1R-488

REPORTS

DATE:

6-10-10

505 N Big Spring, Suite 404 Midland, Texas 79701 Tel: 432-634-9257 E-mail: lpg@texerra.com

AHS

June 10th, 2010

Mr. Edward Hansen New Mexico Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87504

RE: Corrective Action Plan Amendments – Preliminary Report

Vanguard Natural Resources LLC ABO F-31 SWD UL F Sec 31 T 16S R 37E

NMOCD Case Number: 1R 488

Sent via E-mail & U.S. Certified Mail w/ Return Receipt 7007 0710 0003 0305 3866

Dear Mr. Hansen:

We have completed the investigative field work specified in the Corrective Action Plan Amendments of February 2nd, 2010 for this location. The results of this work entailed evaluating soils from four soil borings and installing two monitor wells (Figure 1), and are summarized below:

Residual Soil Chloride and Petroleum Hydrocarbon Concentrations

Referring to the attached soil boring logs, please note the following:

- Residual soil chloride concentrations from an up-gradient soil boring (SB-11) declined from approximately 1,500 ppm to less than 250 ppm at the limit of drilling, 90 ft bgs. Residual soil hydrocarbon concentrations were negligible (< 2.5 ppm throughout) as measured by a field PID meter.
- Residual soil chloride concentrations from a down-gradient soil boring (SB-12) were less than 250 ppm throughout the depth of drilling, 90 ft bgs. Residual soil hydrocarbon concentrations were also negligible throughout this soil bore (< 3.0 ppm throughout) as measured by a field PID meter.
- Residual soil chloride concentrations from a monitor well bore advanced near the former SWD well (MW-1) declined from approximately 1,200 ppm near the surface to less than 250 ppm at the limit of drilling of 90 ft bgs. Residual soil hydrocarbon concentrations were moderately elevated in the midrange of the soil bore, indicating a value of approximately 54 ppm as measured by a field PID meter and corroborated by laboratory analysis. However, residual hydrocarbon concentrations dropped below 10 ppm at 60 ft bgs and remained below 5 ppm at 80 and 90 ft bgs.
- Residual soil chloride concentrations from a monitor well bore down-gradient of the site (MW-2) were less than 200 ppm throughout the limit of drilling at 90 ft bgs. Residual soil hydrocarbon concentrations were negligible (< 2.5 ppm throughout) as measured by a field PID meter.

ABO F-31 SWD

Groundwater Chloride and Petroleum Hydrocarbon Concentrations

Referring to the attached laboratory reports, please note the following:

- Petroleum hydrocarbon concentrations were below the limit of laboratory detection in both monitor wells on both sampling dates (April 26th and May 28th, 2010).
- Groundwater chloride concentrations were low (< 155 ppm on both sampling dates) in the monitor well near the former SWD well, MW-1, but were elevated (1,200 ppm on April 26th and 1,540 ppm on May 28th) in the down-gradient monitor well, MW-2.

Analysis of Results and Recommendations

The low levels of chlorides and the absence of petroleum hydrocarbons in groundwater near the former SWD well (MW-1) indicate that the former SWD well is not a significant source of these contaminants and does not pose a threat to groundwater quality.

The elevated levels of chloride found in the down-gradient monitor well apparently comes from an up-gradient source. We therefore suggest and propose to NMOCD that an up-gradient monitor well be installed to determine if the source of these chlorides is from the ABO F-31 site itself or if it may be from an up-gradient source (perhaps an old drilling pit to the northwest of the former ABO F-31 facility).

We respectfully submit this report for your review and consideration.

Sincerely,

L. Peter Galusky, Jr. Ph.D.

Principal

Copy: Britt Pence, Vanguard Natural Resources LLC

Attachments: Soil boring logs, laboratory results

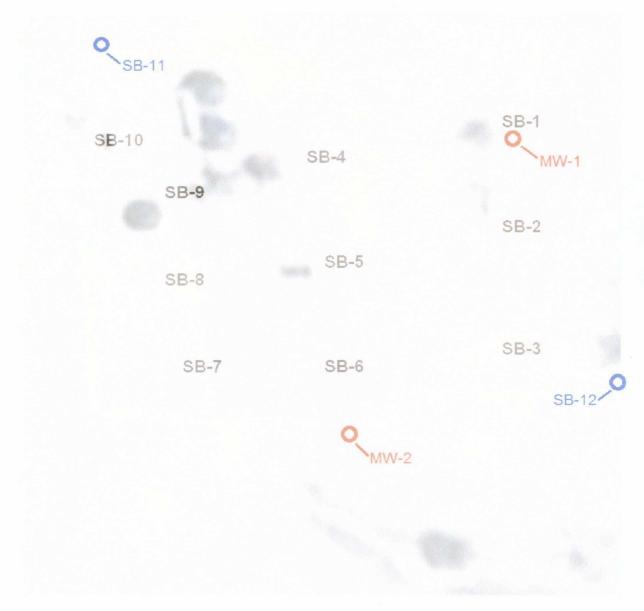


Figure 1 –New monitor well locations (red circles) and soil boring locations (blue circles) referred to in this report.



NMOCD Case No. 1R 488. Vanguard Natural Resources. ABO F-31 Preliminary CAP Report.

Hansen, Edward J., EMNRD <edwardj.hansen@state.nm.us>

Tue, Jun 22, 2010 at 3:26 PM

To: "L Peter Galusky Jr @ Texerra" < lpg.texerra@gmail.com>

Pete.

I received a hard copy of the report, but could you also send a hard copy of the lab results and logs-thanks.

آومادسهدی

Edward J.

PETE 6. 6/23/10

From: |pgalusky@alumni.virginia.edu| [mailto:|pgalusky@alumni.virginia.edu] On Behalf Of L Peter Galusky

Jr @ Texerra

Sent: Monday, June 14, 2010 9:30 AM To: Hansen, Edward J., EMNRD

Subject: Re: NMOCD Case No. 1R 488. Vanguard Natural Resources. ABO F-31 Preliminary CAP Report.

[Quoted text hidden]

[Quoted text hidden]

Logger:	Lara Weinheimer
Driller:	Harrison & Cooper, Inc. Drilling
Consultant:	Texerra
Drilling Method:	Air rotary
Start Date:	4/19/2010
End Date:	4/19/2010
Comments: A	sampled from
cuttings. Locate	ed 154 feet WNW of
the SWD well.	
TD = 90 ft	GW = 94 ft

F31 JCT F31 SWD SB 1 MW 1 SB 10 SB 9 SB 4 SB8 SB5 SB2 SB 7 SB 6 SB 3 SB 12 MW 2 ch

0 2040 80 120 160



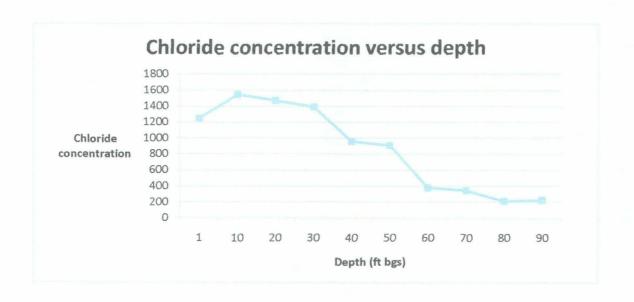
Project Name:

Well ID:

Abo F-31 SWD SB-11 **Location:** UL/F, Sec. 31, T16S, R37E Lat: 32°52'46.89897" N County: Lea Long: 103°17'28.38703" W State: NM

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
1 10	1,247	CF 1,540	0	0 - 10 ft VERY FINE TO FINE SAND; CALICHE brown, dry, no odor		
	4.470			10 - 20 ft		
20	1,470		0.2	VERY FINE TO FINE SAND		
30	1,392		1.1			
						bentonite seal
40	957		1.9			
50	909		1.7	20 - 90 ft VERY FINE TO FINE SAND light brown, dry, no odor		
60	378		2.0			
70	343		0.5			

Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
80	211		0.7			
90	227	СГ 128	1.2	slightly moist		bentonite seal



Logger:	Lara Weinheimer
Driller:	Harrison & Cooper, Inc. Drilling
Consultant:	Texerra
Drilling Method:	Air rotary
Start Date:	4/19/2010
End Date:	4/19/2010
Comments: Al	sampled from
cuttings. Locate	ed 134 feet SSE of the
SWD well.	
TD = 90 ff	GW = 94 ft

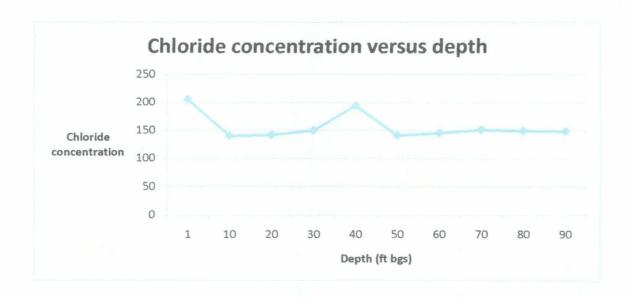
F31 JCT F31 SWD SB 1 SB 10 SB 9 SB 4 SB8 SB5 SB2



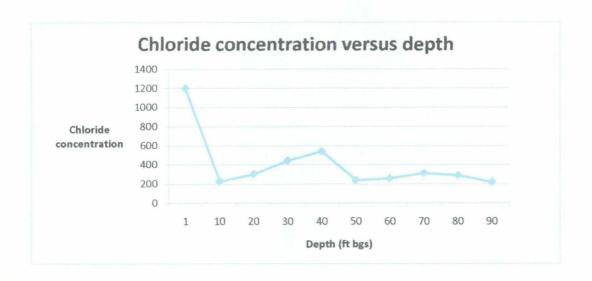
Project Name: Well ID:
Abo F-31 SWD SB-12
Location: UL/F, Sec. 31, T16S, R37E
Lat: 32°52'45.23075" N County: Lea
Long: 103°17'25.95227" W State: NM

TD = 9	0 ft	GW =	94 ft	0 2040 80 120 160	Long: 103°17'25.	95227" W State: NM
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
				0 - 1 ft VERY FINE TO FINE SAND; CALICHE	-	
1	205	Cl ⁻ 48	1.1	brown, dry, no odor		
10	140		2.7	1 - 90 ft		
				VERY FINE TO FINE SAND		
				light brown, slightly moist, no odor		
20	142		0.8			
30	150		0.7			bentonite seal
40	194		0.8			
50	141		0.7			
60	145		0.6			
00	140		0.0			

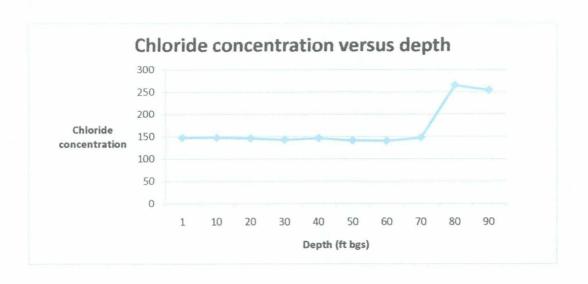
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Bore Construction
70	151		0.7			
80	149		1.0			bentonite seal
90	148	Cl 48	0.4			
NOVER EXECUTE ANY COMPANY						



_ogger:		Lara	Weinheimer			ATINE P	
Oriller:			on & Cooper, c. Drilling	SR 11	DICE OPERATING COMP		DAYA
Consulta	ınt:		Texerra	F31 JCT F31 SWD SB 1 SB 10 SB 9 SB 4			3
Orilling N	/lethod:	А	ir rotary		він	GE 1955	
Start Dat	e:	4/	19/2010	SB 8 SB 5 SB 2			
End Date		4/	19/2010	SB7 SB6 SB3	Project Name:		ell ID:
	ples from cud 11 feet E o	f the S		MW 2 0 2040 80 120 160	Abo F-31 SV Location: UL/ Lat: 32°52'46.4' Long: 103°17'26.	F, Sec. 31, 0953" N	County: LE
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Well Co	onstruction
				0 - 1 ft			concrete pad
				ERY FINE TO FINE SAND; CALICHE			on surface
	4.001	Cl		ERT FINE TO FINE SAND; CALICHE	• • • • • •		on sunace
1	1,201	1,310	1.2	brown, dry, no odor			
					* * * * * *		
10	225		5.7		414141414		
	4-4-0		0.7			0	
						PVC	
				1 - 90 ft		ter	
20	302		9	VERY FINE TO FINE SAND		diameter	
				light brown, dry, no odor		dia	
						4 in	
30	442		12.3				
3 < 0.025		GRO	<10.0				
							bentonite
Γ<0.050		DRO	1,230				seal
40	540		4.7				
50	237		53.7				
3 < 0.025		GRO	<10.0				
T < 0.050	X < 0.300	DRO	1,500				
60	258	CI	30.0				
3 < 0.025	E = 0.083	128 GRO	<10.0				-
< 0.050	X = 0.531	DRO	924				
70	308		6.5				
70	300		0.5				
80	286		4.9				
							١
90	218	CF	1.9	slightly moist			
90	210	128	1.9	anglitty motat			
							sand pack
						134	1
		- 1			10 2 2 2		1



Logger:		Lara	Weinheime	er		ATING C	*
Driller:	Oriller:		on & Coope c. Drilling	SB 11 F31 JCT F31 SWD SB 1	QUE OPER		J. PRAMO
Consult	ant:	-	Texerra	SB 10 SB 9 SB 4 MW 1	4 mm		
Drilling I	Wethod:	А	ir rotary		118	ICE 1955	
Start Dat			19/2010	SB 8 SB 5 SB 2			
End Date			/19/2010	SB 7 SB 6 SB 3 SB 12	Project Name:		ell ID:
	ents: All sa s. Located 1			MW 2	Abo F-31 S Location: UL		MW-2
the SV	/D well.			Feet	Lat: 32°52'45.0	03277" N	County: LE
TD = 1	08 ft	GW =	94 ft	0 2040 80 120 160	Long: 103°17'27	7.03316" W	State: NN
Depth (feet)	chloride field tests (ppm)	LAB	PID	Description	Lithology	Well C	onstruction
				0 - 1 ft	1.11.12.21.1		concrete pad
				VERY FINE TO FINE SAND; CALICHE			on surface
1	147		0.9	dark brown, moist, no odor			
					-1-1-1-1		
10	147	Cl 32	1.2				
		UL.		1 -30 ft		9	
				VERY FINE TO FINE SAND		1 9	
20	146		0.5	light brown, dry, no odor		lete	
			0.0			diameter PVC	
						4 in c	
30	143	_	1.1			4	
30	140		1.1				
							bentonite
40	146		0.8				seal
40	140		0.0				
				30 - 60 ft	* * * * * *		
	141		0.0	VERY FINE TO FINE SAND light reddish brown, dry, no odor			
50	141		0.6	ight rough, brothly dry, no odd.			
60	141		1.0				
00	141		1.0				
70	147		0.6	60 -90 ft		Transcone Control of the Control of	
, ,	1.11		0.0	VERY FINE TO FINE SAND			
				light brown, slightly, no odor			
80	265	CI	0.4				
80	200	208	0.4				
	05:	Cl					
90	254	160	0.2				
							sand pack
100							





April 29, 2010

Hack Conder Rice Operating Company 112 West Taylor Hobbs, NM 88240

Re: ABO F-31 SWD (Revised Report)

Enclosed are the results of analyses for sample number H19706, received by the laboratory on 04/20/10 at 8:00 am.

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 though 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 (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 7 (includes Chain of Custody)

Sincerely,

Celey D.)Keene

Laboratory Director



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: HACK CONDER

112 WEST TAYLOR HOBBS, NM 88240 FAX TO: (575) 397-1471

Receiving Date: 04/20/10

Reporting Date: 04/21/10

Project Owner: NOT GIVEN

Project Name: ABO F-31 SWD

Project Location: ABO F-31 SWD

Analysis Date: 04/20/10 Sampling Date: 04/19/10

Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: JH

Analyzed By: SJ

		CIT :
LAB NO.	SAMPLE ID	(mg/kg)
H19706-1	SB-11 @ 10'	1,540
H19706-2	SB-11 @ 90'	128
H19706-3	MW-1 @ 1'	1,310
H19706-6	MW-1 @ 60'	128
H19706-7	MW-1 @ 90'	128
H19706-8	SB-12 @ 1'	48
H19706-9	SB-12 @ 90'	48
H19706-10	MW-2 @ 10'	32
H19706-11	MW-2 @ 80'	208
H19706-12	MW-2 @ 90'	160
Quality Cont	rol	500
True Value C	C C	500
% Recovery		100
Relative Per	cent Difference	< 0.1

METHOD: Standard Methods 4500-CIB

Note: Analyses performed on 1:4 wtv aqueous extracts.

Not accredited for Chloride.

Chemist

Date

H19706 Rice



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: HACK CONDER 122 W. TAYLOR HOBBS, NM 88240

Receiving Date: 04/20/10 Reporting Date: 04/22/10

Project Number: NOT GIVEN Project Name: ABO F-31 SWD

Project Location: ABO F-31 SWD

Sampling Date: 04/19/10 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received Bv: JH

Analyzed By: AB

GRO DRO (C₆-C₁₀) (>C₁₀-C₂₈) (ma/ka) (mg/ka)

LAB NUMBER SAMPLE ID

ANALYSIS DATE	04/22/10	04/22/10
H19706-4 MW-1 @ 30'	<10.0	1,230
H19706-5 MW-1 @ 50'	<10.0	1,500
		er med er er en er
Quality Control	524	533
True Value QC	500	500
% Recovery	105	107
Relative Percent Difference	2.5	0.6

METHODS: TPH GRO & DRO: EPA SW-846 8015 M. Reported on wet weight. Not accredited for GRO/DRO.

Chemist ;

Date

H19706 T RICE



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: HACK CONDER 112 W. TAYLOR HOBBS, NM 88240

Receiving Date: 04/20/10 Reporting Date: 04/29/10

Project Number: NOT GIVEN Project Name: ABO F-31 SWD

Project Location: ABO F-31 SWD

Sampling Date: 04/19/10 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: JH

Analyzed By: AB

GRO

DRO

(Co-Cno) (>Cno-Cna)

(mg/kg) (mg/kg)

LAB NUMBER	SAMPLE ID
------------	-----------

ANALYSIS DATE	04/29/10	04/29/10
H19706-6 MW-1 @ 60'	<10.0	924
general processing and the second sec	and the second s	o ora rechronos (possos destribus desperante de com
, and the second of the second		maniferrant Mariant and an and a second seco
rg Maria de la comitación de la comitaci		Marine Standarde Marine Contractor Contracto
	anno anno anno anno anno anno anno anno	energi (filozofia) energi energi Energi energi energ
Quality Control	595	598
True Value QC	500	500
% Recovery	119	120
Relative Percent Difference	0.2	1.6

METHODS: TPH GRO & DRO; EPA SW-846 8015 M. Reported on wet weight. Not accredited for GRO/DRO.



ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: HACK CONDER 112 W. TAYLOR HOBBS, NM 88240 FAX TO: (575) 397-1471

Receiving Date: 04/20/10
Reporting Date: 04/29/10*
Project Number: NOT GIVEN
Project Name: ABO F-31 SWD
Project Location: ABO F-31 SWD

Sampling Date: 04/19/10 Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: JH

Analyzed By: ZL

LAB NUMBE SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE	04/20/10	04/20/10	04/20/10	04/20/10
H19706-4 MW-1 @ 30'	<0.025	<0.050	<0.050	<0.300
H19706-5 MW-1 @ 50'	<0.025	<0.050	<0.050	<0,300
H19706-6* MW-1 @ 60'	<0.025	<0.050	0.083	0.531
anna kandan aya sasasaya sasasaya kandan kandan kandan kandan kandan aya kandan kandan kandan kandan kandan ka Kandan kandan kanda	10 mm	ورست و معهده المعادلين و ا	هم المجاوزة والمنافرة المستوالية المستوانية المستوانية المستوانية والمستوانية	ر در در است در میدود در میشود با در در است این از در در است میشود با در در است این در در در در در در در در در در در د
Quality Control	0.047	0.050	0.049	0.145
True Value QC	0.050	0.050	0.050	0.150
% Recovery	94.0	100	98.0	96.7
Relative Percent Difference	1.1	3.6	6.7	8.6

METHOD: EPA SW-846 80218

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES. Reported on wet weight.

* This sample was added and analyzed on 04/28/10. Revised Report.

Chemist

Date'

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

* ARDINAL LABORATORIES

101 East Mariand, Hobbs, NM 36240, 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

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Project Manag	Project Manager: Hack Conder	Colline					P.O. #.	¥.											of the second co		
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Gily: Hobbs		State: NM 21	P: 66240	240			Atm:								uo	*****		بالا موسقتان با	cui scor	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	****
Phone # 393-9174	Charles of the Charle	Fax # 397-1471					Address.								ļu\	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				***************************************	
Project #:	en e	Project Owner:			1		A C				5	M		Н	/ /S			دسست	- providence	 	*********
Project Name:	Project Name: Abo F-31 SWD						State:		Zip:		sər	91	X	d.	uc	##************************************			-		
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Sampler Name	Sampler Name: L. Weinheimer						Fax #:	ŝi			οĮL	3 F	LB	ех	Ö	.	*********	i w Wan na inn	and de la constitución	*******	O-100-1
FOR USE USE ONLY					MATRIX	ΧI	Ω	PRESERV	V SAMPLING	52	C	lc		Θ.	Ð:		نسوب		34. 184 .		
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7	2 se 11 @ 90		ğ.v.	EL SAMO	********	Spinite against		>	4/19/10	00:03	`>										
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3	LI MM-1 @ 30		ń.	acai-si arc	>	- ياسونان		***********	4/19/10			***	**	Į.							
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¢	SB-12@ 1		***	, keda estigai	>			>	4/19/10	THE COURT IS	`>									Andread Standard	ACT TO SERVICE STORY
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2	10 Mw-2 (0) 10				>			>	4/19/10	- 1	`>							-			
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Hoonder@riceswd.com; jpurvis@riceswd.com; Lweinheimer@riceswd.com email results Phone Result: Fax Result: REMARKS: apter - UPS - Bus - Omer.

† Cardinal cannot accept verbal changes. Please fax written changes to 695-393-2016 Received By: keceived By: 4-20-10 Time: Meintelline Sampler - UPS - Bus - Other: Salive and Applicate One) Relindushed By: Relinguisi

OTEX, THE SLAND OF MY PORTED HISTORIE

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79803

(325) 673-7001 FAX (325)673-7020 (505) 393-2326 FAX (505) 393-2476

company wan	company warne: Rice Operating Company	lny								Ä	BILL TO						ANA	ANALYSIS	- 1	REQUEST	ES	A Paris Contraction of the Paris Contraction o			
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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



May 5, 2010

Hack Conder Vanguard 112 West Taylor Hobbs, NM 88240

Re: Vanguard Abo F-31

Enclosed are the results of analyses for sample number H19768, received by the laboratory on 04/28/10 at 10:35 am.

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 though 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 (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 4 (includes Chain of Custody)

Sincerely.

Celey D. Keene

Laboratory Director



ANALYTICAL RESULTS FOR **VANGUARD** ATTN: HACK CONDER 112 W. TAYLOR HOBBS, NM 88240 FAX TO: (575) 397-1471

Receiving Date: 04/28/10 Reporting Date: 04/30/10

Project Number: NOT GIVEN

Project Name: VANGUARD ABO F-31

Project Location: T16S-R37E-SEC31 UNIT F~ LEA CO., NM

Sampling Date: 04/26/10 Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: JH

Analyzed By: ZL

LAB NUMBE SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE	04/30/10	04/30/10	04/30/10	04/30/10
H19768-1 MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
H19768-2 MONITOR WELL #2	<0.001	<0.001	<0.001	<0.003
	0.062	0.050	0.040	
Quality Control	0.053	0.052	0.049	0.154
True Value QC	0.050	0.050	0.050	0.150
% Recovery	106	104	98.0	103
Relative Percent Difference	2.2	<1.0	2.4	3.1

METHOD: EPA SW-846 8021B

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TÓLUENE, ETHYL BENZENE,

AND TOTAL XYLENES.



ANALYTICAL RESULTS FOR VANGUARD ATTN: HACK CONDER 112 WEST TAYLOR HOBBS, NM 88240 FAX TO: (575) 397-1471

Receiving Date: 04/28/10

Reporting Date: 05/04/10

Project Number: NOT GIVEN

Project Name: VANGUARD ABO F-31

Project Location: T16S R37E SEC31 UNIT F LEA COUNTY-NM

Sampling Date: 04/26/10 Sample Type: WATER

Sample Condition: COOL & INTACT

Sample Received By: JH

Analyzed By: HM

	LAB NO.	SAMPLE ID	CI ^T (mg/L)	SO ₄ (mg/L)	TDS (mg/L)
	Analysis Date:		04/29/10	05/03/10	04/28/1
1	H10769 1	MONITOD MELL 44	400	40.0	400

Analysis Date:		04/29/10	05/03/10	04/28/10
H19768-1	MONITOR WELL #1	108	40.2	482
H19768-2	MONITOR WELL #2	1,200	139	2,770
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True Value QC	and the SEC of Manhagement of the Association of the Community of the Comm	500	40.0	NR
% Recovery		98.0	109	NF
Relative Percent	Difference .	2.0	2.5	11.9

METHOD: Standard Methods, EPA 4500-CIB 375.4 160.1

Not accredited for Chloride, Sulfate and TDS.

Chemist

Date

H19768 RICE

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June 4, 2010

Hack Conder Vanguard 112 West Taylor Hobbs, NM 88240

Re: ABO F-31 SWD

Enclosed are the results of analyses for sample number H20007, received by the laboratory on 06/01/10 at 10:04 am.

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 though 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 (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely.

Celey D. Keene

Laboratory Director



ANALYTICAL RESULTS FOR VANGUARD ATTN: HACK CONDER 112 WEST TAYLOR HOBBS, NM 88240

FAX TO: (575) 397-1471

Receiving Date: 08/01/10

Reporting Date: 06/03/10

Project Number: NOT GIVEN

Project Name: ABO F-31 SWD

Project Location: T16S R37E SEC 31 F

Sampling Date: 05/28/10

Sample Type: WATER

Sample Condition: COOL & INTACT @ 4°C

Sample Received By: HM

Analyzed By: HM

		CI ^T	SO ₄	TDS
LAB NO.	SAMPLE ID	(mg/L)	(mg/L)	(mg/L)

Analysis Dale:		06/03/10	06/02/10	06/02/10
H20007-1	MONITOR WELL #1	152	92.6	549
H20007-2	MONITOR WELL #2	1,540	115	4,080
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Quality Control		500	40.8	NR
True Value QC		500	40.0	NR
% Recovery		100	102	NR
Relative Percent	Difference	< 0.1	3.6	6.6

Not accredited for Chloride, Sulfate and TDS.

*Chemist/

Date

H20007 VANGUARD

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES

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

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