1R - 459

REPORTS

DATE:

9-22-10

TETRA TECH

CERTIFIED MAIL
RETURN RECIEPT NO. 7001 0320 0004 3736 6075

RECEIVED OCD
2010 SEP 27 AM 7:28

September 22, 2010

Mr. Ed Hansen
New Mexico Energy, Minerals, & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: **CAP Report and Termination Request, Rice Operating Company, Blinebry Drinkard (BD) Saltwater Disposal System (SWD) K-4 Release, Unit K, Section 4, T-22-S, R-37-E, Lea County, New Mexico, NMOCD CASE #1R0459**

Mr. Hansen:

Tetra Tech, Inc. (Tetra Tech) submits the following CAP and Termination Request for the Rice Operating Company (ROC), Blinebry Drinkard (BD) Salt Water Disposal (SWD) System K-4 Release, NMOCD Case #1R0459. ROC is the service provider (agent) for the BD SWD System and has no ownership of any portion of the 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. The site is shown on Figures 1 and 2.

1.0 BACKGROUND and PREVIOUS WORK

On February 25, 2004, a leak was discovered, 34 feet east of the K-4 junction box. According to the form C-141 (Initial) filed with the New Mexico Oil Conservation Division (NMOCD), the spill was due to a rupture of a 4-inch PVC line. An estimated 1,040 barrels of produced water was discharged, with 1,000 barrels of fluid recovered.

Initial soil sampling performed in April 2004, indicated a residual subsurface chloride impact. On July 14, 2004, a hollow-stem auger unit was utilized to drill one soil boring at the release source. The soil boring was advanced to a depth of 80 feet below ground surface (bgs) with field chloride analysis performed on soil samples at five foot intervals. Results of field chloride testing and laboratory analysis indicated that chloride impacts extend to a depth of greater than 80 feet bgs. Upon completion of the soil boring, it was backfilled with bentonite and drill cuttings. Between October 12 and October 19, 2006, Highlander (Tetra Tech) personnel were onsite to oversee the installation of three monitor wells (MW1 through MW-3) located within, up and down

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432.687.3946 www.tetratech.com

gradient of the release area. See Figure 3 for well locations. Laboratory analytical results for the soil column in monitor well MW-1 indicate the soils were impacted with chlorides greater than 250 milligram per kilograms (mg/kg) to the vadose zone. In addition, the groundwater in monitor well MW-1 was found to have a chloride concentration of 1,040 mg/L.

On April 23, 2007, ROC submitted a Corrective Action Plan (CAP) for the site and NMOCD approved verbally on December 16, 2009 during the 4th quarterly meeting between NMOCD and ROC. The CAP addressed elevated levels of chlorides within the soils which includes placement of a barrier at three feet bgs and reseeding the disturbed area with native vegetation. In addition, the CAP proposed limited withdrawal of groundwater from MW-1 in order to attenuate the chlorides within the well.

During a meeting between the NMOCD, ROC, and Highlander on July 18, 2007, it was decided to replace the existing 2-inch monitor well at MW-1 with a 4-inch monitor well in order to increase the volume of groundwater withdrawal. Also, it was discussed that the soils barrier would be placed at four feet bgs. On August 7, 2007, monitor well MW-1 was re-drilled and reinstalled as a 4-inch well.

2.0 CORRECTIVE ACTION PLAN IMPLEMENTATION

As part of the Corrective Action Plan (CAP), ROC was onsite February 22 through March 5, 2010, to excavate chloride impacted soils from the K-4 release area. An area measuring 68 feet wide by 120 feet long by 4 feet deep was excavated. Two feet of topsoil was removed and stockpiled onsite. A topsoil composite sample was collected and analyzed by Cardinal Laboratory, with the resulting chloride concentration of <16 mg/Kg. The site was excavated further and twelve (12) cubic yards of soil were disposed of at the NMOCD approved Sundance facility, with the remaining soils stockpiled and blended onsite. An east side blended backfill composite and a west side blended backfill composite sample were also analyzed by Cardinal Laboratory resulting in chloride concentrations of 16 mg/Kg and 64 mg/Kg, respectively. Upon completion of the excavation, a 20-mil polyethylene liner was installed at 4 feet in order to impede further migration of the remaining chlorides within the soil. See Figure 4 for liner location and dimensions. The east and west blended backfill soils were placed over the 20-mil liner. Between March 8 and March 10, 2010, clean offsite soils were brought to the site to continue backfilling. Imported hay was blended with the existing excavated topsoil, placed over the site and brought up to surface grade. (See Appendix A – Laboratory Data for analysis on the imported clean soils, topsoil and blended excavated soils). Silt net fencing was placed around the site and on April 8, 2010, the site was reseeded with native vegetation. (See Appendix B – Site Photographs)

On November 29, 2007, a pump test was performed on monitor well MW-1. Results indicate the well was able to pump 3 gallons per minute (gpm) for 40 minutes without pumping dry. Groundwater analytical results show the concentrations of chlorides decreased by approximately 300 mg/L (from 1,040 mg/L on November 13, 2006 to 736 mg/L on October 31, 2007). With the decrease in chlorides, it was decided that instead of installing a pump and operating it for 24 hours, 7 days a week, that periodically, the well will be pumped for several hours to enhance recovery. Beginning

TETRA TECH

in September 2009, the well was pumped periodically for several hours and weekly for the months of October and November. Total recovery of chloride impacted water was 2,575 gallons. The periodic pumping decreased the chloride concentrations in the well by 35 to 50%.

3.0 CONCLUSIONS

1. Since the installation of the three monitor wells in November 2006, there have been no BTEX constituents detected at or above the New Mexico Water Quality Control Commission (WQCC) standards.

2. As per the CAP, an area measuring 68 feet wide by 120 feet long by 4 feet deep was excavated and a 20-mil polyethylene liner was installed in order to impede further migration of chlorides within the soil. Upon completion of the liner the site was backfilled with blended and clean soils, and brought up to surface grade with excavated soils blended with hay. Silt net fencing was installed and the site was reseeded with native vegetation.

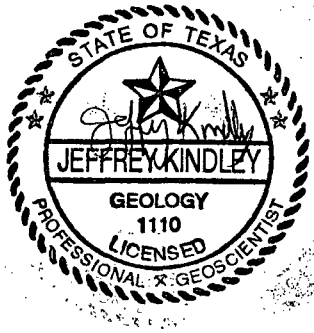
3. Approximately 2,575 gallons of chloride impacted groundwater were removed from monitor well MW-1. Periodic groundwater removal has decreased chloride concentrations by 35 to 50% in monitor well MW-1. The expanse of the chloride plume in MW-1 has remained relatively stable for the past 2 ½ years, and has not shown any affect on down gradient monitor well MW-2.

With the completion of the liner, as per the CAP, and with the decrease and relative stability of the chlorides in monitor well MW-1, and the lack of any BTEX in the onsite monitor wells since their installation in November 2006, ROC requests that the NMOCD terminate further activities at this site. Once approved, monitoring wells (MW-1, MW-2, and MW-3) will be plugged and abandoned using a cement grout with 1-3% bentonite. If you require any additional information of have any questions or comments concerning the termination request, please call me at (432) 682-4559 or Hack Conder of ROC at (575) 393-9174. Thank you for your attention to this matter.

Respectfully Submitted,
Tetra Tech, Inc.

Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc: ROC- Hack Conder



FIGURES

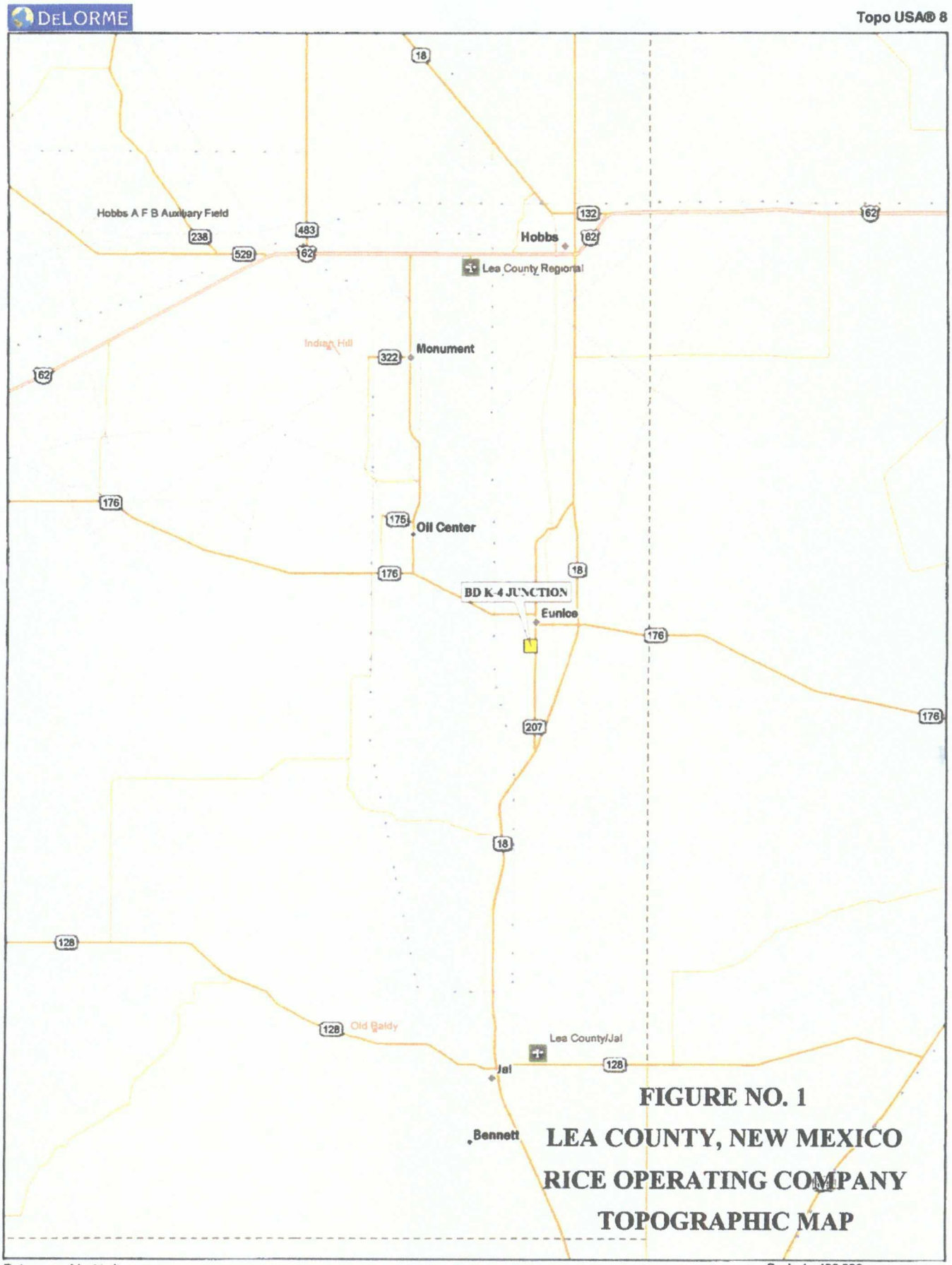
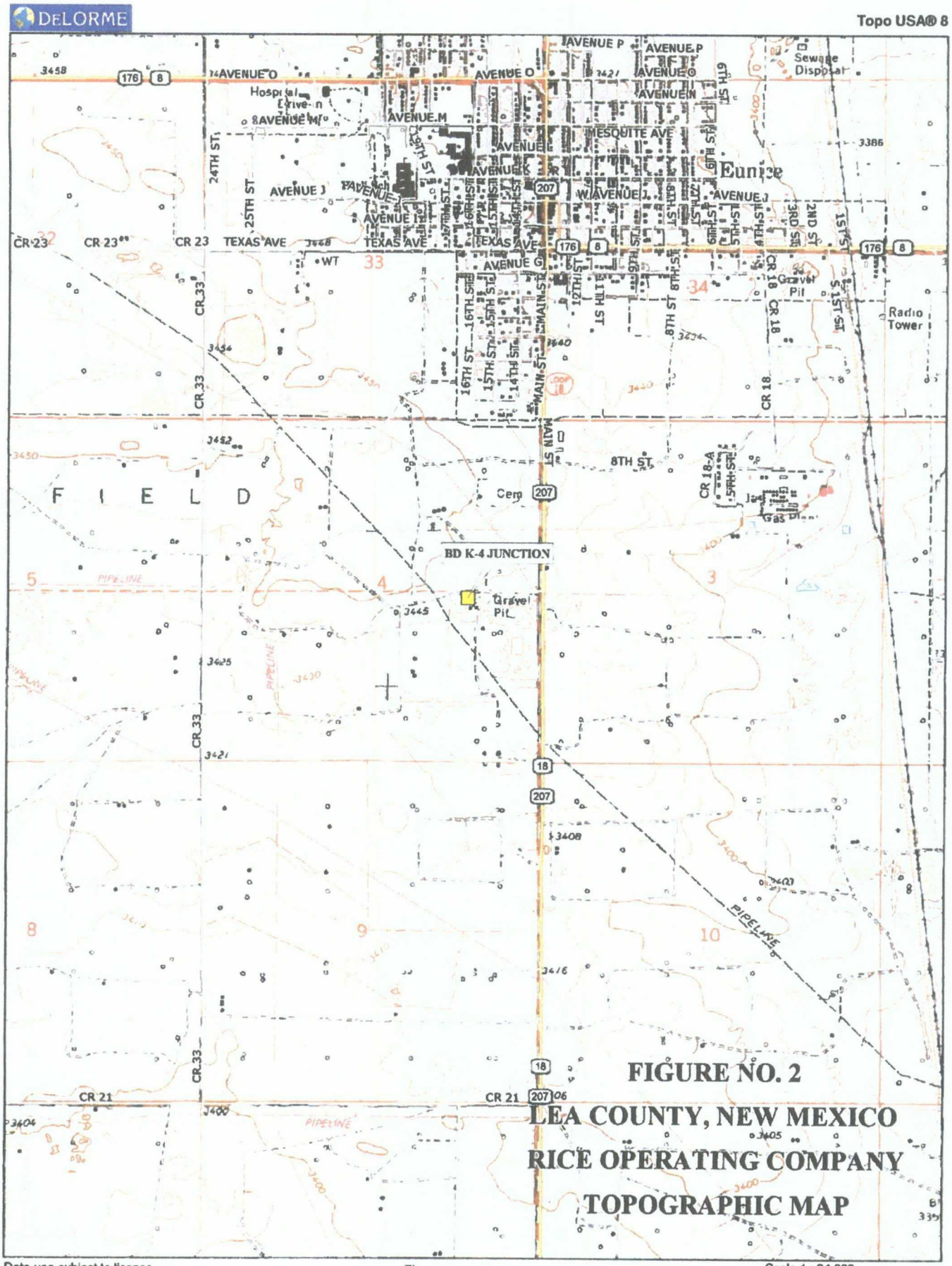


FIGURE NO. 1

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY

TOPOGRAPHIC MAP



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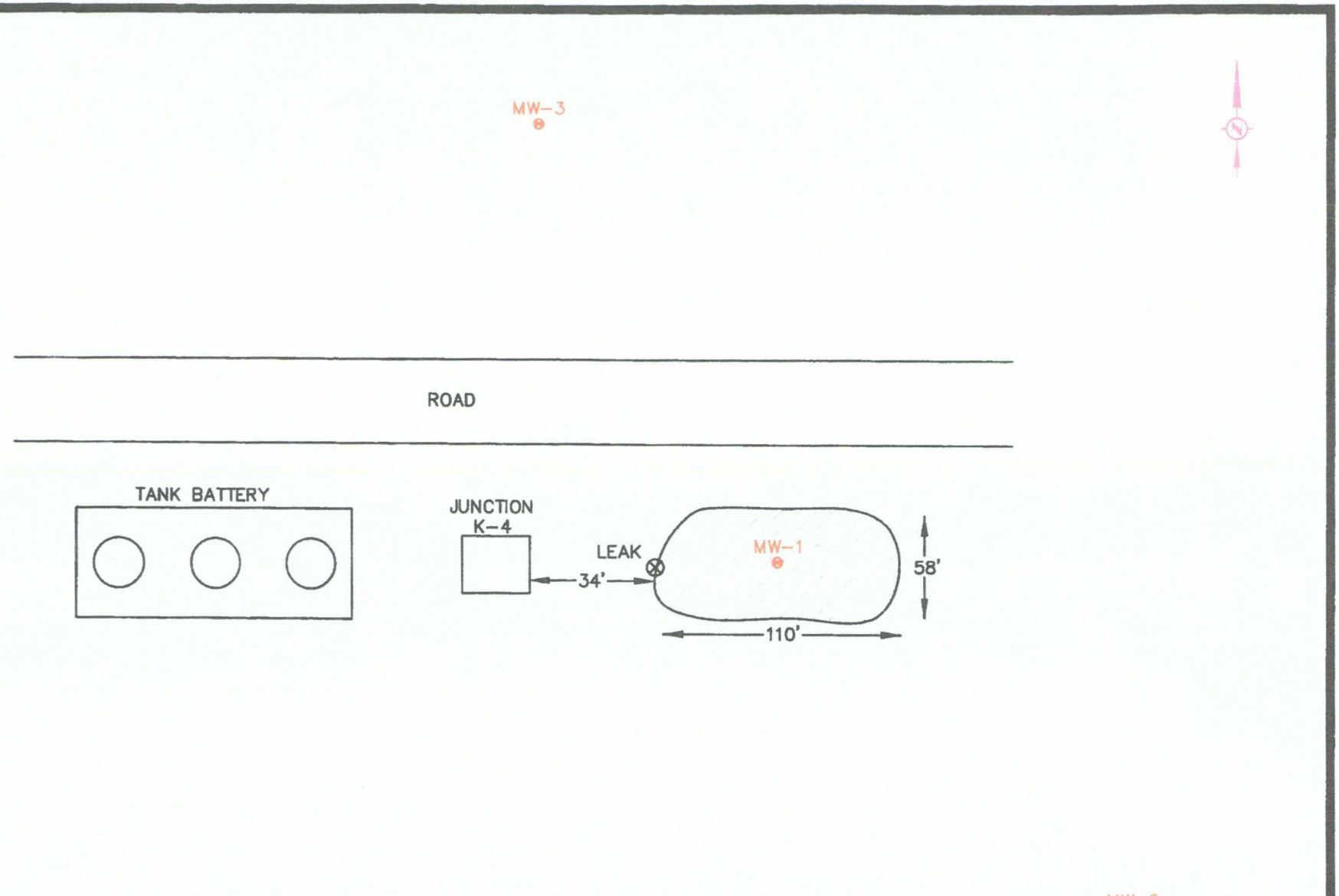
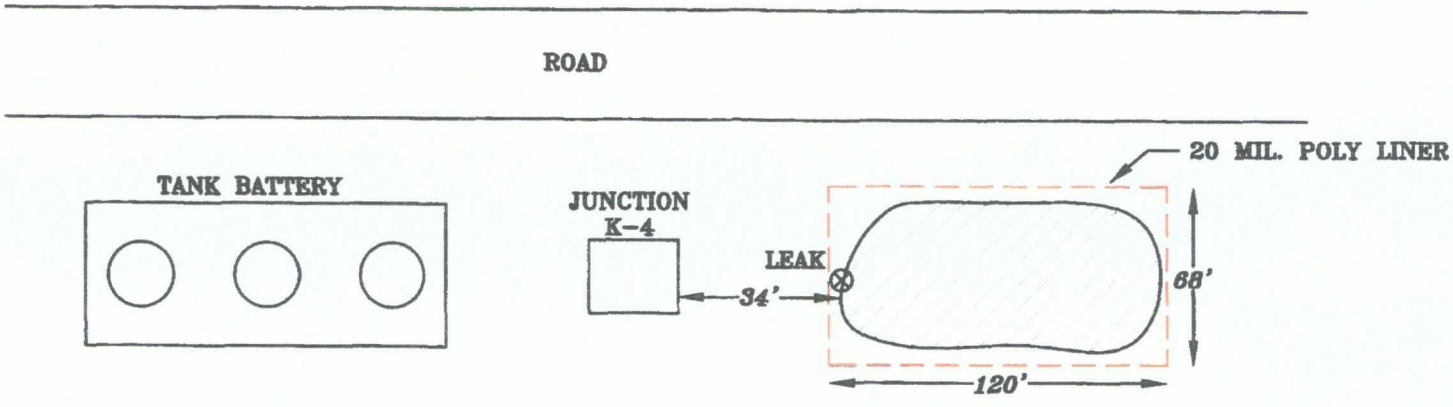
www.delorme.com

Scale 1 : 24,000
1" = 2,000.0 ft
Data Zoom 13-0


MW-3
ROAD
TANK BATTERY
JUNCTION
K-4
LEAK
34'
MW-1
58'
110'
MW-2
MONITOR WELL LOCATIONS
SPILL AREA
NOT TO SCALE
DATE:
2/26/07
DWN. BY:
JJ
FILE:
FIGURE NO. 3
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
BD K-4 JUNCTION
MONITOR WELL LOCATIONS
TETRA TECH, INC.
MIDLAND, TEXAS



☐ SPILL AREA

NOT TO SCALE

FIGURE NO. 4

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY
BD K-4 JUNCTION
CAP AREA

DATE: 2/26/07
DWN. BY: JJ
FILE:

TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

Table 1
Rice Operating Company
BD K-4
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	85.02	93.63	1.40	5	11/13/06	1040	2120	<0.001	<0.001	<0.001	<0.001	152	Clear no odor
1	84.99	93.62	1.40	6	03/08/07	916	2100	<0.001	<0.001	<0.001	<0.001	148	Clear no odor
1	84.96	93.62	1.40	6	04/23/07	917	1950	<0.001	<0.001	<0.001	<0.001	339	Clear no odor
1	86.06	97.70	7.60	6	09/14/07	760	2028	<0.001	<0.001	<0.001	<0.003	159	Clear no odor
1	86.06	97.70	7.60	20	10/31/07	736	1770	<0.002	<0.002	<0.002	<0.006	124	Clear no odor
1	85.93	98.60	8.20	30	02/15/08	760	1880	<0.002	<0.002	<0.002	<0.006	157	Clear no odor
1	85.73	98.60	8.40	30	05/05/08	720	1880	<0.002	<0.002	<0.002	<0.006	195	Clear no odor
1	85.81	98.60	8.30	30	08/11/08	620	1590	<0.001	<0.001	<0.001	<0.003	106	Clear no odor
1	85.65	98.60	8.40	30	11/13/08	570	1470	<0.001	<0.001	<0.001	<0.003	148	Clear no odor
1	85.64	98.60	8.30	30	01/21/09	630	1560	<0.001	<0.001	<0.001	<0.003	143	Clear no odor
1	85.61	98.40	8.30	30	04/22/09	600	1680	<0.001	<0.001	<0.001	<0.003	123	Clear no odor
1	85.48	98.40	8.40	30	07/20/09	520	1380	<0.001	<0.001	<0.001	<0.003	113	Clear no odor
1	85.49	98.40	8.40	30	10/13/09	700	1700	<0.001	<0.001	<0.001	<0.003	131	Clear no odor
1	85.32	98.41	8.50	30	01/19/10	780	1860	<0.001	<0.001	<0.001	<0.003	173	Clear no odor
1	85.31	98.41	8.50	30	04/15/10	680	1610	<0.001	<0.001	<0.001	<0.003	155	Clear no odor
1	85.23	98.41	8.60	30	07/20/10	610	1550	<0.001	<0.001	<0.001	<0.003	143	Clear no odor

Graph 1
Rice Operating Company
MW-1
BD K-4
Lea County, New Mexico

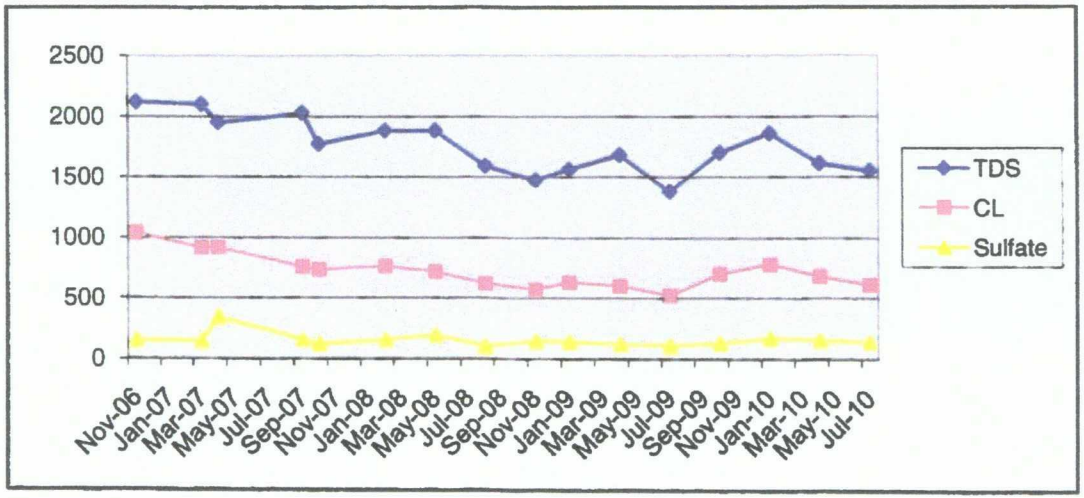


Table 2
Rice Operating Company
BD K-4
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	83.35	94.10	1.70	7	11/13/06	77	542	<0.001	<0.001	<0.001	<0.001	85	Clear no odor
2	83.28	94.08	1.70	7	03/08/07	75.3	574	<0.001	<0.001	<0.001	<0.001	80.8	Clear no odor
2	83.25	94.08	1.70	7	04/23/07	83.5	564	<0.001	<0.001	<0.001	<0.001	83	Clear no odor
2	83.12	94.08	1.80	7	09/14/07	110	588	<0.001	<0.001	<0.001	<0.003	130	Clear no odor
2	83.11	94.08	1.80	6	10/31/07	84	596	<0.002	<0.002	<0.002	<0.006	82.7	Clear no odor
2	82.97	94.05	1.80	6	02/15/08	92	574	<0.002	<0.002	<0.002	<0.006	86.6	Clear no odor
2	82.81	94.05	1.80	6	05/05/08	100	570	<0.002	<0.002	<0.002	<0.006	117	Clear no odor
2	82.86	94.05	1.80	6	08/11/08	108	596	<0.001	<0.001	<0.001	<0.003	94	Clear no odor
2	82.75	94.05	1.80	6	11/13/08	144	578	<0.001	<0.001	<0.001	<0.003	93.7	Clear no odor
2	82.77	93.98	1.80	6	01/21/09	104	598	<0.001	<0.001	<0.001	<0.003	95.4	Clear no odor
2	82.69	93.98	1.80	6	04/22/09	108	621	<0.001	<0.001	<0.001	<0.003	89.8	Clear no odor
2	82.61	93.98	1.80	6	07/20/09	144	628	<0.001	<0.001	<0.001	<0.003	95.4	Clear no odor
2	82.58	93.98	1.80	6	10/13/09	108	641	<0.001	<0.001	<0.001	<0.003	78.9	Clear no odor
2	82.40	93.67	1.80	6	01/19/10	116	605	<0.001	<0.001	<0.001	<0.003	105	Clear no odor
2	82.37	93.67	1.80	6	04/15/10	112	625	<0.001	<0.001	<0.001	<0.003	91.2	Clear no odor
2	82.32	93.67	1.80	6	07/20/10	116	596	<0.001	<0.001	<0.001	<0.003	74.2	Clear no odor

Graph 2
Rice Operating Company
MW-2
BD K-4
Lea County, New Mexico

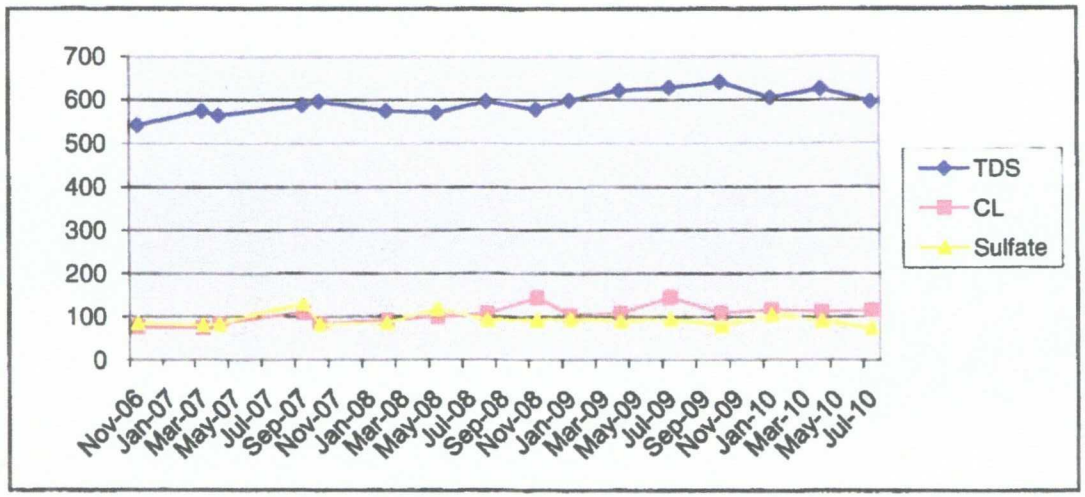
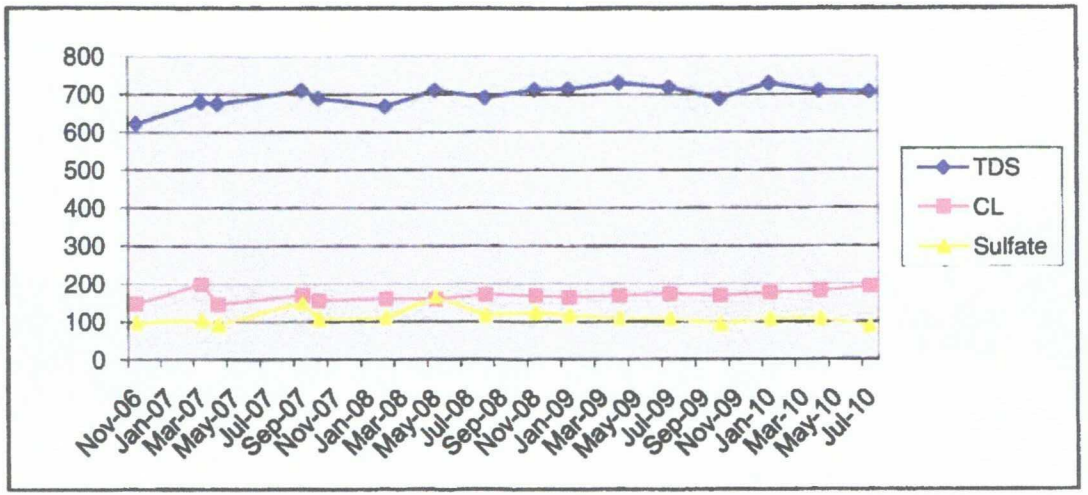


Table 3
Rice Operating Company
BD K-4
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	86.45	94.60	1.30	5	11/13/06	148	622	<0.001	<0.001	<0.001	<0.001	97.6	Clear no odor
3	86.41	94.50	1.30	5	03/08/07	199	678	<0.001	<0.001	<0.001	<0.001	103	Clear no odor
3	86.35	94.50	1.30	6	04/23/07	145	674	<0.001	<0.001	<0.001	<0.001	92.1	Clear no odor
3	86.23	94.50	1.30	6	09/14/07	170	710	<0.001	<0.001	<0.001	<0.003	151	Clear no odor
3	86.19	94.50	1.30	6	10/31/07	156	689	<0.002	<0.002	<0.002	<0.006	106	Clear no odor
3	86.09	94.35	1.30	6	02/15/08	160	668	<0.002	<0.002	<0.002	<0.006	110	Clear no odor
3	85.89	94.35	1.40	6	05/05/08	160	710	<0.002	<0.002	<0.002	<0.006	166	Clear no odor
3	85.94	94.35	1.30	6	08/11/08	172	691	<0.001	<0.001	<0.001	<0.003	117	Clear no odor
3	85.84	94.35	1.40	6	11/13/08	168	711	<0.001	<0,001	<0.001	<0.003	124	Clear no odor
3	85.84	94.20	1.30	6	01/21/09	164	713	<0.001	<0.001	<0.001	<0.003	116	Clear no odor
3	85.76	94.20	1.40	6	04/22/09	168	730	<0.001	<0.001	<0.001	<0.003	108	Clear no odor
3	85.64	94.20	1.40	6	07/20/09	172	718	<0.001	<0.001	<0.001	<0.003	107	Clear no odor
3	85.63	94.20	1.40	6	10/13/09	168	688	<0.001	<0.001	<0.001	<0.003	94.1	Clear no odor
3	85.52	94.58	1.40	6	01/19/10	176	729	<0.001	<0.001	<0.001	<0.003	108	Clear no odor
3	85.46	94.58	1.50	6	04/15/10	180	708	<0.001	<0.001	<0.001	<0.003	108	Clear no odor
3	85.38	94.58	1.50	6	07/20/10	192	706	<0.001	<0.001	<0.001	<0.003	89.5	Clear no odor

Graph 3
Rice Operating Company
MW-3
BD K-4
Lea County, New Mexico



APPENDIX A
LABORATORY DATA

CARDINAL LABORATORIES

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

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

Receiving Date: 02/25/10
Reporting Date: 02/26/10
Project Owner: NOT GIVEN
Project Name: BD K-4 22137
Project Location: NOT GIVEN

Analysis Date: 02/26/10
Sampling Date: 02/25/10
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: HM

LAB NO.	SAMPLE ID	Cl^- (mg/kg)
H19344-1	EAST SIDE BLENDED BACKFILL 8 PT.	16
	COMP.	
Quality Control		510
True Value QC		500
% Recovery		102
Relative Percent Difference		2.0

METHOD: Standard Methods	4500-Cl^-B

Note: Analysis performed on a 1:4 w:v aqueous extract.

Chemist

02/26/10
Date

H19344 Rice

CARDINAL LABORATORIES

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

Page____ of ____

Company Name:	Rice Operating Co.	**BILL TO**	
Project Manager:	Hack Conder	P.O. #:	
Address:	122 W Taylor	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	393-9174 Fax #: 397-1471	Address:	
Project #:	Project Owner:	City:	
Project Name:	BD K-4 22137	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Bruce Baker	Fax #:	

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	Cl
H19344-1	East side blended Backfill 8 pt. Comp.	C	1			✓					✓		2-25-10	12:50pm	✓

Rush

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.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 2-25-10	Received By:	
Bruce Baker	Time: 3:32pm		
Relinquished By:	Date:	Received By:	
	Time:	Jodi Henson	

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

Temp. | Sample Condition: Cool ☑ Yes ☐ No, Intact ☑ Yes ☐ No | CHECKED BY: (Initials) AA

Phone Result:	☐	No	Add'l Phone #:
Fax Result:	☐	No	Add'l Fax #:

REMARKS:

Email results to hconder@riceswd.com, Kjones@riceswd.com, bbaker@riceswd.com

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

#26

CARDINAL LABORATORIES

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

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

Receiving Date: 03/05/10
Reporting Date: 03/05/10
Project Owner: NOT GIVEN
Project Name: BD K-4 22/37
Project Location: NOT GIVEN

Analysis Date: 03/05/10
Sampling Date: 03/04/10
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: HM

LAB NO.	SAMPLE ID	Cl^- (mg/kg)
H19384-1	WEST SIDE BLENDED BACKFILL	64
	8 PT. COMP.	
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		2.0

METHOD: Standard Methods	4500-Cl B

Note: Analysis performed on a 1:4 w:v aqueous extract.

Chemist

03/05/10
Date

H19384 Rice

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:	Rice Operating Co.	BILL TO	
Project Manager:	HACK Conder	P.O. #:	
Address:	122 W Taylor	Company:	
City:	Hobbs	State: NM Zip: 88240	
Attn:			
Phone #:	393-9174	Fax #: 397-1471	
Address:			
Project #:		Project Owner:	
City:			
Project Name:	BD K-4 22137	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 -
H19584-1	West side Blended														
	BACKfill Opt. Comp.	C	1			✓					✓		3-4-10	4:30pm	✓

Rush

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: Bruce Baker	Date: 3-5-10 Time: 8:26 am	Received By:	
Relinquished By:	Date: 3/5/10 Time: 8:26	Received By: Jodi Henson	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials)	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
Email hconder@riceswd.com, Kjones@riceswd.com
bbaker@riceswd.com

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

#26

CARDINAL LABORATORIES

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

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

Receiving Date: 03/05/10
Reporting Date: 03/05/10
Project Number: NOT GIVEN
Project Name: BD K-4 22/37
Project Location: BD K-4 22/37

Sampling Date: 03/04/10
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: AB/HM

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		03/05/10	03/05/10	03/05/10
H19386-1	8PT. IMPORTED SOIL COMP.	<10.0	<10.0	< 16
Quality Control		501	574	500
True Value QC		500	500	500
% Recovery		100	115	100
Relative Percent Difference		1.7	1.1	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl^-: Std. Methods 4500-Cl^-B
*Analysis performed on a 1:4 w:v aqueous extract.
Reported on wet weight.

Chemist

03/08/10
Date

H19386 TCL RICE

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:	Rice Operating Co.	BILL TO	
Project Manager:	Hack Conder	P.O. #:	
Address:	122 W Taylor	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	393-9174 Fax #: 397-1471	Address:	
Project #:	Project Owner:	City:	
Project Name:	BD K-4 32137	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Bruce Baker	Fax #:	

ANALYSIS REQUEST: Cl- | TPH 8015M

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	SAMPLING TIME	Cl-	TPH 8015M
H19386-1	8pt. impacted soil comp.	C	1			✓					✓		3-4-10	4:00pm	✓	✓

Rush

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Relinquished By: Bruce Baker	Date: 3-5-10 Time: 8:28am	Received By:	
Relinquished By:	Date: Time:	Received By: Jade Henson	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: Yes / No Intact: Yes / No	CHECKED BY: (Initials)	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: email results to hconder@riceswd.com, Kjones@riceswd.com, bbaker@riceswd.com

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#26

CARDINAL LABORATORIES

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

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

Receiving Date: 03/05/10
Reporting Date: 03/05/10
Project Owner: NOT GIVEN
Project Name: BD K-4 22/37
Project Location: NOT GIVEN

Analysis Date: 03/05/10
Sampling Date: 03/04/10
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: HM

LAB NO.	SAMPLE ID	Cl^- (mg/kg)
H19385-1	8 PT. TOP SOIL COMP.	< 16
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		2.0

METHOD: Standard Methods	4500-Cl⁻B

Note: Analysis performed on a 1:4 w:v aqueous extract.

Chemist

03/05/10
Date

H19385 Rice

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

		BILL TO	
Company Name:	Rice Operating Co.	P.O. #:	
Project Manager:	Mack Cowder	Company:	
Address:	122 W Taylor	Attn:	
City:	Hobbs State: NM Zip: 88240	Address:	
Phone #:	393-9174 Fax #: 397-1471	City:	
Project #:	Project Owner:	State: Zip:	
Project Name:	BD K-4 22137	Phone #:	
Project Location:		Fax #:	
Sampler Name:	Bruce Baker		

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
H9385-1	Bpt. Top Soil Comp.	C	1			✓					✓		3-4-10	4:14pm	✓

Rush

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: Bruce Baker	Date: 3-5-10 Time: 8:27am	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By: Jodi Henson	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) JH	REMARKS: email Result to hcowder@riceswd.com Kjones@riceswd.com, bbaker@riceswd.com

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

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APPENDIX B
SITE PHOTOGRAPHS

Excavating BD K-4 leak to 4' bgs

Placement of the liner in excavation

Backfilling the site with clean topsoil

Overview of site being backfilled

Seeding the site with native vegetation

Tilling the seed into the soil