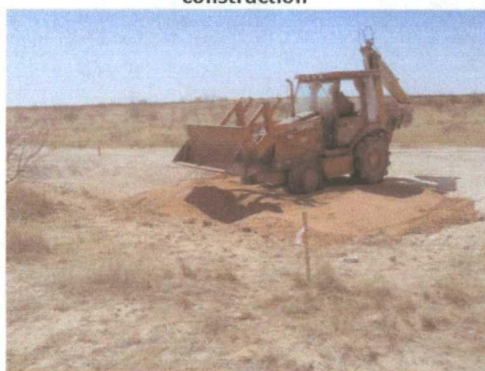
Figure 2a – Photographic chronology of soil removal, liner installation and soil restoration.



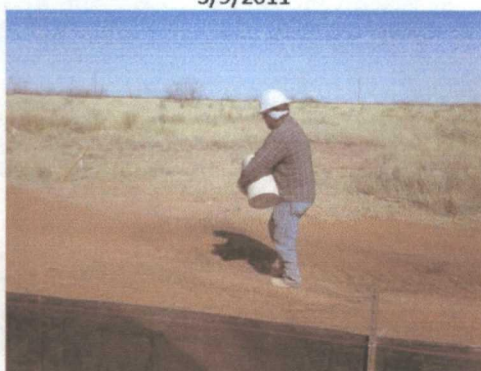
importing base coarse for lease road construction



repairing the lease road
3/9/2011



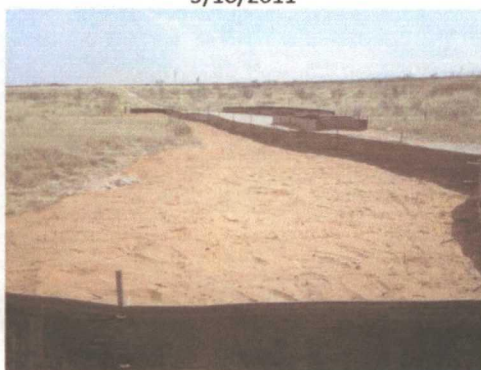
spreading imported blow sand blended with peanut hay
3/9/2011



adding BioNhance to the backfilled site
3/18/2011



seeding the backfilled site
3/18/2011



site complete
3/18/2011

Figure 2b – Photographic chronology of soil removal, liner installation and soil restoration.

RICE OPERATING COMPANY

122 West Taylor Hobbs, NM 88240
 PHONE: (575) 393-9174 FAX: (575) 397-1471
 PID METER CALIBRATION & FIELD REPORT FORM

Check Model Number:			
<input checked="" type="checkbox"/>	Model: PGM 7300	Serial No: 590-000183	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Model: PGM 7300	Serial No: 590-000508	<input type="checkbox"/>
<input type="checkbox"/>	Model: PGM 7300	Serial No: 590-000504	<input type="checkbox"/>
	Model: PGM 7600	Serial No: 110-023920	
	Model: PGM 7600	Serial No: 110-013744	
	Model: PGM 7600	Serial No: 110-013676	

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO: 927041	EXPIRATION DATE: 11/16/12
METER READING ACCURACY: 100.0	
ACCURACY: +/- 2%	

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	O-23-1 VENT	0	23	21S	37E

SAMPLE ID	PID	SAMPLE ID	PID
8PT BACKFILL Comp	23.6		

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



SIGNATURE:  DATE: 2/28/11

Figure 3 – Field PID test of composite backfill soil material.

Figure 4 – Laboratory analysis of chlorides in composite backfill soil material.

**CARDINAL**
Laboratories

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

March 01, 2011

Bruce Baker
Rice Operating Company
112 W Taylor
Hobbs, NM 88240

RE BD JCT O-23-1

Enclosed are the results of analyses for samples received by the laboratory on 02/28/11 16:36

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.

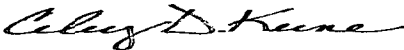
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Halacetic 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,



Celey D. Keene
Lab Director/Quality Manager

Page 1 of 4



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

Analytical Results For:

Rice Operating Company
 Bruce Baker
 112 W. Taylor
 Hobbs NM, 88240
 Fax To. (575) 397-1471

Received	02/28/2011	Sampling Date	02/28/2011
Reported	03/01/2011	Sampling Type	Soil
Project Name.	BD JCT O-23-1	Sampling Condition	** (See Notes)
Project Number	NONE GIVEN	Sample Received By	Jodi Henson
Project Location.	NOT GIVEN		

Sample ID: 8 PT BACKFILL COMP (H100394-01)

Chloride, SM4500Cl-B		mg/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	03/01/2011	ND	432	108	400	0.00	

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



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

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A handwritten signature in cursive script, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>RECF</u>		BILL TO		ANALYSIS REQUEST																		
Project Manager: <u>BRUCE BAKER</u>		P.O. #		<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> CHAIN OF CUSTODY </div>																		
Address:		Company:																				
City:	State:	Zip:	Attn:																			
Phone #	Fax #	Address																				
Project #	Project Owner:		City																			
Project Name: <u>DD JEF 023-1</u>			State:																			
Project Location			Zip:																			
Sampler Name: <u>HARRISON</u>			Phone #:																			
		Fax #																				
FOR LAB USE ONLY																						
Lab I.D.	Sample I.D.	(GRAB OR COMPOUND)	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME								
<u>H100394-1</u>	<u>SPR BAKINTEL COMP</u>	<input checked="" type="checkbox"/>	<u>1</u>			<input checked="" type="checkbox"/>							<u>2-28-11</u>	<u>3:45</u>								

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising out of this contract 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 as a result of any service. In no event shall Cardinal be liable for any claim 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 limitations or otherwise.

Relinquished By: <u>[Signature]</u>	Date: <u>2-28-11</u>	Received By: <u>Gode Benson</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <u>[Signature]</u>	Time: <u>4:56</u>	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler: <u>UPS</u> - Bus - Other		Sample Condition Cool: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: <u>[Signature]</u>	
REMARKS: <u>EMREL 631-8909</u> <u>REST! Robert</u>				

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

#26



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

VEGETATION FORM

1. General Information

Site Name: BD O-23-1 vent						
U/L O	Section 23	Township 21S	Range 37E	County Lea	Latitude N 32°27.521'	Longitude W 103°07.858'
Contact Name: Bruce Baker						
Email bbaker@rice-ecs.com						
Site size 4,357 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.) 3.5 ft-1 ft: salvaged, 1 ft-ground surface: blow sand blended with peanut hay
Texture sandy		Describe soil and subsoil: blow sand and subsoil caliche		
Soil prep methods.	Rip <input type="checkbox"/>	Depth (in.)	Disc <input type="checkbox"/>	Depth (in.)
Date complete: 3/18/2011				

3. Bioremediation

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

4. Seeding

Custom seed mix <input checked="" type="checkbox"/>	Prescribed mix <input type="checkbox"/>	Seed mix name Pecos District Mix	Seeding date. 3/18/2011
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 10 lbs of Pecos District Mix and 10 lbs of triticale seed (hybrid wheat seed)	

5. Certification

Name Dak Harris	Title: Environmental Tech	Date: 3/18/2011
Signature: <i>Dak Harris</i>		

Figure 5 – Vegetation reseeding field log.

**HARRISON &
COOPER, INC.**

Drilling & Pump Professionals

7414 85th Street, Lubbock, Texas 79424-4951

P.O. Box 96, Wolfforth, Texas 79382-0096

Ph: (806) 866-4026

Fax: (806) 866-4044

hcdrill.com

Plugging Report

Client	Rice Operating
Contractor	Harrison & Cooper
Date Completed	1/21/2011
Site	BD O-23-1
Well ID	MW-1
Casing Diameter	2"
Well Depth	65'
Casing Material	PVC
Plugging Material	Portland/Bentonite Slurry
Slurry Interval	3'-65'
Cement Interval	0'-3'

Copies: File

Email (Lara Weinheimer; Katie Jones)

Regulated by: Texas Dept. of Licensing & Regulation, Water Well Division, P.O. Box 12157, Austin, TX 78711, (800) 803-9202

Figure 6 – Driller's log of the plugging and abandonment of MW-1.

BD O-23-1 vent (1R426-98)
Unit O, Section 23, T21S, R37E



MW-1 being removed, facing north
1/21/2011



preparing to remove MW-1, facing north
1/21/2011









plugging MW-1 with concrete/bentonite slurry
1/21/2011



MW-1 plugging complete, facing east
1/21/2011

Figure 7 – Photographs of the plugging and abandonment of MW-1.

Client:	Rice Operating	Well Description:	Schematic Drawing of Well Construction for Monitoring Well
Project Name:			
Location:	BD O-23-1		

Depth (feet)	Comments:		Material Descriptions:
0.0			Cement, 0'-2', 6 bags
2.0	Borehole Diameter - 7 3/8"		
			Bentonite, 2'-30', 13 bags Riser, +3'-33'
	Surface Completion - 6"x6" Steel Upright w/ 2'x2 Concrete Pad		8/16 Sand, 30'-85', 41 bags, Screen 0.030, 33'-73'
30.0			
33.0			10' Riser Sump Below Screen, 73'-83'
73.0			
83.0			
85.0			

Harrison & Cooper, Inc. P.O. Box 96 Wolfforth, Texas 79382	MW-1R	14-Jan-11
	Monitoring Well	

Figure 8 – Driller’s log for the installation of the recovery (pumping) well (MW-1R).

BD O-23-1 vent (1R426-98)
Unit O, Section 23, T-21-S, R-37-E



drilling MW-1R (facing east)



mudding in the well (facing east)



setting the casing (facing east)



sanding the well in



sealing the well in with bentonite (facing south)



concreting the well in (facing south)



MW-1R complete (facing east)

Figure 9 – Photographs of the installation of the recovery (pumping) well (MW-1R).

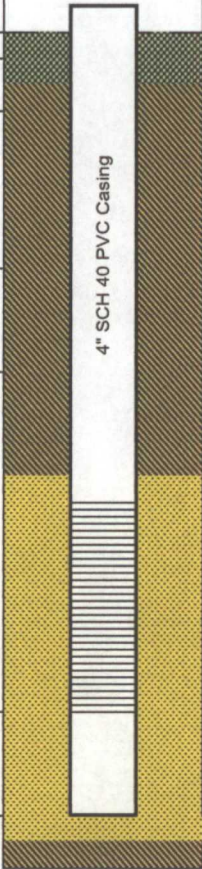
Client:		Rice Operating		Well Description:	Schematic Drawing of Well Construction for Monitoring Well
Project Name:					
Location:		BD O-23-1			
Depth (feet)	Comments:			Material Descriptions:	
0.0				Cement, 0'-2', 7 bags	
2.0	Borehole Diameter - 7 7/8"				

Figure 10 – Driller's log for the installation of the recovery (pumping) well (RW-2).

BD O-23-1 vent (1R426-98)
Unit O, Section 23, T-21-S, R-37-E



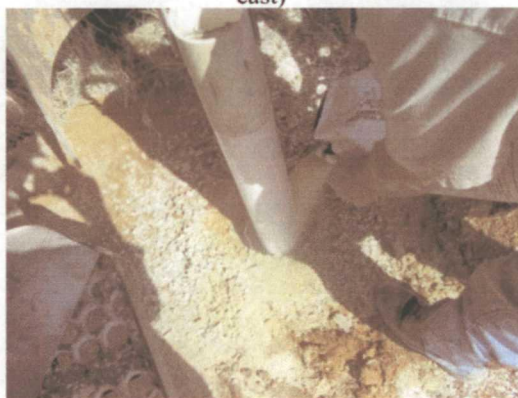
Drilling RW-2 (facing south-east)



Drilling RW-2 with mud rotary (facing south-east)



Inserting the casing into the hole



Adding the sand pack



Adding the bentonite seal



Pouring the concrete for the base

Figure 11 – Photographs of the installation of the recovery (pumping) well (RW-2).