Rice Environmental Consulting & Safety
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

May 21st, 2012

Mr. Mike Bratcher
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, District 2
811 S. First St.
Artesia, NM 88210

RE: **Termination Request**
Quantum Resources Management, LLC
Conoco 7 St. #12 AD: UL/K sec. 7 T19S R29E
API No. 30-015-25160

Mr. Bratcher:

Quantum Resources Management, LLC (Quantum) has retained Rice Environmental Consulting and Safety (RECS) to address environmental concerns at the above-referenced site. NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 150 +/- feet.

Background and Previous Work

On January 29th, 2012, a produced water injection line ruptured releasing 20 to 40 barrels of fluid. The injection line was repaired and none of the fluid was recovered. The impacted area totaled 6,000 sq ft of which 4,583 sq ft was in the pasture and 1,417 sq ft was along a two track dirt road. On March 1st, 2012, an initial C-141 was submitted to NMOCD detailing the release area. The site is located in Eddy County, New Mexico at unit letter 'K', section 7, T19S R29E.

On January 30th, 2012, RECS personnel were on site to collect samples from the release area (Figure 1). The samples were field tested for chlorides and hydrocarbons, and the surface samples were taken to a commercial laboratory for confirmation of field numbers (Appendix A). The surface samples at all five points showed chloride values above 10,000 mg/kg. Four trenches were advanced at the site on January 31st, 2012, to determine the vertical extent of the release (Figure 2). Bottom samples were taken from the verticals at Pt. 1 at 4 ft bgs and Pt. 2 at 9 ft bgs and taken to a commercial laboratory for analysis. Pt. 1 at 4 ft bgs returned a chloride reading of 80 mg/kg, a GRO reading of non-detect and a DRO reading of 163 mg/kg. Pt. 2 at 9 ft returned a chloride reading of 208 mg/kg, a GRO reading of non-detect and a DRO reading of 37.6 mg/kg (Appendix A).

Two soil bores were advanced at the site on February 16th, 2012 near verticals Pt. 3 and Pt. 5. Pt. 3 was advanced to 20 ft bgs and Pt. 5 was advanced to 16 ft bgs (Figure 2). The samples were field tested for both chloride and hydrocarbons and representative samples

were taken to a commercial laboratory for analysis (Appendix B). Pt. 3 at 17 ft bgs returned a chloride reading of 8,100 mg/kg, a GRO reading of non-detect and a DRO reading of 11.4 mg/kg. Pt. 3 at 20 ft bgs returned a chloride reading of 160 mg/kg and GRO and DRO readings of non-detect. Pt. 5 at 14 ft bgs returned a chloride reading of 400 mg/kg and GRO and DRO readings of non-detect. Pt. 5 at 16 ft bgs returned a chloride reading of 112 mg/kg and GRO and DRO readings of non-detect.

On March 1st, 2012, NMOCD approved excavation of the area around SB- Pt. 3 and SB-Pt. 5 to 5 ft bgs and installing a 20-mil reinforced poly liner. The excavation would be backfilled with clean, imported top soil to promote vegetative growth. The remaining area in the pasture would be excavated to 3 ft bgs and the area on the road would be excavated to 4 ft bgs. The pasture would be backfilled with clean, imported top soil and the road would be backfilled with clean, imported caliche. All soils excavated from the site would be disposed of at an NMOCD approved facility.

Beginning on March 5th, 2011, RECS personnel were on site to excavate the release area as directed by NMOCD (Figure 3). The area around SB- Pt. 3 and SB- Pt. 5 was excavated to 50 ft x 35 ft x 5 ft and 164 ft x 25 ft x 5 ft. The remaining release area in the pasture was excavated to 143 ft x 5 ft x 3 ft and the road was excavated to 137 ft x 12 ft x 4 ft. A total of 1,204 yards of excavated soil was disposed of at an NMOCD approved facility. A total of 480 yards of top soil and 720 yards of caliche were imported to the site and a sample of each was taken to a commercial laboratory for analysis. The imported top soil returned a laboratory chloride reading of 64 mg/kg and the imported caliche returned a laboratory chloride reading of 80 mg/kg. The bottom of the excavation around SB-3 and SB-5 was padded with 6 inches of soil devoid of rocks that could cause punctures to the liner, and a 20-mil reinforced poly liner was properly seated into the excavation. The excavation was then backfilled with the clean, imported caliche to 2 ft bgs. The remaining 2 ft was backfilled with the clean, imported top soil to promote vegetative growth.

The excavation in the remainder of the pasture was also backfilled with the clean, imported caliche to 2 ft bgs and topped with 2 ft of clean, imported top soil. The excavation in the road was backfilled entirely with the clean, imported caliche.

Photo documentation of these activities will be found in Appendix C and the Final C-141 will be found in Appendix D.

Conclusion

Quantum has installed a liner over the area with the highest concentrations of chloride. The liner will provide a barrier that will inhibit the movement of chloride through the vadose zone to groundwater. The other two areas encumbered by the leak have been excavated to remove chloride impacted soils and the soil has been replaced with clean, imported soil.

Since Quantum has completed the actions as approved by NMOCD, RECS requests termination status for the site and the approval of the final C-141.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

Sincerely,

Bruce Baker

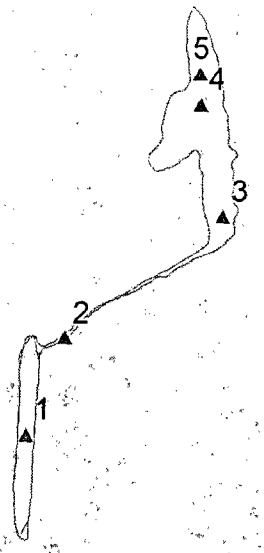
Bruce Baker
Head Foreman
RECS
(575) 631-5157

Attachments:

- Figure 1 – Initial Sampling Data
- Figure 2 – Vertical and Soil Bore Data
- Figure 3 – Excavation Diagram
- Appendix A – Initial Sampling Data
- Appendix B – Soil Bore Installation Data
- Appendix C – Excavation Documentation
- Appendix D – Photo Documentation
- Appendix E – Final C-141

Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293



INITIAL LAB DATA	
Sample Description	Cl-
Pt. 1 surface	19,200
Pt. 2 surface	13,400
Pt. 3 surface	11,600
Pt. 4 surface	13,800
Pt. 5 surface	13,200

Legend

▲ SAMPLE POINT

STAIN (6,000 sq ft)

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

QUANTUM CONOCO 7 ST. #12 AD

API: 3001525160
UL/K SECTION 7
T-19-S R-29-E
EDDY COUNTY, NM

Figure 1

N
W E
S

0 80 160
Feet

GPS date: 1/30/12 by DY
Drawing date: 1/31/12
Drafted by: T. Grieco, L. Weinheimer

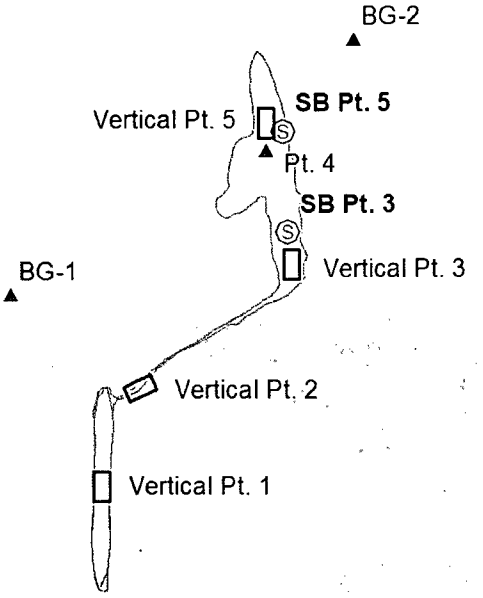
Sample Description	Cl-	PID/TPH
PT. 1 SURFACE	10,222/19,200	24.4
PT. 1 @ 1'	1,926	3.4
PT. 1 @ 2'	4,439	2.9
PT. 1 @ 3'	932	3
PT. 1 @ 4'	201/80	3/163

Sample Description	Cl-	PID/TPH
PT. 2 SURFACE	11,213/13,400	68.5
PT. 2 @ 1'	283	2.1
PT. 2 @ 2'	397	1
PT. 2 @ 3'	788	1.1
PT. 2 @ 4'	513	1.7
PT. 2 @ 5'	325	1.6
PT. 2 @ 6'	420	1.5
PT. 2 @ 7'	283	1.6
PT. 2 @ 8'	232	1.4
PT. 2 @ 9'	198/208	1/37.6

Sample Description	Cl-	PID/TPH
PT. 3 SURFACE	10,897/11,600	88.8
PT. 3 @ 1'	5,920	4.2
PT. 3 @ 2'	2,961	2.9
PT. 3 @ 3'	4,399	1.8
PT. 3 @ 4'	6,876	2
PT. 3 @ 5'	2,493	2.1
PT. 3 @ 6'	1,273	1.6
PT. 3 @ 7'	454	1.6
PT. 3 @ 8'	1,733	1.7
PT. 3 @ 9'	395	1.4
PT. 3 @ 10'	450	2.3
PT. 3 @ 11'	1,241	2.2
PT. 3 @ 12'	927	1.9
PT. 3 @ 13'	397	0.7
PT. 3 @ 14'	294	0.4
PT. 3 @ 15'	242	0.2
PT. 3 @ 16'	2,287	2.5
PT. 3 @ 17'	2,360/8,100	2.8/11.4
PT. 3 @ 18'	2,345	3.3
PT. 3 @ 19'	174	0.9
PT. 3 @ 20'	113/160	0.4/<10

Sample Description	Cl-	PID
BG #1 @ 6"	198	1.3
BG #2 @ 6"	200	1

Sample Description	Cl-	PID/TPH
Pt. 4 SURFACE	9,964/13,800	742.8
Pt. 4 @ 1'	4,173	797.3
Pt. 4 @ 2'	2,866	191.3
Pt. 4 @ 3'	6,218	603.2
Pt. 4 @ 4'	4,023	268.3
Pt. 4 @ 5'	2,951	248.9



Sample Description	Cl-	PID/TPH
PT. 5 SURFACE	10,567/13,200	364.3
PT. 5 @ 1'	9,465	7.7
PT. 5 @ 2'	7,252	9.4
PT. 5 @ 3'	9,284	6
PT. 5 @ 4'	4,832	4.6
PT. 5 @ 5'	5,089	5
PT. 5 @ 6'	9,438	2.7
PT. 5 @ 7'	8,938	4.1
PT. 5 @ 8'	7,144	7.9
PT. 5 @ 9'	3,916	2.5
PT. 5 @ 10'	6,505	6.4
PT. 5 @ 11'	3,950	2.9
PT. 5 @ 12'	2,460	1.6
PT. 5 @ 13'	3,077	1.9
PT. 5 @ 14'	361/400	1/<10
PT. 5 @ 15'	219	0.8
PT. 5 @ 16'	140/112	0.6/<10

Legend

Ⓢ SOIL BORES

STAIN (6,000 sq ft)

▲ SAMPLE POINTS

Cl-/PID FIELD DATA

Cl-/TPH LAB DATA

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

QUANTUM CONOCO 7 ST. #12 AD

API: 3001525160

UL/K SECTION 7

T-19-S R-29-E

EDDY COUNTY, NM

Figure 2

N W E S

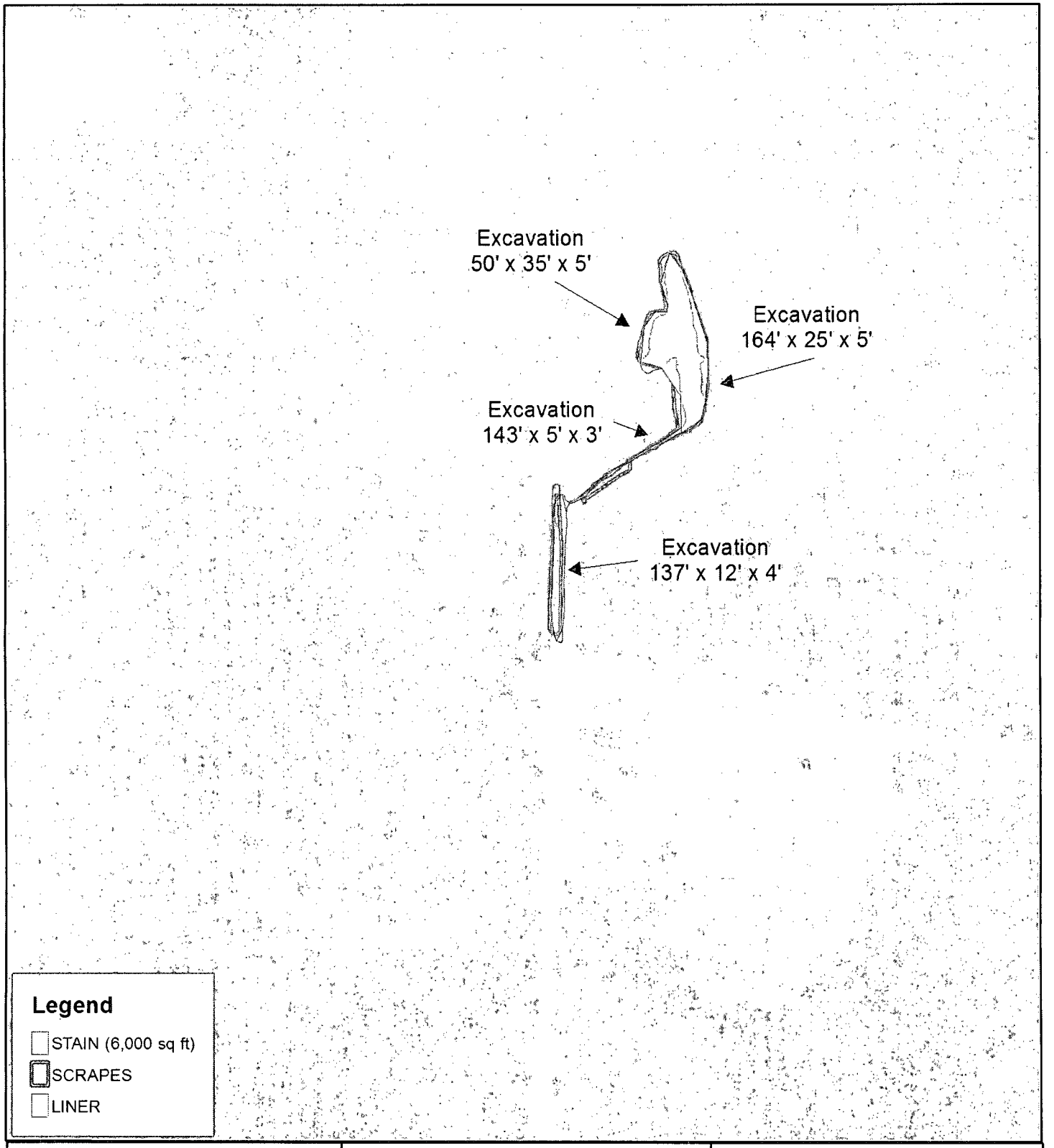
0 80 160

Feet

GPS date: 2/16/12 by DY

Drawing date: 2/17/12

Drafted by: L. Weinheimer



RICE ENVIRONMENTAL
RECS
CONSULTING & SAFETY, LLC

QUANTUM CONOCO 7 ST. #12 AD

API: 3001525160
UL/K SECTION 7
T-19-S R-29-E
EDDY COUNTY, NM

Figure 3

N
W E
S

0 80 160
Feet

GPS date: 2/16/12 by DY
Drawing date: 2/17/12
Drafted by: L. Weinheimer

Appendix A

Initial Sampling Data

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

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
		MODEL: PGM 7320	SERIAL NO: 592-903318

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : HAL-248-100-1	EXPIRATION DATE:7/1/15
METER READING ACCURACY: 100	

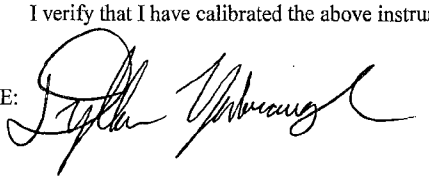
ACCURACY : +/- 2%

COMPANY
QUANTUM

SITE	UNIT	SECTION	TOWNSHIP	RANGE
CONOCO ST. 7 #12	K	7	T-19-S	R-29-E

SAMPLE ID	PID	SAMPLE ID	PID
PT.1 @ 1'	3.4	PT.2 @9'	1
PT.1 @ 2'	2.9	PT.3 @1'	4.2
PT.1 @ 3'	3	PT. 3 @2'	2.9
PT.1 @4'	3	PT.3 @3'	1.8
PT.2 @1'	2.1	PT.3 @4'	2
PT.2 @2'	1	PT.3 @5'	2.1
PT.2 @3'	1.1	PT.3 @6'	1.6
PT.2 @4'	1.7	PT.3@7'	1.7
PT.2 @5'	1.6	PT.3 @8'	1.7
PT. 2 @6'	1.5	PT.3 @9'	1.4
PT.2 @7'	1	PT.3 @10'	2.3
PT.2 @ 8'	1.4	PT.3 @11'	2.2

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

SIGNATURE: 

DATE: 1/31/12

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
	MODEL: PGM ____	SERIAL NO: _____

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

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

ACCURACY : +/- 2%

COMPANY
QUANTUM

SITE	UNIT	SECTION	TOWN SHIP	RANGE
CONOCO ST. 7 #12	K	7	T-19-S	R-29-E

SAMPLE ID	PID	SAMPLE ID	PID
PT.3 @12'	1.9	PT.5 @12'	1.6
PT.5 @1'	7.7	PT.5 @13'	1.9
PT.5 @2'	9.4		
PT.5 @3'	6		
PT.5 @4'	4.6		
PT.5 @5'	5		
PT.5 @6'	2.7		
PT.5 @7'	4.1		
PT.5 @8'	7.9		
PT.5 @9'	2.5		
PT.5 @10'	6.4		
PT.5 @11'	2.7		

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

SIGNATURE: 

DATE: 1/31/12

CARDINAL Laboratories

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

February 01, 2012

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

112 W. TAYLOR

HOBBS, NM 88240

RE: QUANTUM CONOCO 7 #12

Enclosed are the results of analyses for samples received by the laboratory on 01/31/12 16:02.

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
HACK CONDER
112 W. TAYLOR
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	01/31/2012	Sampling Date:	01/30/2012
Reported:	02/01/2012	Sampling Type:	Soil
Project Name:	QUANTUM CONOCO 7 #12	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SAMPLE 1 (H200232-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**19200**	16.0	02/01/2012	ND	416	104	400	0.00	

Sample ID: SAMPLE 2 (H200232-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**13400**	16.0	02/01/2012	ND	416	104	400	0.00	

Sample ID: SAMPLE 3 (H200232-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**11600**	16.0	02/01/2012	ND	416	104	400	0.00	

Sample ID: SAMPLE 4 (H200232-04)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**13800**	16.0	02/01/2012	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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
HACK CONDER
112 W. TAYLOR
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	01/31/2012	Sampling Date:	01/30/2012
Reported:	02/01/2012	Sampling Type:	Soil
Project Name:	QUANTUM CONOCO 7 #12	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SAMPLE 5 (H200232-05)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**13200**	16.0	02/01/2012	ND	416	104	400	0.00	

Cardinal Laboratories *=Accredited Analyte

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

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: RECS		**BILL TO**	ANALYSIS REQUEST
Project Manager:		P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name: Quantum Conoco 7 #12		State: Zip:	
Project Location:		Phone #:	
Sampler Name: Dyllan Yarbrough		Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	
H200232															Cl-
1	Sample 1	G	1			✓							1/30/12	10:00am	✓
2	Sample 2	G	1			✓							1/30/12	10:01am	✓
3	Sample 3	G	1			✓							1/30/12	10:02am	✓
4	Sample 4	G	1			✓							1/30/12	10:03am	✓
5	Sample 5	G	1			✓							1/30/12	10:05am	✓

Relinquished By:	Date: 1/31/12	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
	Time: 4:02		Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: -7°C

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials)

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

#210

CARDINAL Laboratories

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

February 9, 2012

Hack Conder
Rice Environmental Consulting Services
112 W. Taylor
Hobbs, NM 88240

Re: Quantum Conoco 7 St. #12

Enclosed are the results of analyses for samples received by the laboratory on 02/06/12 12:00.

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 524.2	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.

Thank you,

Celey D. Keene
Laboratory Director/Quality Manager

CARDINAL Laboratories

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

ANALYTICAL RESULTS FOR
RICE ENVIRONMENTAL CONSULTING SERVICES
ATTN: HACK CONDER
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 02/06/12
Reporting Date: 02/09/12
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: QUANTUM CONOCO 7 ST #12

Sampling Date: 02/03/12
Sample Type: SOIL
Sample Condition: COOL & INTACT @ -1.5°C
Sample Received By: CK
Analyzed By: MS/AP

LAB NUMBER SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl** (mg/kg)
ANALYSIS DATE	02/08/12	02/08/12	02/07/12
H200287-01 PT 1 @ 4'	<10.0	163	80
H200287-02 PT 2 @ 9'	<10.0	37.6	208
Quality Control	179	224	432
True Value QC	200	200	400
% Recovery	89.5	112	108
Relative Percent Difference	0.6	1.3	3.8

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Std. Methods 4500-Cl⁻B
**Analyses performed on 1:4 w:v aqueous extracts.

Chemist

02/09/12
Date

H200287TCL RECS

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: RECS		BILL TO	
Project Manager: Bruce Baker		P.O. #:	
Address:		Company:	
City: Hobbs	State: NM Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location: Quanah Conoco 7 St. #12		Phone #:	
Sampler Name: J Kimplin		Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS					
H200287-																									
01	Pt 1 @ 4'	G	1			✓					✓		2-3-12	4:20	✓	✓									
02	Pt 2 @ 9'	G	1			✓					✓		2-3-12	4:22	✓	✓									

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:	Date: 2-6-12 Time: 0730	Received By:	Phone Result: ☐ Yes ☑ No	Add'l Phone #:	
Relinquished By:	Date: 2-6-12 Time: 1200	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)	REMARKS: email results	

Zconder@rice-ecs.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com

-1.5°C

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

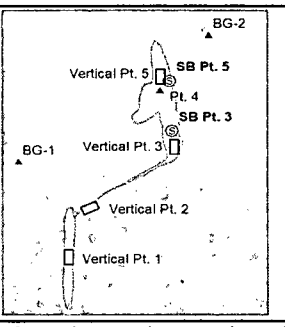
#26

Appendix B

Soil Bore Installation Data

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Logger:	Tony Grieco
Driller:	Harrison & Cooper, Inc.
Drilling Method:	Geo-probe
Start Date:	2/16/2012
End Date:	2/16/2012

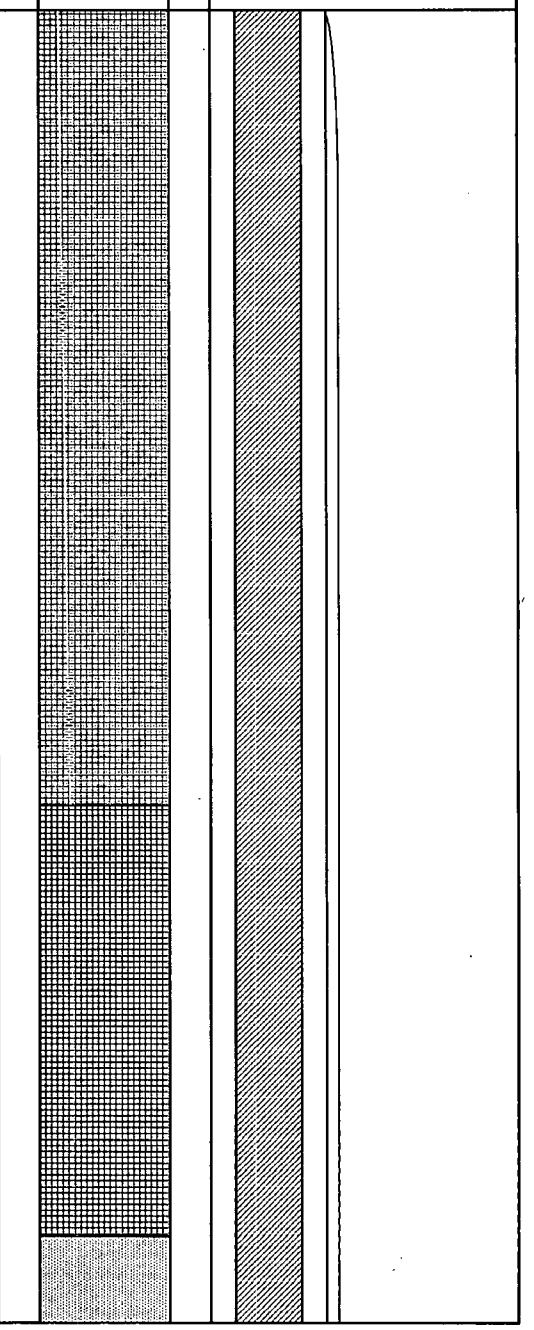


Company: Quantum
Project Name: Conoco 7 St. #12 AD
Well ID: VERTICAL & SB Pt. 3
Project Consultant: RECS

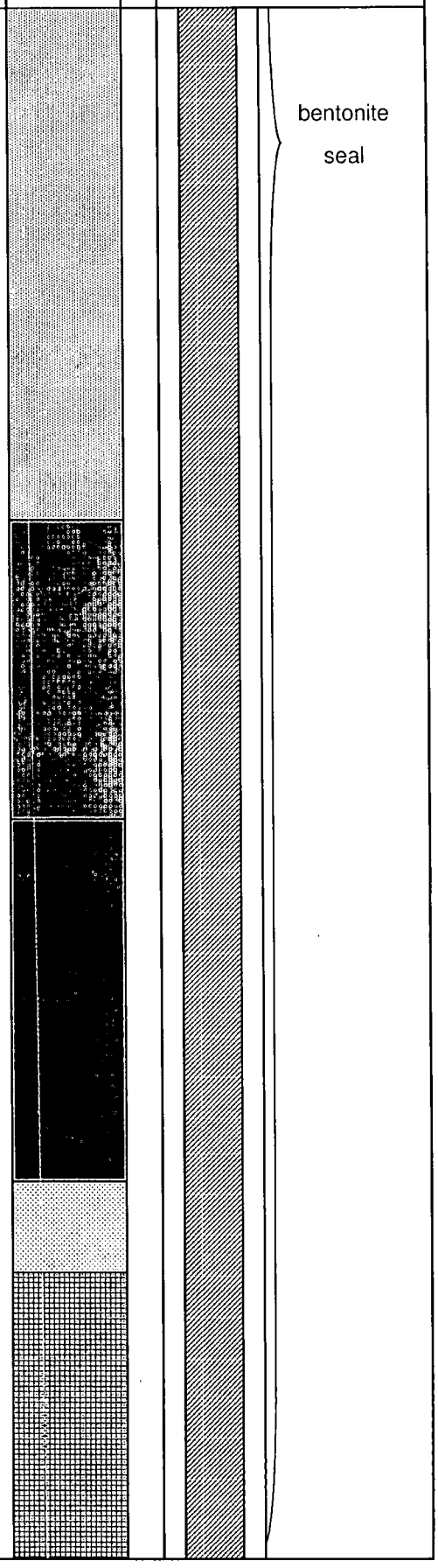
Comments:
Lithology taken from the surface through 20 ft and samples analyzed from 13 ft to 20 ft.
DRAFTED BY: L. Weinheimer
TD = 20 ft GW = 150 ft

Location: UL/K sec. 7 T19S R29E
Lat: 32°40'28.179"N **County**: Eddy
Long: 104°6'56.312"W **State**: NM

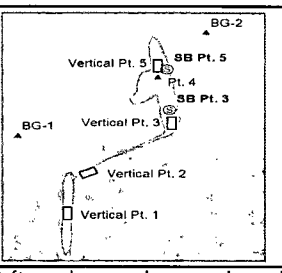
Depth (feet)	Chloride field tests	LAB	PID	Description
0 ft	10897	Cl-11600	88.8	0 - 5 ft Red silt, slightly clayey at top increasing with depth. Unconsolidated and damp. Very scattered caliche fragments (< 2 mm) throughout. No stain or odor.
1 ft	5920		4.2	
2 ft	2961		2.9	
3 ft	4399		1.8	
4 ft	6876		2	
5 ft	2493		2.1	
6 ft	1273		1.6	5 - 8.5 ft Tan clayey silt with larger fragments of caliche (up to 3 cm), decreasing in abundance toward bottom. Damp, no stain, no odor.
7 ft	454		1.6	
8 ft	1733		1.7	
9 ft	395		1.4	



Depth (feet)	Chloride field tests	LAB	PID	Description
10 ft	450		2.3	
				8.5 - 13 ft Red/tan clayey silt, damp, no stain, no odor. Becoming increasingly clayey and more reddish toward bottom. Caliche fragments (to 1 cm) from 11.5 ft to 13 ft.
11 ft	1241		2.2	
12 ft	927		1.9	
13 ft	397		0.7	
14 ft	294		0.4	13 - 15.5 ft Red clayey silt, unconsolidated, damp. No stain or odor.
15 ft	242		0.2	
16 ft	2287		2.5	
				15.5 - 18 ft Dry silt, unconsolidated, lighter red than previously.
17 ft	2360	Cl- 8100	2.8	
		GRO <10		
		DRO <10		
18 ft	2345		3.3	
				18 - 18.3 ft Tan silt, unconsolidated, damp.
19 ft	174		0.9	
				18.3 - 20 ft Brown silty clay, well consolidated, dry.
20 ft	113	Cl- 160	0.4	
		GRO <10		
		DRO <10		



Logger:	Tony Grieco
Driller:	Harrison & Cooper, Inc.
Drilling Method:	Geo-probe
Start Date:	2/16/2012
End Date:	2/16/2012



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC — RECS

Company: Quantum
Project Name: Conoco 7 St. #12 AD **Well ID:** VERTICAL & SB Pt. 5
Project Consultant: RECS

Comments:
Lithology taken from the surface through 13 ft and samples analyzed from 14 ft to 16 ft.

DRAFTED BY: L. Weinheimer

TD = 16 ft GW = 150 ft

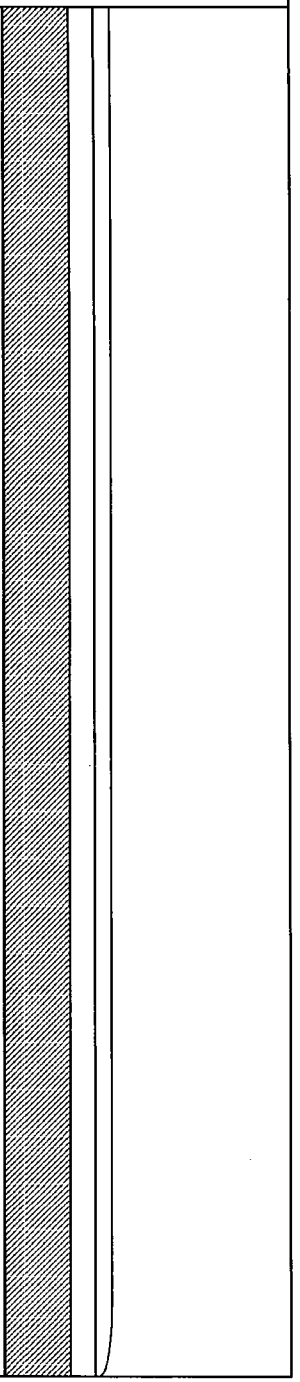
Location: UL/K sec. 7 T19S R29E
Lat: 32°40'28.855"N **County**: Eddy
Long: 104°6'56.35"W **State**: NM

Depth (feet)	Chloride field tests	LAB	PID	Description
0 ft	10567	Cl- 13,200	364.3	0 - 1.5 ft Reddish brown silty clay with large (2 cm) caliche clasts. Unconsolidated, very damp, no stain or odor.
1 ft	9465		7.7	
2 ft	7252		9.4	1.5 - 3.75 ft Reddish brown silty clay. Moderately consolidated, very damp. No stain or odor.
3 ft	9284		6	
4 ft	4832		4.6	3.75 - 4.25 ft Red silty clay. Loosely consolidated, damp.
5 ft	5089		5	4.25 - 8 ft Brownish red clayey silt, damp, loosely. No stain or odor. Abundant caliche fragments (up to 3 cm) throughout.
6 ft	9438		2.7	
7 ft	8938		4.1	
8 ft	7144		7.9	

Lithology

Well Construction

bentonite seal

Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				8 - 12 ft Red slightly clayey silt, unconsolidated with scattered small (< 2 mm) caliche fragments. No stain or odor.		
9 ft	3916		2.5			
10 ft	6505		6.4			
11 ft	3950		2.9			
12 ft	2460		1.6			
13 ft	3077		1.9			
14 ft	361	Cl- 400	1			
		GRO <10		14 - 16 ft Tan unconsolidated dry silt interspersed with thin layers and nodules of brownish red dry consolidated clay. No stain or odor.		
		DRO <10				
15 ft	219		0.8			
16 ft	140	Cl- 112	0.6			
		GRO <10				
		DRO <10				

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	
	MODEL: PGM ____	SERIAL NO: _____	

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : HAL-248-100-1	EXPIRATION DATE: 7/1/15
METER READING ACCURACY: 100	

ACCURACY : +/- 2%

COMPANY
QUANTUM

SITE	UNIT	SECTION	TOWN SHIP	RANGE
Conoco St. 7 #12	K	7	19 S	29 E

SAMPLE ID	PID	SAMPLE ID	PID
Point 5 14'	1.0		
Point 5 15'	0.8		
Point 5 16'	0.6		
Point 3 13'	0.7		
Point 3 14'	0.4		
Point 3 15'	0.2		
Point 3 16'	2.5		
Point 3 17'	2.8		
Point 3 18'	3.3		
Point 3 19'	0.9		
Point 3 20'	0.4		

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

SIGNATURE: Tony C DATE: 2/16/12

CARDINAL Laboratories

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

February 22, 2012

BRUCE BAKER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

112 W. TAYLOR

HOBBS, NM 88240

RE: CONOCO 7 ST. #12

Enclosed are the results of analyses for samples received by the laboratory on 02/17/12 11:25.

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
BRUCE BAKER
112 W. TAYLOR
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	02/17/2012	Sampling Date:	02/16/2012
Reported:	02/22/2012	Sampling Type:	Soil
Project Name:	CONOCO 7 ST. #12	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 5 @ 14' (H200439-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**400**	16.0	02/21/2012	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	02/21/2012	ND	228	114	200	18.3	
DRO >C10-C28	<10.0	10.0	02/21/2012	ND	221	110	200	12.6	

Surrogate: 1-Chlorooctane	*97.4 %*	*55.5-154*
Surrogate: 1-Chlorooctadecane	*108 %*	*57.6-158*

Sample ID: PT. 5 @ 16' (H200439-02)

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	02/21/2012	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	02/21/2012	ND	228	114	200	18.3	
DRO >C10-C28	<10.0	10.0	02/21/2012	ND	221	110	200	12.6	

Surrogate: 1-Chlorooctane	*90.3 %*	*55.5-154*
Surrogate: 1-Chlorooctadecane	*103 %*	*57.6-158*

Cardinal Laboratories

*=Accredited Analyte

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
BRUCE BAKER
112 W. TAYLOR
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	02/17/2012	Sampling Date:	02/16/2012
Reported:	02/22/2012	Sampling Type:	Soil
Project Name:	CONOCO 7 ST. #12	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 3 @ 17' (H200439-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**8100**	16.0	02/21/2012	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	02/22/2012	ND	220	110	200	3.77	
DRO >C10-C28	**11.4**	10.0	02/22/2012	ND	205	102	200	5.78	

Surrogate: 1-Chlorooctane	*73.1 %*	*55.5-154*
Surrogate: 1-Chlorooctadecane	*75.7 %*	*57.6-158*

Sample ID: PT. 3 @ 20' (H200439-04)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	02/21/2012	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	02/21/2012	ND	228	114	200	18.3	
DRO >C10-C28	<10.0	10.0	02/21/2012	ND	221	110	200	12.6	

Surrogate: 1-Chlorooctane	*93.2 %*	*55.5-154*
Surrogate: 1-Chlorooctadecane	*102 %*	*57.6-158*

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:	RECS	**BILL TO**	
Project Manager:	Bruce Baker	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	Conoco 7 St #2	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Bruce Baker	Fax #:	

FOR LAB USE ONLY				MATRIX							PRESERV			SAMPLING		ANALYSIS REQUEST											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Cl -	TPH 8015 m											
H200439																											
1	Pit 5 @ 14'	G	1			✓							2/16/12	12:40pm	✓	✓											
2	Pit 5 @ 16'	G	1			✓					✓		2/16/12	12:50pm	✓	✓											
3	Pit 3 @ 17'	G	1			✓					✓		2/16/12	12:35pm	✓	✓											
4	Pit 3 @ 20'	G	1			✓					✓		2/16/12	12:35pm	✓	✓											

Relinquished By:	Date: 11:25 AM	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Bruce Baker	Time: 2-17-12	Jodi Henson	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Mack Conder, Bruce Baker, Lora Weinheimer, Zach Conder
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: -14°C

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials)

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

#26

Appendix C

Excavation Documentation

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

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: 590-000183

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO :HAL -248-100-1	EXPIRATION DATE:7-1-15
METER READING ACCURACY:100.1 PPM	

ACCURACY : +/- 2%

COMPANY
QUANTUM

SITE	UNIT	SECTION	TOWN SHIP	RANGE
CONOCO 7 ST. #12 AD	K	7	19-S	29-E

SAMPLE ID	PID	SAMPLE ID	PID
IMPORTED TOP SOIL	0.5		

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

SIGNATURE:

DATE: 3/8/12

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: 590-000183

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO :HAL-248-100-1	EXPIRATION DATE: 7-1-15
METER READING ACCURACY: 100.1 PPM	

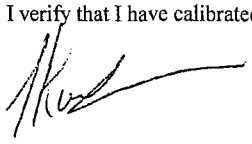
ACCURACY : +/- 2%

COMPANY
QUANTUM

SITE	UNIT	SECTION	TOWN SHIP	RANGE
CONOCO 7 ST. #12 AD	K	7	19-S	29-E

SAMPLE ID	PID	SAMPLE ID	PID
IMPORTED CALICHE	0.8		

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

SIGNATURE: 

DATE: 3/9/12

CARDINAL Laboratories

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

March 13, 2012

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

112 W. TAYLOR

HOBBS, NM 88240

RE: CONOCO 7 ST. #12

Enclosed are the results of analyses for samples received by the laboratory on 03/08/12 9:30.

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 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,

Hope S. Moreno

Hope Moreno

Inorganic Technical Director

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	03/08/2012	Sampling Date:	03/07/2012
Reported:	03/13/2012	Sampling Type:	Soil
Project Name:	CONOCO 7 ST. #12	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: IMPORTED TOPSOIL (H200610-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	03/12/2012	ND	432	108	400	3.64	

Cardinal Laboratories

*=Accredited Analyte

Hope S. Moreno

Hope Moreno, Inorganic Technical Director

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

Hope S. Moreno

Hope Moreno, Inorganic Technical Director

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Burs	BILL TO	P.O. #:	
Project Manager: Mark Londo		Company:	
Address:		Attn:	
City: State: Zip:		Address:	
Phone #: Fax #:		City:	
Project #: Project Owner:		State: Zip:	
Project Name: Hamilton		Phone #:	
Project Location: Conoco, 7 St. #12 AD		Fax #:	
Sampler Name: Mark Londo			

ANALYSIS REQUEST

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	
H200610															
1	Expected byp. Soil	G	1			✓							3-7-12	10:45	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and clients exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. 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:	Date: 3-8-12	Received By:	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
	Time: 9:30		Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Mark, Zak, Bruce, Lara	
	Time:			
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 3°C	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)		

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

CARDINAL Laboratories

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

March 14, 2012

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

112 W. TAYLOR

HOBBS, NM 88240

RE: CONOCO 7 ST. #12

Enclosed are the results of analyses for samples received by the laboratory on 03/14/12 8:10.

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
HACK CONDER
112 W. TAYLOR
HOBBS NM, 88240
Fax To: (575) 397-1471

Received:	03/14/2012	Sampling Date:	03/09/2012
Reported:	03/14/2012	Sampling Type:	Soil
Project Name:	CONOCO 7 ST. #12	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: 8 PT IMPORTED CALICHE (H200638-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	03/14/2012	ND	416	104	400	3.92	

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

Company Name:	BILL TO
Project Manager:	P.O. #:
Address:	Company:
City: State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location:	Phone #:
Sampler Name:	Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	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
H200638-1	Ext Exposed Cable	C	1			X					X		3-9-12	11:00

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:	Date: 3-14-12 Time: 7:30	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: 3/14/12 Time: 8:10	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)	REMARKS:

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

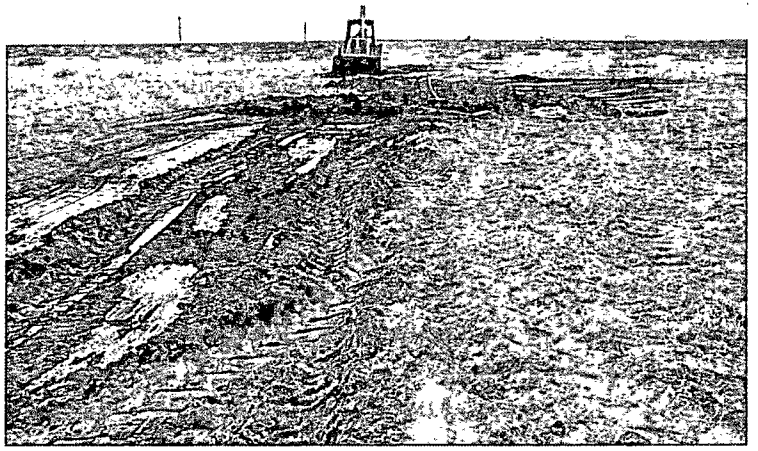
Appendix D

Photo Documentation

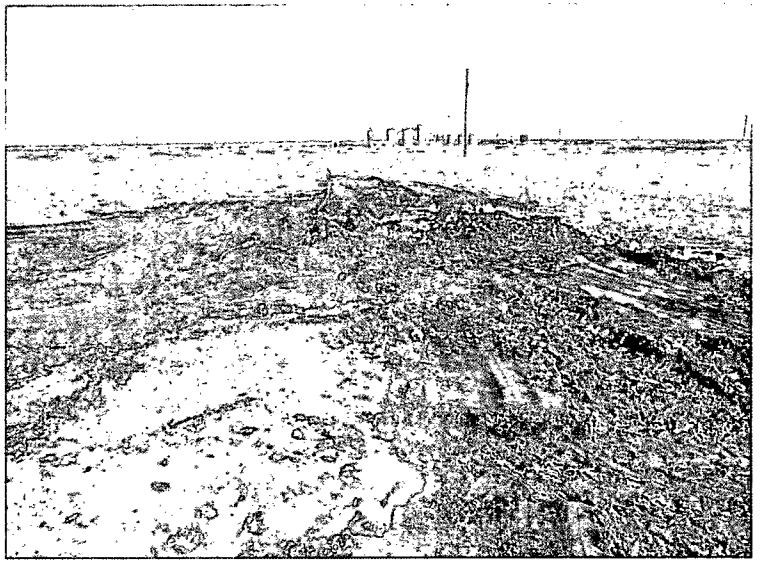
RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Quantum Conoco 7 St. #12 AD

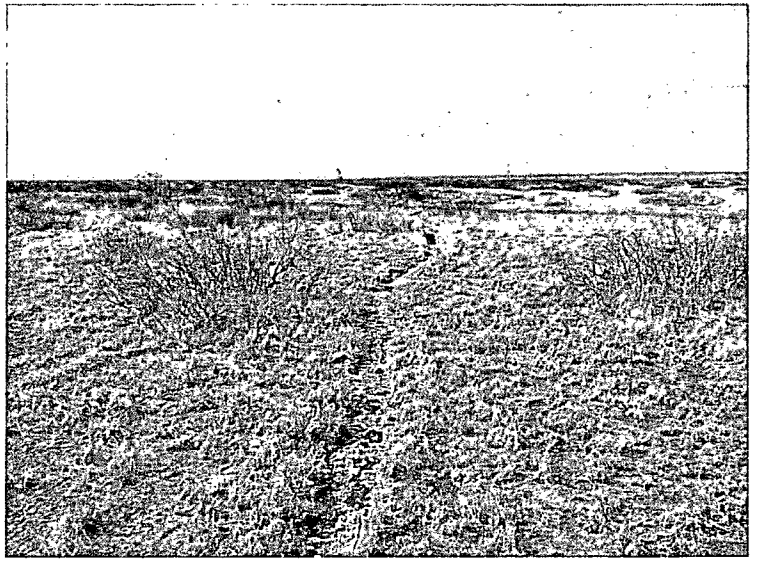
Unit K, Section 7, T19S, R29E



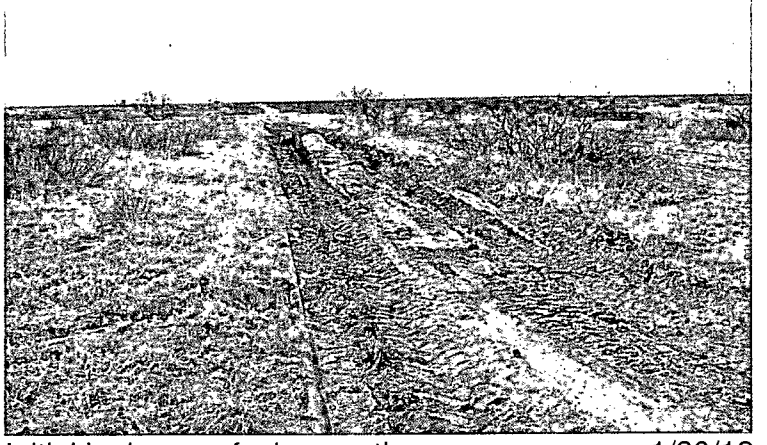
Initial leak area, facing south 1/30/12



Initial leak area, facing north 1/30/12

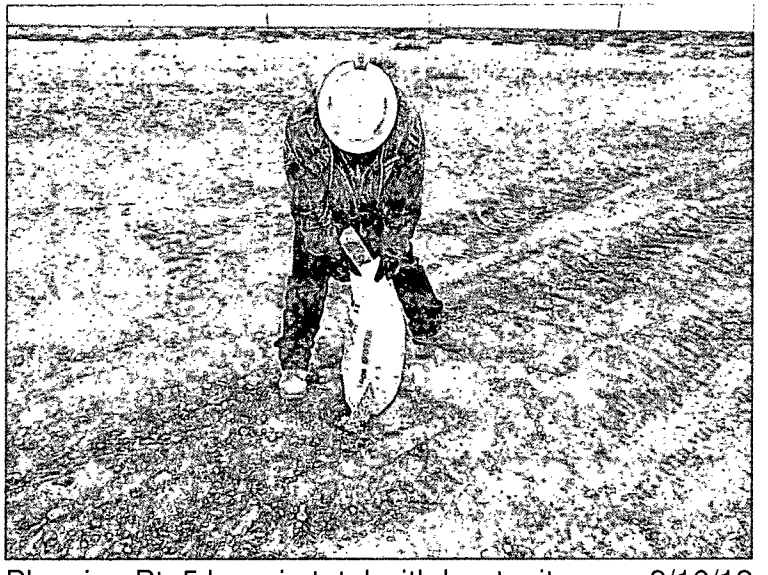


Initial leak area, facing west 1/30/12



Initial leak area, facing south 1/30/12

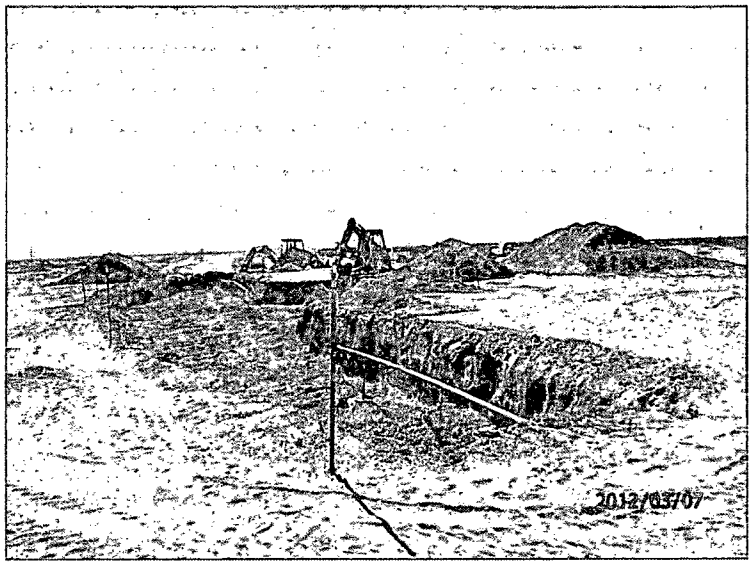
Geo-probe at Pt. 5, facing north 2/16/12



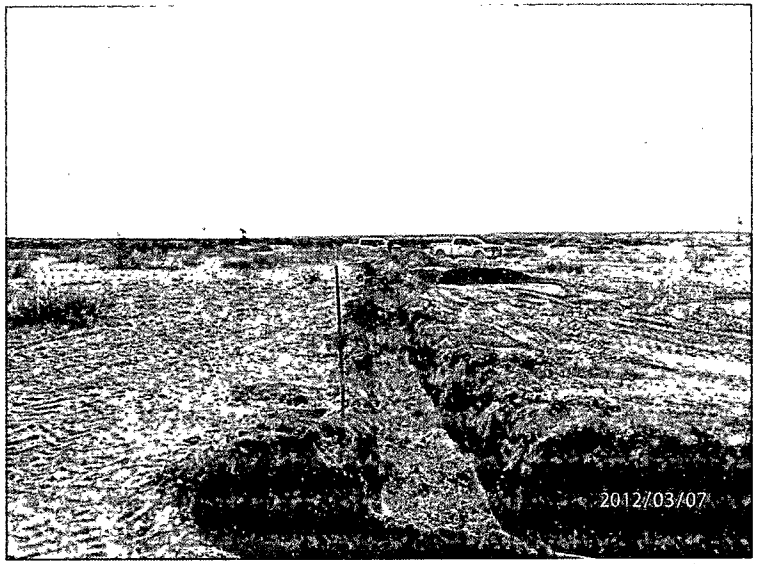
Plugging Pt. 5 bore in total with bentonite 2/16/12

Geo-probe at Pt. 3, facing west 2/16/12

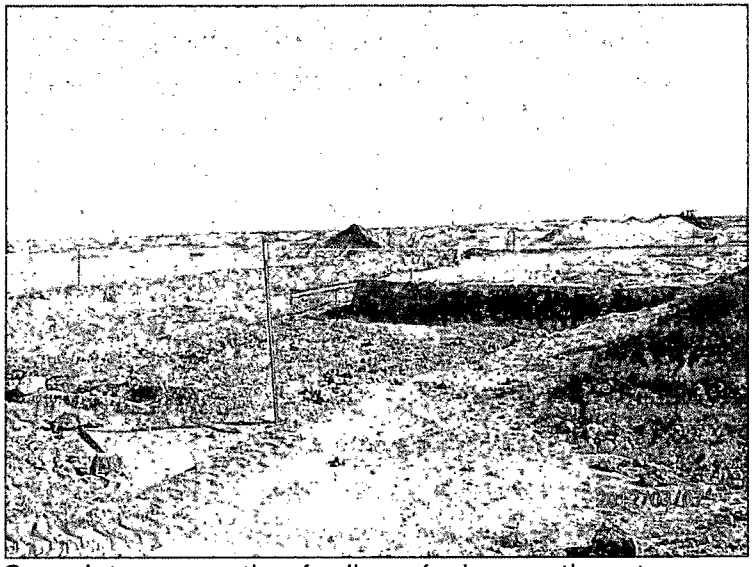
Plugging Pt. 3 bore in total with bentonite 2/16/12



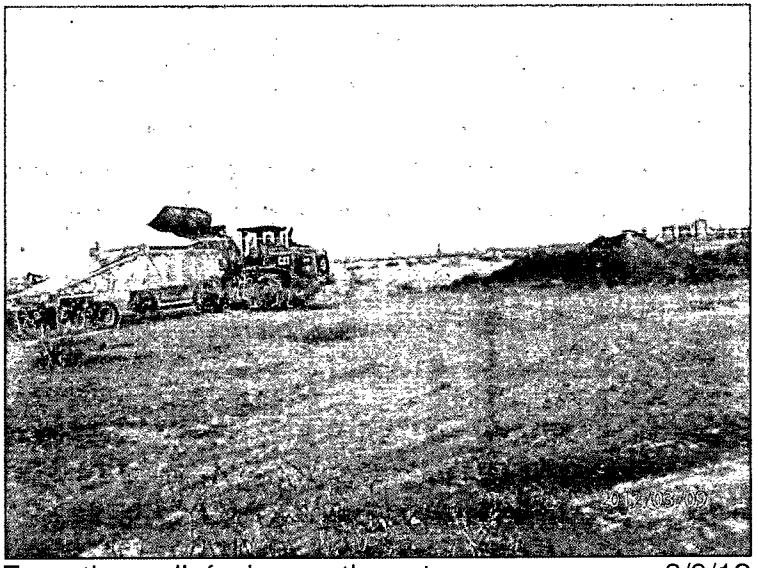
Excavating the site for liner installation, facing south-west 3/7/12



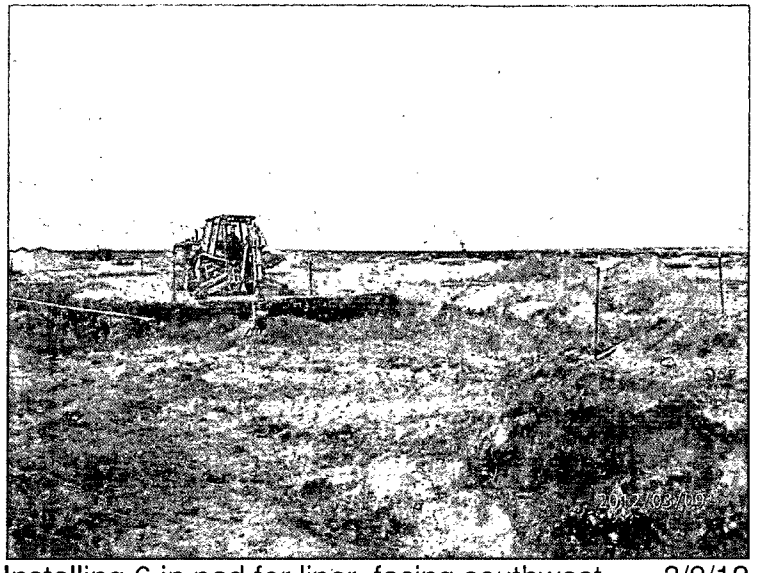
Excavation of remaining release, facing west 3/7/12



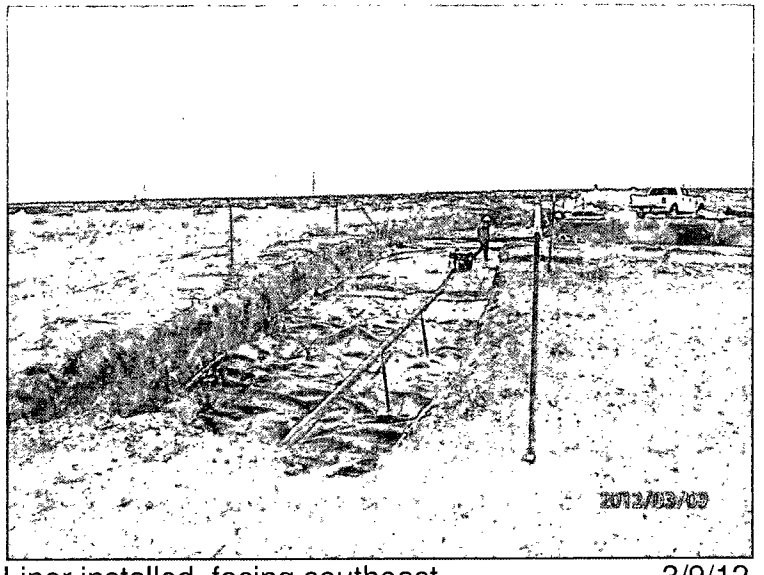
Complete excavation for liner, facing southeast 3/7/12



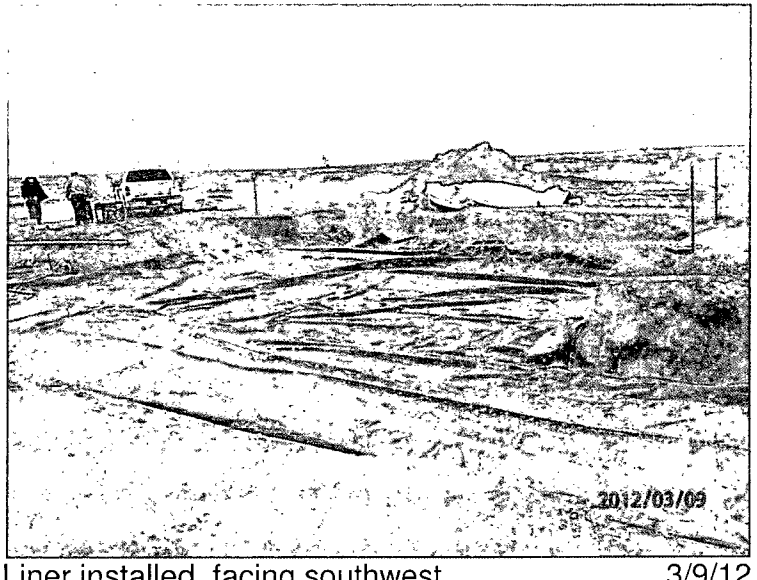
Exporting soil, facing northwest 3/9/12



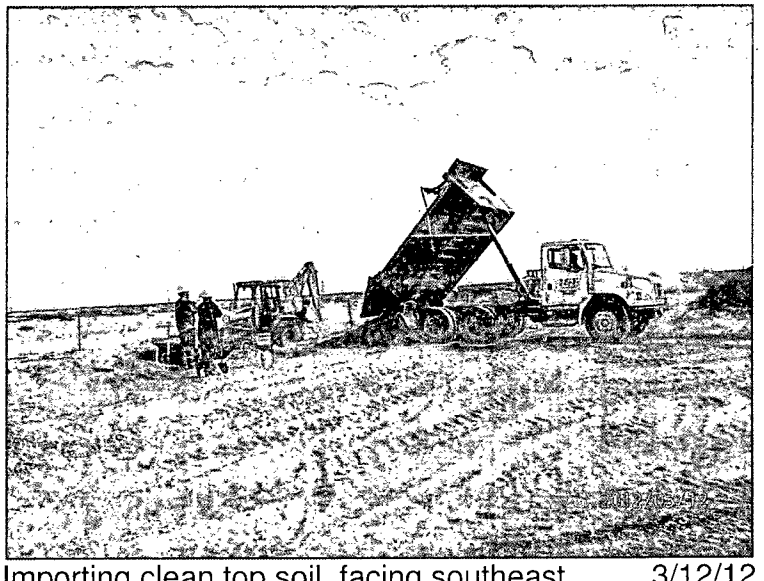
Installing 6 in pad for liner, facing southwest 3/9/12



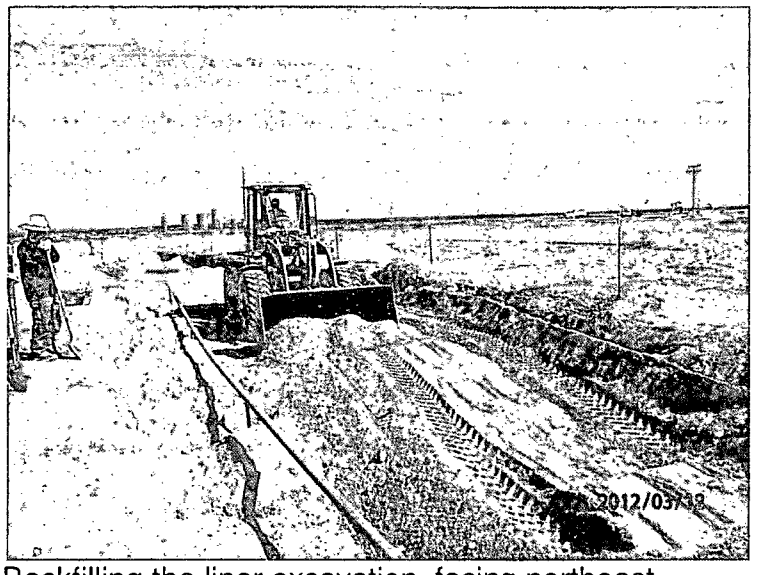
Liner installed, facing southeast 3/9/12



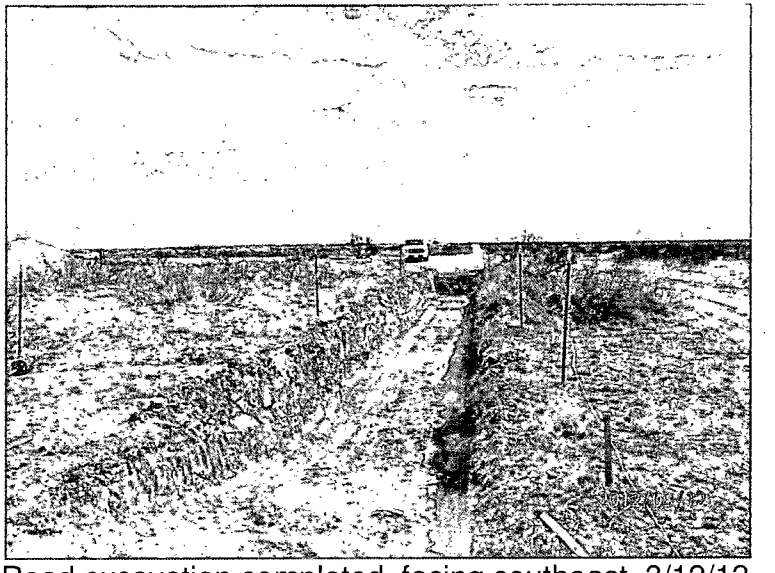
Liner installed, facing southwest 3/9/12



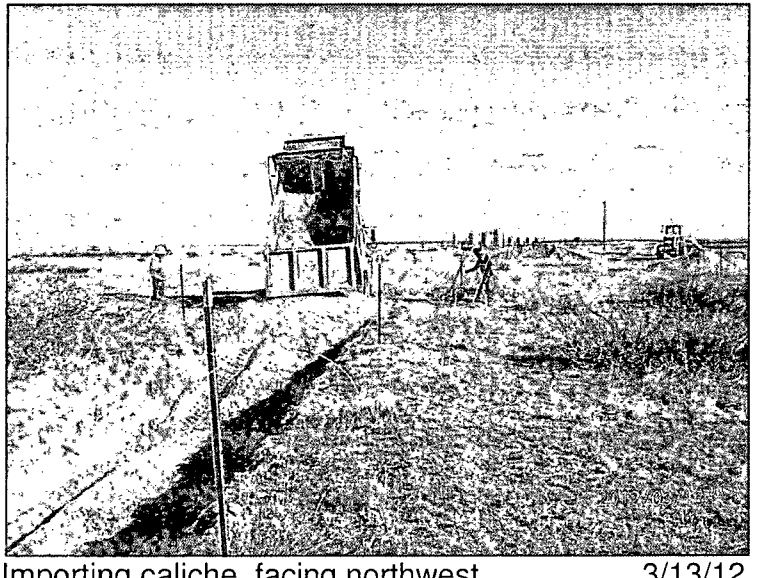
Importing clean top soil, facing southeast 3/12/12



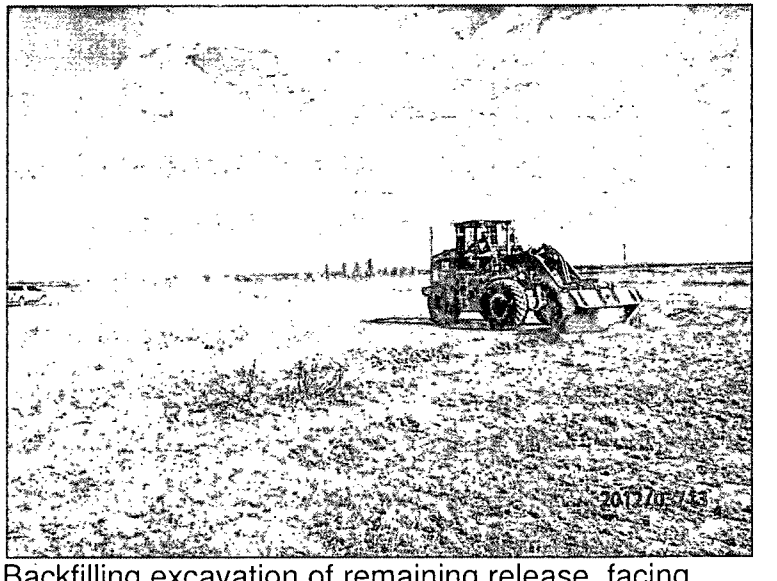
Backfilling the liner excavation, facing northeast 3/12/12



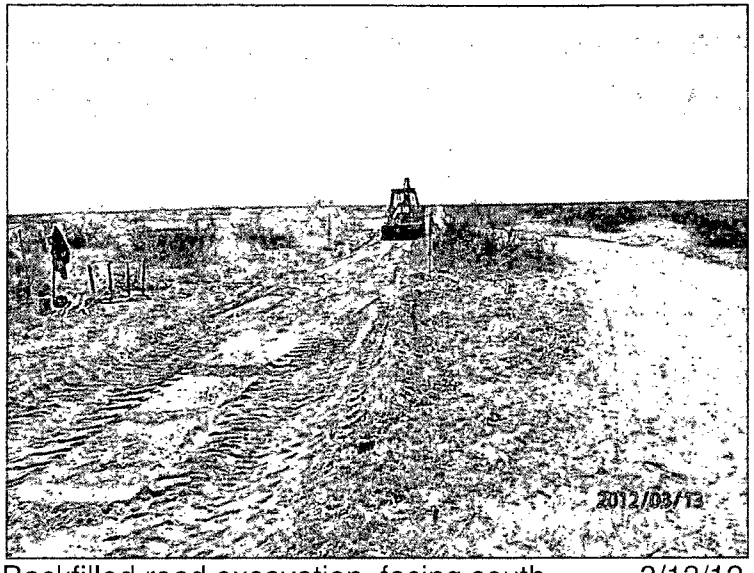
Road excavation completed, facing southeast 3/12/12



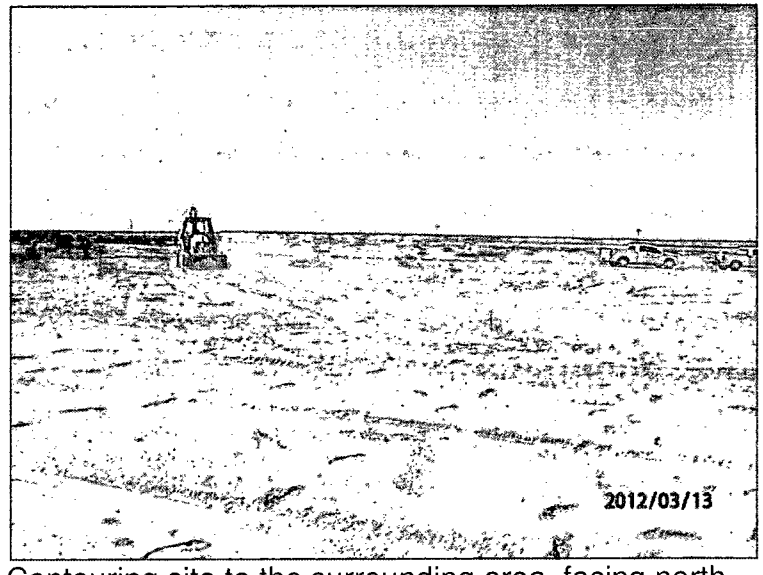
Importing caliche, facing northwest 3/13/12



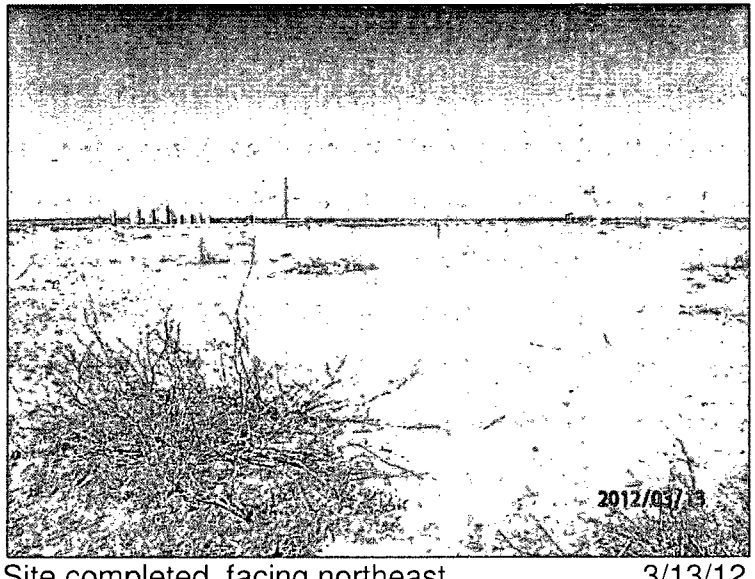
Backfilling excavation of remaining release, facing northeast 2/13/12



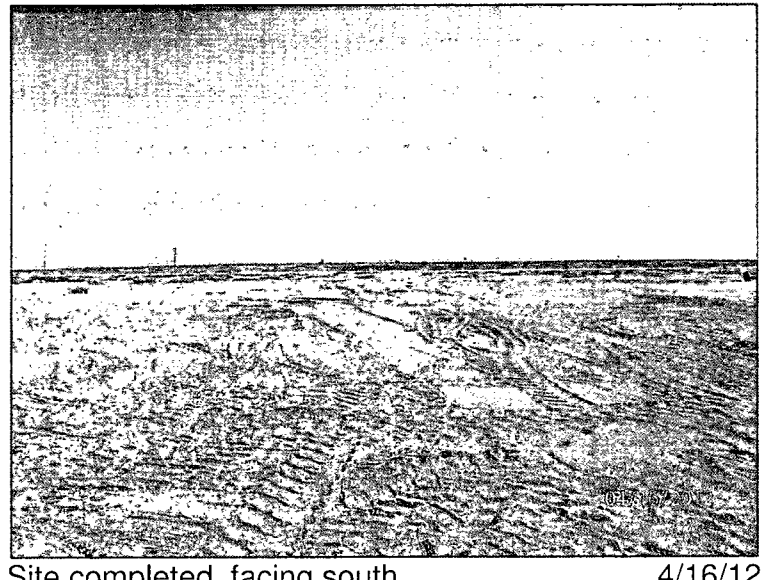
Backfilled road excavation, facing south 3/13/12



Contouring site to the surrounding area, facing north-west 3/13/12



Site completed, facing northeast 3/13/12



Site completed, facing south 4/16/12

Appendix E

Final C-141

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED
MAY 23 2012
NMOCD ARTESIA

Form C-141
Revised August 1, 2011

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Quantum Resources Management, LLC.	Contact Martin Williams
Address 4000 N. Big Spring, Suite 305, Midland, TX 79705	Telephone No. 432-269-8667
Facility Name Conoco 7 State #12	Facility Type WIW

Surface Owner State	Mineral Owner State	API No. 30-01525160

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	7	19S	29E	1880'	South	1980'	West	Eddy

Latitude 32° 40' 28.728" **Longitude** 104° 6' 56.492"

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 20 to 40 bbls	Volume Recovered 0 bbls
Source of Release Water injection line	Date and Hour of Occurrence 1/29/2012 2:15 pm	Date and Hour of Discovery 1/29/2012 2:15 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD Mike Bratcher (voicemail)	
By Whom? Hack Conder	Date and Hour 1/30/2012 4:00 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The injection line ruptured. The line was repaired.

Describe Area Affected and Cleanup Action Taken.* The total affected area spans 6,000 ft² which included 4,583 ft² of pasture and 1,417 ft² of area along a two track dirt road. Trenches and soil bores were installed at the site to determine the vertical extent of the release. The area around SB- Pt. 3 and SB- Pt. 5 was excavated to 5 ft bgs and a 20-mil reinforced poly liner was properly seated. The excavation was backfilled with clean, imported caliche to 2 ft bgs then topped with 2 ft of clean, imported top soil. The remaining release area in the pasture was excavated to 3 ft bgs and the road was excavated to 4 ft bgs. All the excavated soil was disposed of at a NMOCD approved facility. The remaining release area in the pasture was backfilled to 2 ft bgs with clean, imported caliche and topped with clean, imported top soil. The road excavation was backfilled entirely with clean caliche.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Martin Williams	OIL CONSERVATION DIVISION
Printed Name: Martin Williams	Approved by District Supervisor:
Title: Safety and Environmental Coordinator	Approval Date: / Expiration Date:
E-mail Address: Mwilliams@qracq.com	Conditions of Approval: / Attached ☐
Date: 5/21/2012 Phone: 432-269-8667	

* Attach Additional Sheets If Necessary