1R - 426-150

REPORTS

DATE:

2-5-10

From:	lpgalusky@alumni.virginia.edu on behalf of L Peter Galusky Jr @ Texerra
To:	Edward J. Hansen
Cc:	Katie Jones; Hack Conder
Subject:	NMOCD Case Number 1R 426-150. BD Jct. P-35-1. Rice Operating Company
Date:	Thursday, April 22, 2010 4:21:54 PM
Attachments:	BD Jct P-35-1 Addendum to Termination Request 02.05.10 lpg.pdf BD K-27 & K-27-1 labs.pdf BD K-27 site survey.pdf BD P-35-1 K-27 topo map.pdf BD K-27 MW-2 groundwater data.pdf

Mr. Hansen,

The following information is submitted in support of the remediation Termination Request Addendum for BD Jct. P-35-1 project (NMOCD Case Number: 1R 426-150) submitted to NMOCD on February 5th, 2010 (and attached again, here).

Per your request, we have located an up-gradient groundwater monitor well to compare the baseline regional water quality to that which we have measured at the BD Jct. P-35-1 site. Monitor well (MW-2) at the Rice Operating Company Jct. K-27 location (see attached maps) exhibited a groundwater chloride concentration of 324 ppm on April 8th of this year (see attached laboratory report and groundwater data). This value is indistinguishable (and within normal sampling and laboratory variation) from the average chloride concentration of 338 ppm for groundwater in the down-gradient monitor well at BD Jct. P-35-1. We believe this confirms that groundwater at BD Jct. P-35-1 has not been affected nor is threatened by past operation of the former junction box. We are, therefore, confident that our request for NMOCD to grant "remediation termination" or similar closure status to the BD Jct. P-35-1 project is merited and is supported by hard data.

We appreciate your consideration of this request.

Sincerely,

Peter Galusky
--
L Peter Galusky, Jr. Ph.D. P.G.
Principal
Texerra
505 N. Big Spring, Suite 404
Midland, TX 79701
Tel: 432-634-9257
E-mail: lpg@texerra.com
Web: www.texerra.com

Texerra

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

February 5th, 2010

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: Remediation Termination Request - Addendum
Rice Operating Company – BD SWD System: BD Jct. P-35-1
Unit P, Section 35, T21S, R37E
NMOCD Case Number 1R426-150

Sent via E-mail & U.S. Certified Mail w/ Return Receipt 7007 0710 0003 0305 3804

Mr. Hansen:

In follow-up to the ICP Report and Termination Request that we submitted for this project on July 27, 2009, Rice Operating Company (ROC) has withdrawn groundwater from the near-source monitor well (MW-1) at this location and sampled for chlorides, total dissolved solids (TDS) and petroleum hydrocarbons (as BTEX). In the June 8, 2009 meeting between ROC and the NMOCD, OCD requested that the site be pumped in order to better understand the source of the slightly elevated chloride levels that have been observed (averaging 339 ppm since October 2008). The site location is given in Figures 1 & 2, below.

A total of 208 bbls of groundwater were withdrawn from August through November 2009 (Figure 3). Assuming an aquifer porosity of 30% and a mixing depth of 10 ft, the amount of water withdrawn is equivalent to the removal of all of the groundwater within an 11 ft radius of the well. The location of this monitor well is at/near the up-gradient edge of the former junction box (Figure 4). It would be reasonable to expect that the withdrawal of this much water would entrain a substantial volume of up (and lateral/side) gradient groundwater. Therefore, the analysis of this water would serve to provide an indication of the quality of groundwater that is flowing onto and across the site.

Groundwater chloride concentrations remained relatively constant over the course of groundwater withdrawal, fluctuating within the typically observed range of variation of field sampling and laboratory analysis (Figure 5). This indicates that the former junction box location is not impacting groundwater. It may also be noted that BTEX has never been detected from this site since groundwater sampling was initiated in August of 2008.

We believe that these results support the case for "remediation termination" or similar closure status and respectfully submit these findings for your consideration.

Rice Operating Company is the service provider (agent) for the BD Salt Water Disposal (SWD) System and has no ownership of any portion of pipeline, well or facility. The BD SWD System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

We greatly appreciate your consideration of this request.

Sincerely,

L. Peter Galusky, Jr. Ph.D.

Copy: Rice Operating Company

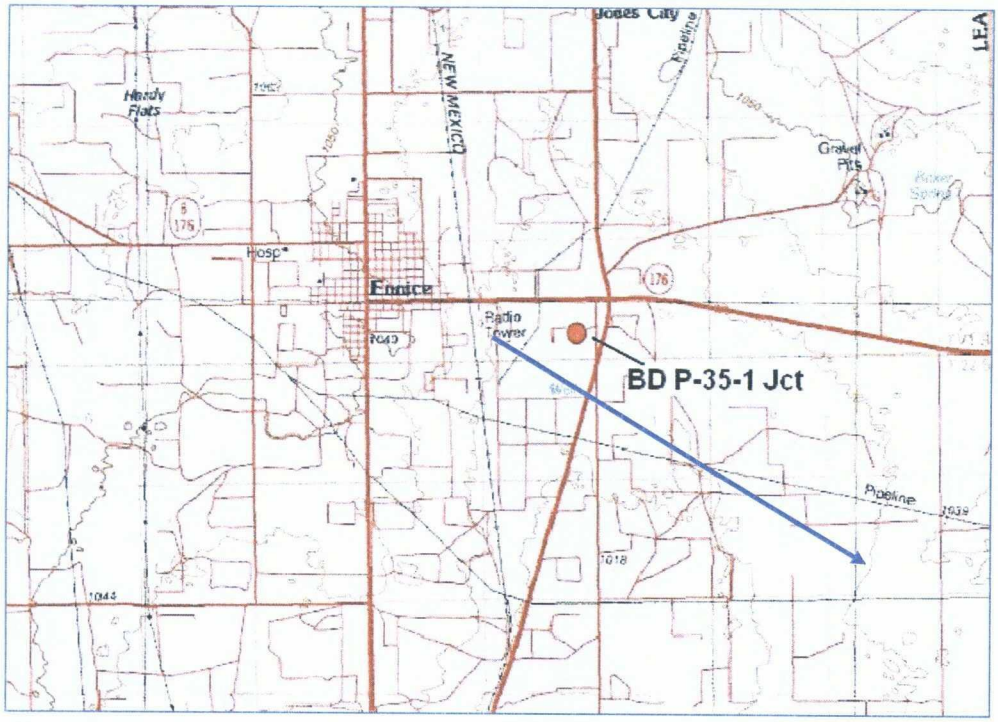


Figure 1 – BD Jct. P-35-1 location on 1:100,000 scale USGS topographic map. The blue arrow shows the presumed direction of groundwater flow (toward the southeast).

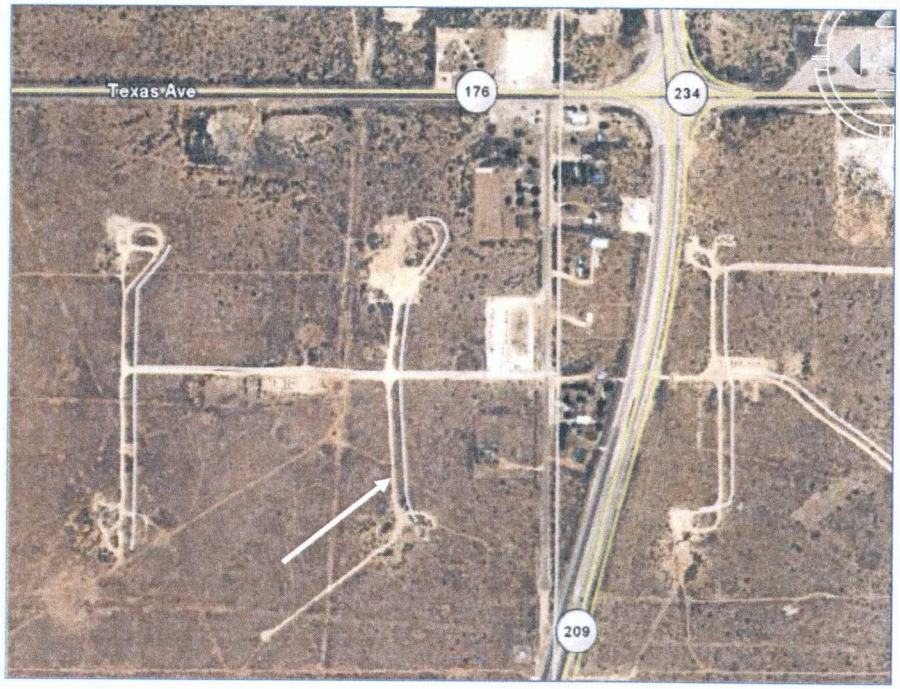


Figure 2 – BD Jct. P-35-1 location shown (white arrow) on aerial photograph.

DATE: As Listed	WELL # /SAMPLE LOCATION	Water Removed (gallons)	
8/9/2009	MW1	390	
8/15/2009	MW1	390	
8/22/2009	MW1	390	
8/29/2009	MW1	390	
9/7/2009	MW1	390	
9/12/2009	MW1	390	
9/20/2009	MW1	420	
9/26/2009	MW1	420	
10/5/2009	MW1	195	
10/9/2009	MW1	215	
10/12/2009	MW1	115	
10/14/2009	MW1	270	
10/16/2009	MW1	300	
10/19/2009	MW1	240	
10/21/2009	MW1	120	
10/23/2009	MW1	315	
10/26/2009	MW1	300	
10/28/2009	MW1	120	
10/30/2009	MW1	300	
11/2/2009	MW1	400	
11/4/2009	MW1	280	
11/9/2009	MW1	300	
11/11/2009	MW1	300	
11/13/2009	MW1	600	
11/16/2009	MW1	300	
11/18/2009	MW1	200	
11/20/2009	MW1	300	
11/23/2009	MW1	200	
11/25/2009	MW1	200	
	Total	**8,750**	**gals**
	"	**208**	**bbls**

Figure 3 – BD Jct. P-35-1 MW-1 pumping log.

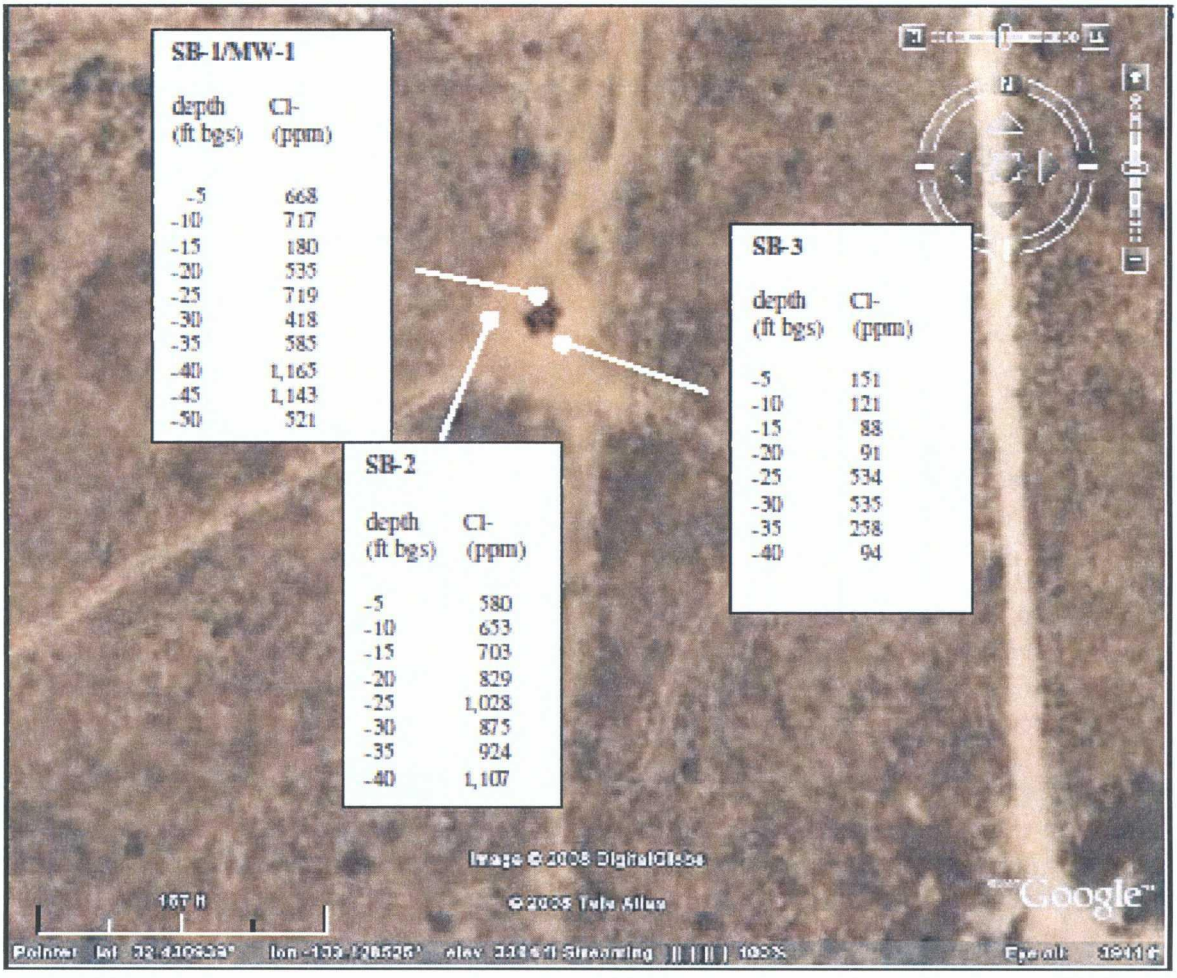


Figure 4 – BD Jct. P-35-1 locations of soil borings and monitor well. Residual soil chloride values measured in September 2008 are shown versus their respective depths.

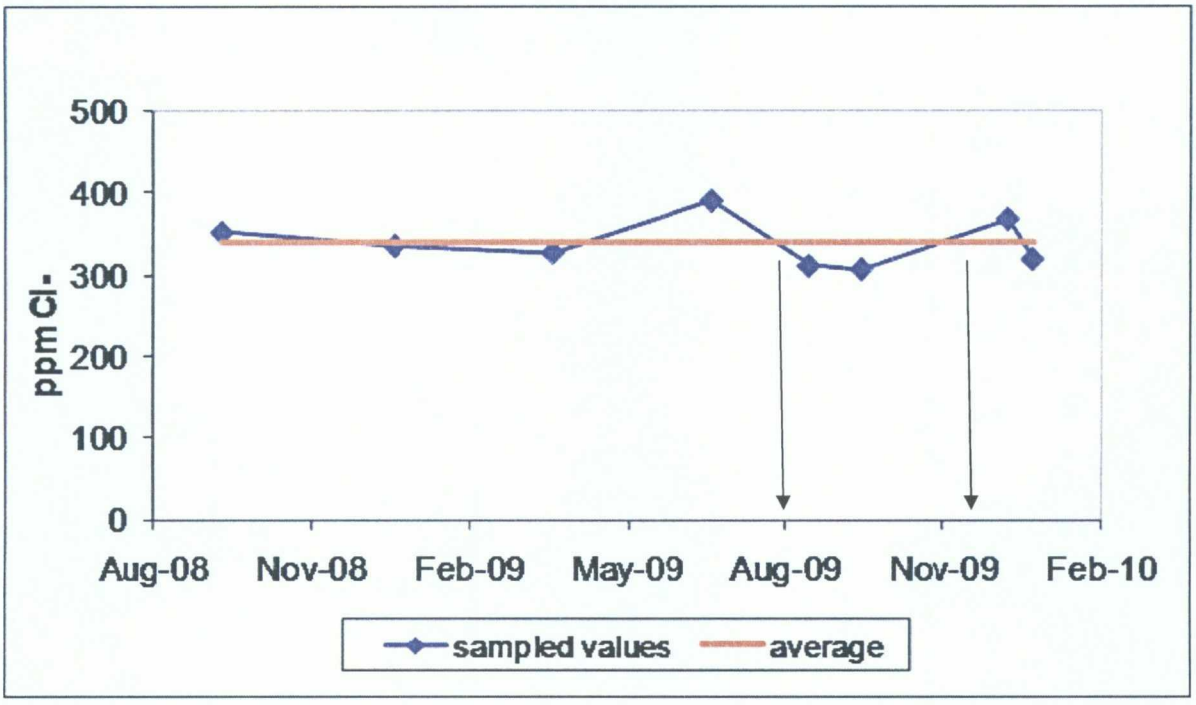
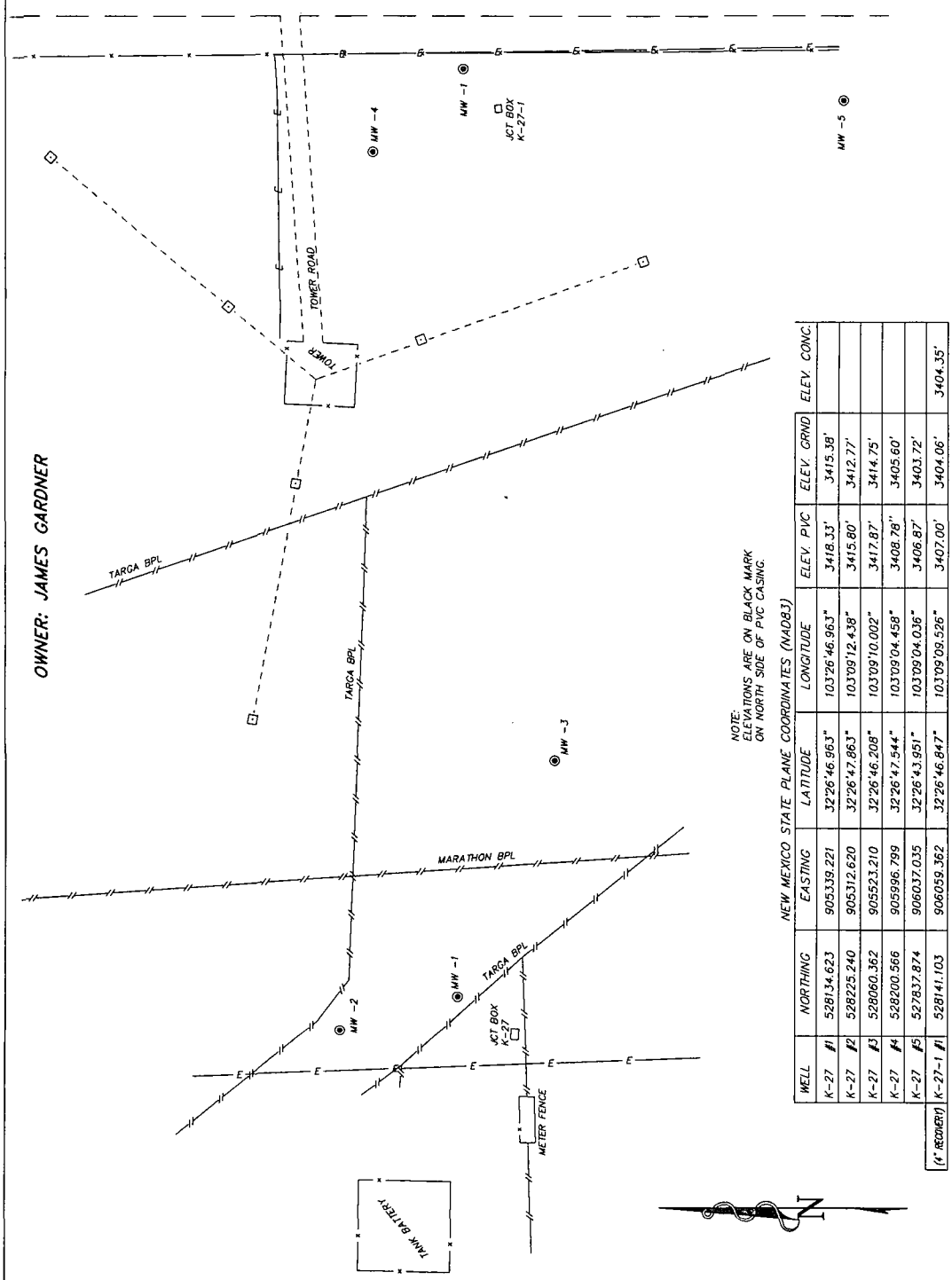


Figure 5 – BD Jct. P-35-1 groundwater chloride concentrations. Arrows indicate dates during which a total of 208 bbls of groundwater were extracted.

SECTION 27, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, **NEW MEXICO.**



NOTE:
ELEVATIONS ARE ON BLACK MARK ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL		NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV. PVC	ELEV. GRND	ELEV. CONC.
K-27	#1	528134.623	905339.221	32°26'46.963"	103°26'46.963"	3418.33'	3415.38'	
K-27	#2	528225.240	905312.620	32°26'47.863"	103°09'12.438"	3415.80'	3412.77'	
K-27	#3	528060.362	905523.210	32°26'46.208"	103°09'10.002"	3417.87'	3414.75'	
K-27	#4	528200.566	905996.799	32°26'47.544"	103°09'04.458"	3408.78"	3405.60'	
K-27	#5	527837.874	906037.035	32°26'43.951"	103°09'04.036"	3406.87'	3403.72'	
(1" RECOVERY)		K-27-1 #1	528141.103	906059.362	32°26'46.847"	103°09'09.526"	3407.00'	3404.06'	3404.35'

100 0 100 200 FEET

SCALE: 1" = 100'

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, N.M. P.S. No. 7977
N.M. L.S. No. 5074

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

RICE OPERATING COMPANY

REF: K-27 AND K-27-1 WELLS

MONITOR WELLS LOCATED IN
SECTION 27, TOWNSHIP 21 SOUTH, RANGE 37 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 21158	Drawn By: J. M. SMALL		
Date: 02-23-2009	Disk: JMS 21158MW	Survey Date: 02-20-2009	Sheet 2 of 2 Sheets

Rice Operating Company
BD Jct. K-27 MW-2
Groundwater Quality Data

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	41.79	50.78	1.4	6	1/15/2009	328	1210	<0.001	<0.001	<0.001	<0.003	202	Sand to clear No odor
2	42.01	51.78	1.6	6	4/21/2009	372	1280	<0.001	<0.001	<0.001	<0.003	197	Sand to clear No odor
2	42.46	51.78	1.5	6	7/16/2009	332	1220	<0.001	<0.001	<0.001	<0.003	181	Sand to clear No odor
2	42.36	51.78	1.5	6	10/6/2009	328	1200	<0.001	<0.001	<0.001	<0.003	155	Sand to clear No odor
2	42.43	51.77	1.5	6	1/5/2010	300	1080	<0.001	<0.001	<0.001	<0.003	130	Sand to clear No odor
2	42.36	51.77	1.5	6	4/8/2010	324	1150	<0.001	<0.001	<0.001	<0.003	202	Sand to Clear with no odor

CARDINAL LABORATORIES

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

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

Receiving Date: 04/12/10
Reporting Date: 04/14/10
Project Number: NOT GIVEN
Project Name: BD JUNCTION K-27 AND K-27-1
Project Location: T21S R37E SEC27 K ~ LEA COUNTY, NM

Sampling Date: 04/08/10
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: CK/HM

LAB NO.	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	TDS (mg/L)
Analysis Date:		04/14/10	04/14/10	04/13/10
H19646-1	K-27 MONITOR WELL 1	308	330	1,360
H19646-2	K-27 MONITOR WELL 2	324	202	1,150
H19646-3	K-27 MONITOR WELL 3	304	414	1,440
H19646-4	K-27 MONITOR WELL 4	436	536	1,890
H19646-5	K-27-1 MONITOR WELL 1	356	472	1,630
Quality Control		500	42.4	NR
True Value QC		500	40.0	NR
% Recovery		100	106	NR
Relative Percent Difference		< 0.1	9.1	2.8
METHOD: Standard Methods, EPA		4500-Cl⁻B	375.4	160.1

Not accredited for Chloride, Sulfate and TDS.

Chemist

Date 04/16/10

H19646 RICE

CARDINAL LABORATORIES

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

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

Receiving Date: 04/12/10
Reporting Date: 04/15/10
Project Number: NOT GIVEN
Project Name: BD JUNCTION K-27 AND K-27-1
Project Location: T21S-R37E-SEC27 K~ LEA CO., NM

Sampling Date: 04/08/10
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	04/14/10	04/14/10	04/14/10	04/14/10
H19646-1 K-27 MONITOR WELL 1	<0.001	<0.001	<0.001	<0.003
H19646-2 K-27 MONITOR WELL 2	<0.001	<0.001	<0.001	<0.003
H19646-3 K-27 MONITOR WELL 3	<0.001	<0.001	<0.001	<0.003
H19646-4 K-27 MONITOR WELL 4	<0.001	<0.001	<0.001	<0.003
H19646-5 K-27-1 MONITOR WELL 1	<0.001	<0.001	<0.001	<0.003
Quality Control	0.050	0.051	0.051	0.151
True Value QC	0.050	0.050	0.050	0.150
% Recovery	100	102	102	101
Relative Percent Difference	2.2	2.2	2.2	2.3

METHOD: EPA SW-846 8021B

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

Chemist

04/16/10
Date

H19646RWB RICE

101 East Marland - Hobbs, New Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Hack Conder	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: BD Junction K-27 and K-27-1
Project Location: T21S R37E Sec27 K ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310 rozanne@valornet.com

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2010)	TIME
H19646-1	K-27 Monitor Well 1	G	3	X				2				1		4-8	10:10
2	K-27 Monitor Well 2	G	3	X				2				1		4-8	9:00
3	K-27 Monitor Well 3	G	3	X				2				1		4-8	12:15
4	K-27 Monitor Well 4	G	3	X				2				1		4-8	11:05
5	K-27-1 Monitor Well 1	G	3	X				2				1		4-8	11:20

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X																	X	X	X	
	X																	X	X	X	
	X																	X	X	X	
	X																	X	X	X	
	X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 4-12-2010	Time: 12:20	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff) Jodi Henson	Date: 4/12/10	Time: 11:20

Phone Results		Yes		No	
Fax Results		Yes		No	Additional Fax Number:

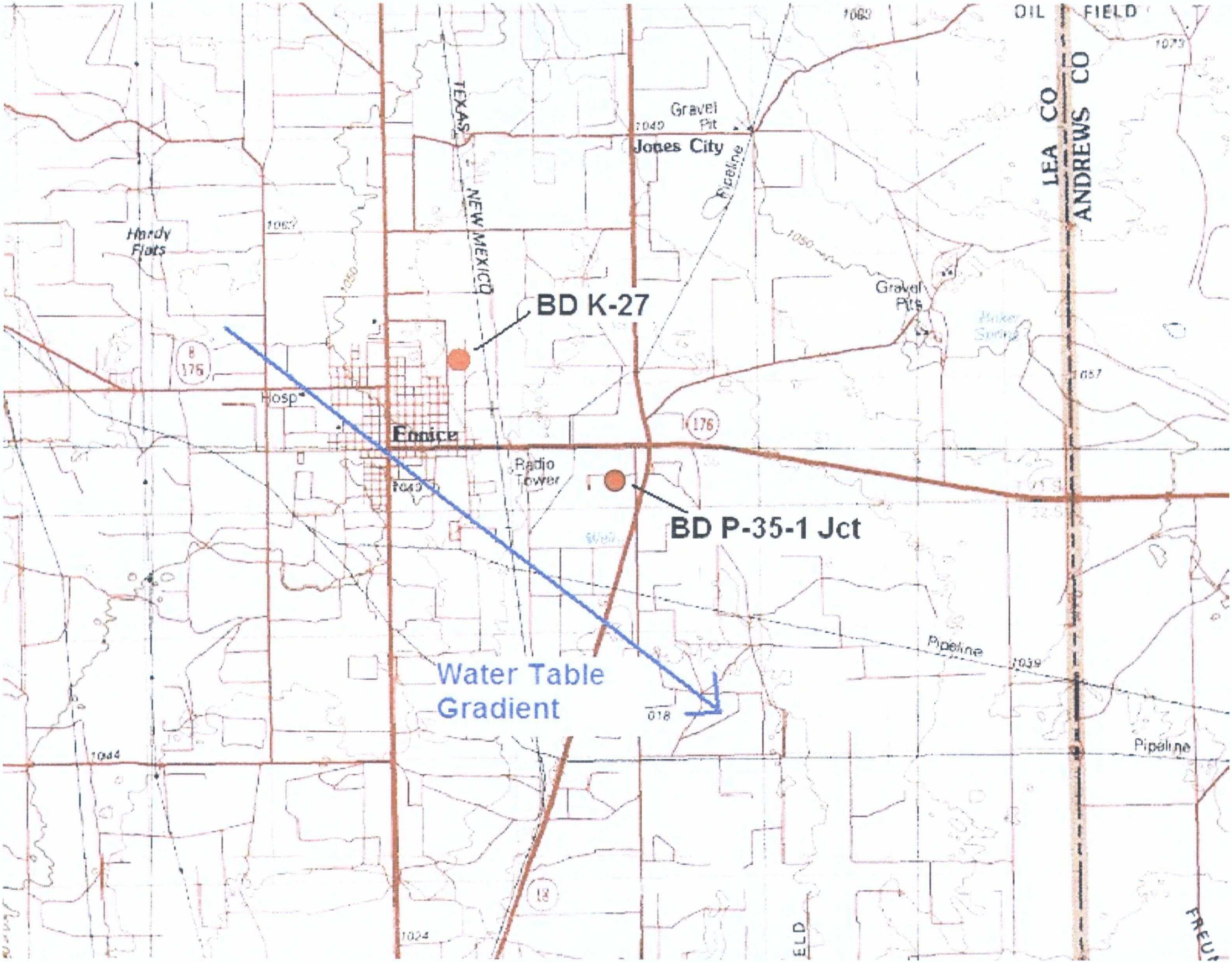
Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

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

CHECKED BY: (Initials) JA

REMARKS:
Em Email Results to hconder@riceswd.com
lweinheimer@riceswd.com
kjones@riceswd.com
rozanne@valornet.com

#26



OIL FIELD
LEA CO
ANDREWS CO
Gravel Pit
Jones City
Pipeline
TEXAS
NEW MEXICO
Hardy Flats
Gravel Pits
BD K-27
Hosp
Eunice
Radio Tower
176
BD P-35-1 Jct
Water Table Gradient
Pipeline
Pipeline
18