AP - 44

ANNUAL MONITORING REPORT

YEAR(S): 2008

TETRA TECH

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March 16, 2009

Mr. Brad Jones
New Mexico Energy, Minerals, & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2008 Annual Groundwater Summary Report & Project Status Report, Rice Operating Company, Eunice Monument Eumont (EME) SWD System H-13 Leak, Unit H, Section 13, T-20-S, R-36-E, Lea County, New Mexico, NMOCD CASE #1R0429 (AP-44)

Mr. Jones:

Tetra Tech, Inc. (Tetra Tech) takes this opportunity to submit the 2008 Annual Groundwater Summary Report for the Rice Operating Company (ROC), Eunice Monument Eumont (EME) SWD System H-13 Leak. ROC is the service provider (agent) for the EME Salt Water Disposal System and has no ownership of any portion of the pipeline, well or facility. The EME SWD system is owned by a consortium of oil producers, system partners, who provide all operating capital on a percentage ownership/usage basis.

Background

ROC discovered an accidental discharge at the above referenced site on July 3, 2002. The site location is shown on Figure 1. The soil had settled underneath a 4" asbestos/concrete system line causing it to break. According to the C-141 form (Initial) filed on July 11, 2002, the total volume spilled was 10 barrels with 5 barrels recovered and disposed of into the EME SWD system. The pipeline leak was permanently repaired to minimize the potential for further impairment.

Two delineation trenches were excavated on July 22, 2002, one on the east side of the system line and one on the west side of the line. Chloride concentrations in the east trench decreased to 254 mg/kg at a depth of 8 feet below ground surface, while the west trench exhibited elevated chloride levels to 12 feet below ground surface (bgs). A soil boring was drilled on September 25, 2002 to further delineate the depth of impact. Based upon the chloride concentrations and relatively shallow groundwater (~31 feet bgs), this soil boring was completed as a monitoring well. The well was completed to a total depth of 41 feet bgs.

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

On December 13, 2002, the NMOCD was notified of groundwater impact. The monitoring well has been sampled on a quarterly basis since October 2002. The only constituent of concern (COC) at this site was chloride.

Stage 1 Abatement Plan Implementation

As part of the Stage 1 Abatement Plan two additional monitor wells were proposed for the site. These two monitor wells (MW-2 and MW-3) were installed on March 23, 2006. MW-2 was placed up-gradient of MW-1, while MW-3 was placed down-gradient. The wells were developed and sampled on March 27, 2006 and July 17, 2006. Both of the new monitor wells displayed similar qualities to the monitor well placed at the leak site (MW-1).

Also as part of the Stage I Abatement Plan, a water well database search was performed to encompass a ½ mile radius around the site. The database search revealed two wells in adjoining section of this site. Both wells were noted as "livestock watering wells" and both exhibited elevated chloride concentrations (1268 mg/L and 2680 mg/L). Based upon the results of the Stage I Abatement Plan implementation, it appears that the background water quality is impaired over the entire region and not as a result of this spill incident.

RULE 19 RELEASE REQUEST and SOIL WORK PLAN

In a report to the NMOCD dated August 18, 2006, ROC requested release from NMOCD Rule 19 requirements for the groundwater at the site. Additionally, ROC proposed additional assessment and remediation of chloride impacted soils for closure under NMOCD approval. The horizontal extent of chloride impacted soils was to be evaluated with a backhoe. Upon evaluation, the soils were to be excavated to a depth down below the root zone (minimum of 3.0' below ground surface) and either a clay cap or a 40 mil impervious liner was to be placed into the excavation. The excavated soils were to be evaluated and either placed back into the excavation or transported offsite for disposal. The OCD requested additional information in September 2006 which was provided in December 2006.

In a meeting between Mr. Wayne Price of the NMOCD, ROC and Highlander on July 18, 2007, the site was evaluated for release from Rule 19 and proposed excavation, evaluation, and placement of the clay liner beneath the root zone (3.0' bgs). It was noted in the discussion, that the site has revegetated and formed a natural evapotransporation barrier. As such, Mr. Price agreed with ROC that since the site has revegetated and formed a natural evapotransporation barrier, ROC can be released from the proposed excavation and placement of the impervious liner. In a meeting with Mr. Ed Hansen of the NMOCD in January 2008, Mr. Hansen concurred with Mr. Price on releasing ROC from excavating and placement of an impervious liner at the site. With the exception of the meetings on the soils, no response has been received from the NMOCD in regards to the termination request for sampling of groundwater at the site.

Monitor Well Sampling

The site monitor wells were sampled on January 22, May 7, August 13, and November 17, 2008. Prior to sampling, the monitor wells were gauged and approximately three casing volumes of water were purged from the wells. The pump and associated tubing were decontaminated with a laboratory grade detergent and rinsed with deionized water. Cumulative water level measurements and purge volumes for the monitor wells are included in the Tables Section of this report.

The wells were also inspected for the presence of phase-separated hydrocarbons (PSH). Groundwater samples were collected as soon as possible after the groundwater returned to its static level. Groundwater samples were collected using clean disposable polyethylene bailers and disposable line. The samples were transferred into labeled and preserved containers provided by the laboratory. The samples were delivered under proper chain-of-custody control to Cardinal Labs of Hobbs, New Mexico. The groundwater samples were analyzed for major anions, by methods 310.1, 9253 and 375.4, cations by method 6010B, Total Dissolved Solids (TDS) by method 160.1 and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA 8021B. Copies of the laboratory reports are enclosed in Appendix A.

Monitor Well Sample Results

The three monitor wells continued to exhibit elevated chlorides throughout the year ranging from 1,360 mg/L in MW-2 in May to 1,660 mg/L in MW-1 in August 2008. As part of the Stage I Abatement Plan, a water well database search was performed to encompass a ½-mile radius around the site. The database revealed two water wells in an adjoining section of the site with elevated chloride concentrations (1,268 mg/L and 2,680 mg/L). As such, it appears the chloride levels are naturally elevated in the region.

Conclusions

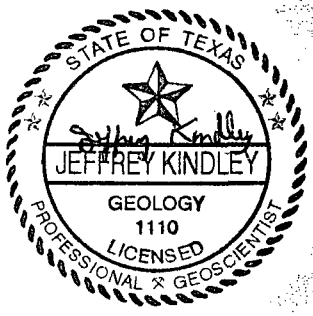
1. In 2008, there were no BTEX constituents detected at or above reporting limits for any of the three monitor wells.

2. The three monitor wells continue to exhibit elevated chlorides throughout the year ranging from 1,360 mg/L in MW-2 in May to 1,660 mg/L in MW-1 in August 2008. This is consistent with other water wells located in an adjacent section with chloride concentrations of 1,268 mg/L and 2,680 mg/L.

3. Based upon the results of the Stage I Abatement Plan implementation, it appears that the background water quality is impaired over the entire region, and not as a result of this spill incident. As of this report, no response has been received from the NMOCD in regards to the termination request for sampling of groundwater.

TETRA TECH

4. Quarterly monitoring at this site will continue and an annual report will be prepared and submitted to the NMOCD in the first quarter of 2010.



Respectfully Submitted,
Tetra Tech, Inc.

Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc:Hack Conder – ROC, Edward Hansen – NMOCD
Enclosures: Figures, Tables, Laboratory Analysis

FIGURES

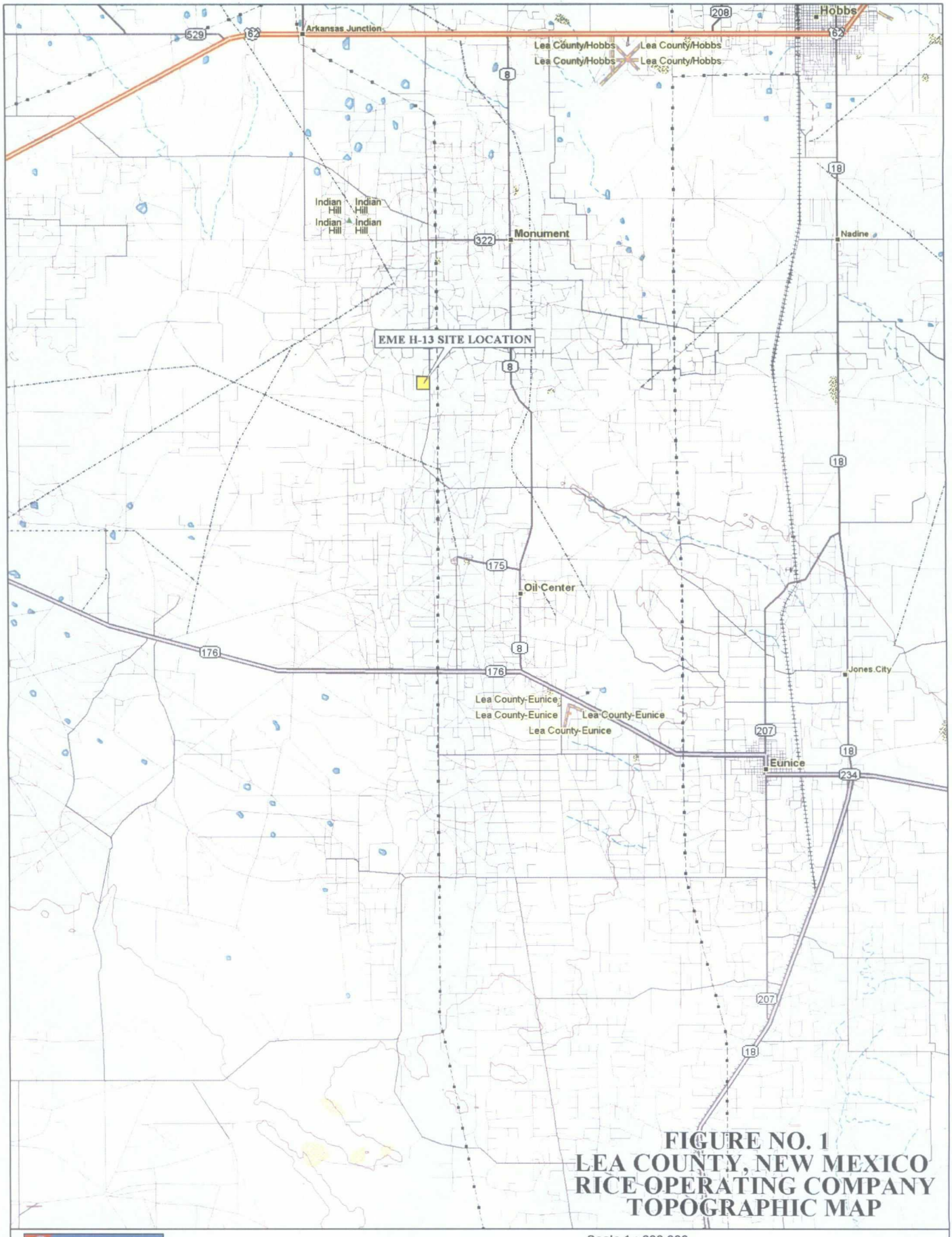


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

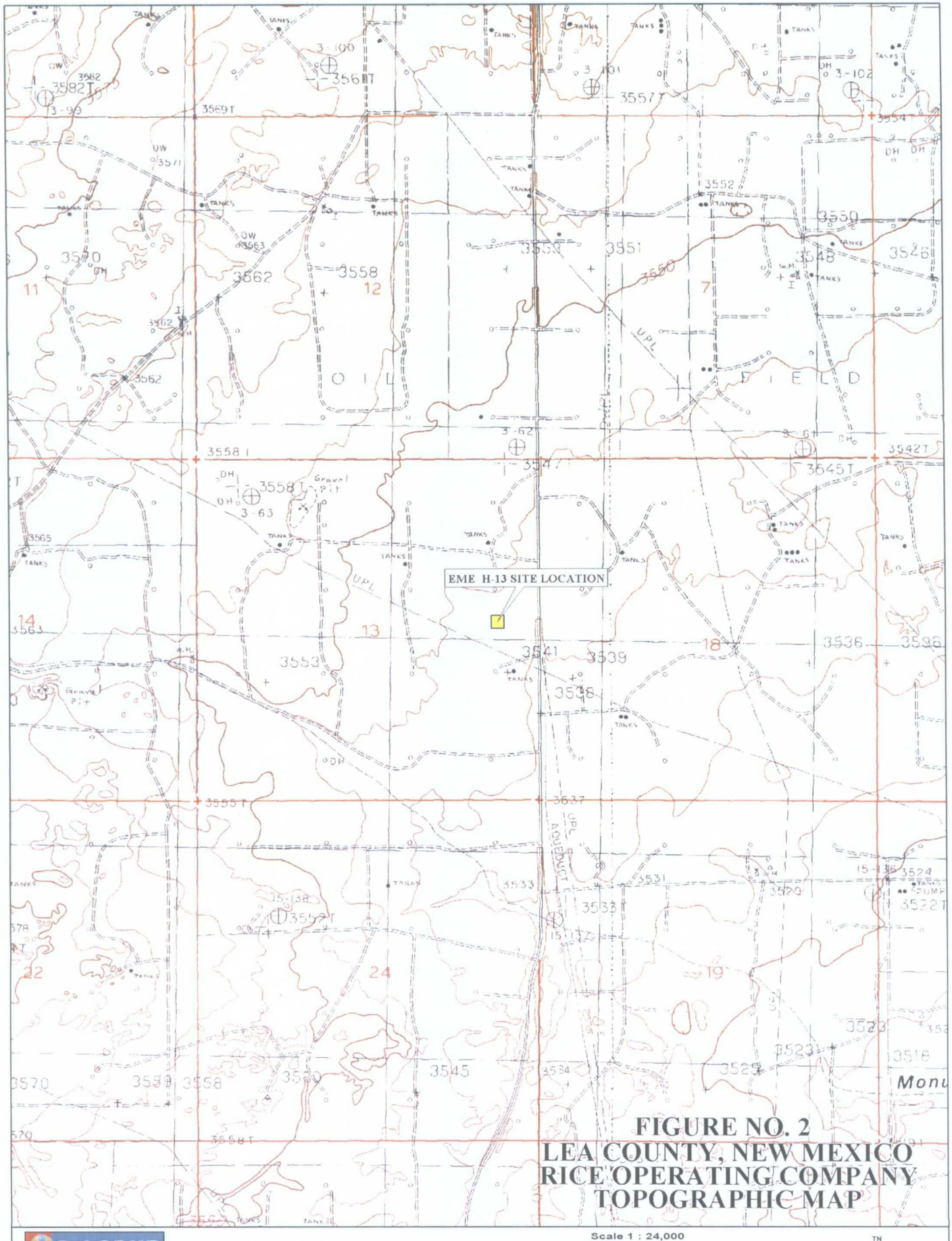


FIGURE NO. 2
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

Scale 1 : 24,000
1" = 2000 ft

TN
MN
8.7°E

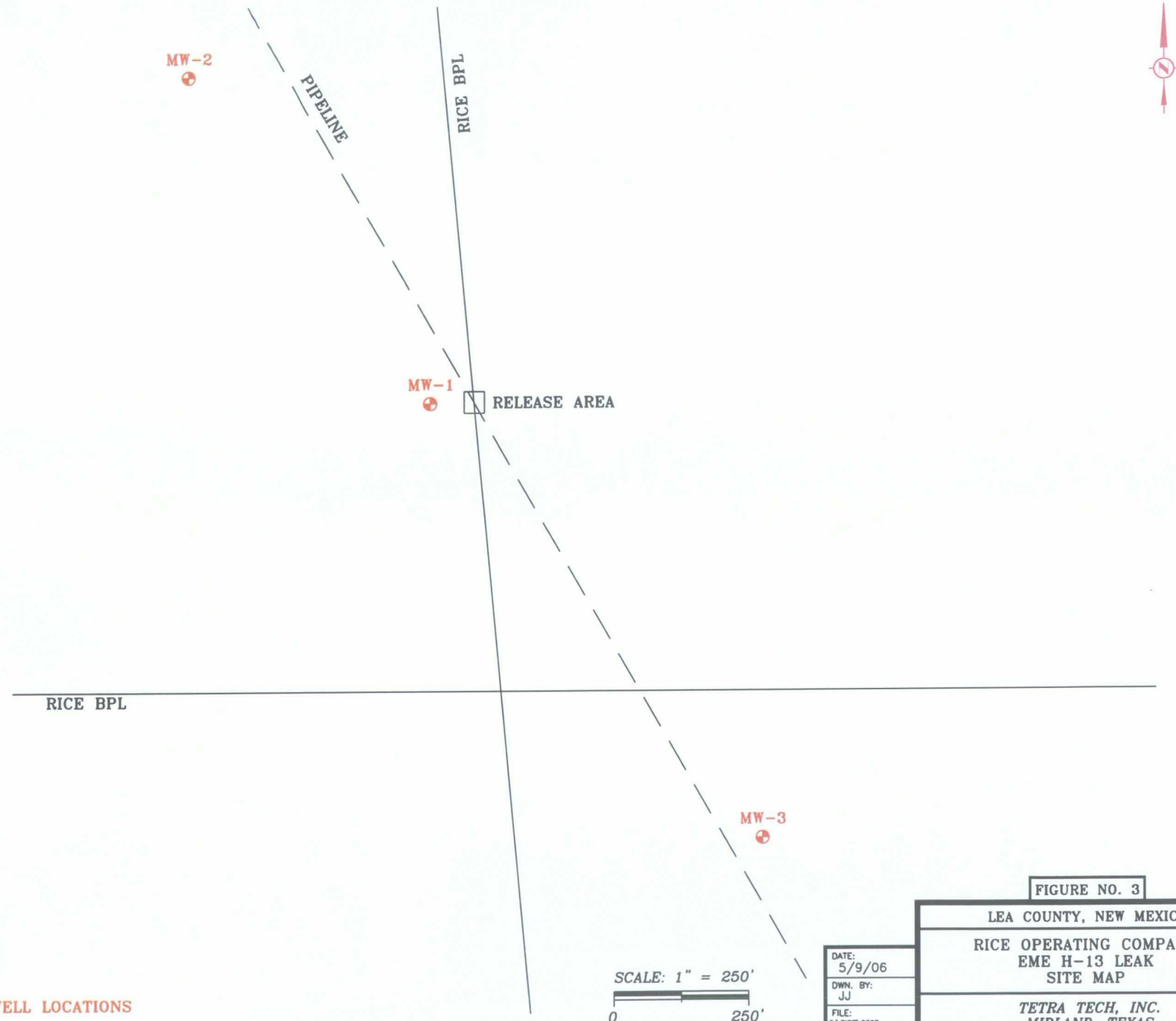


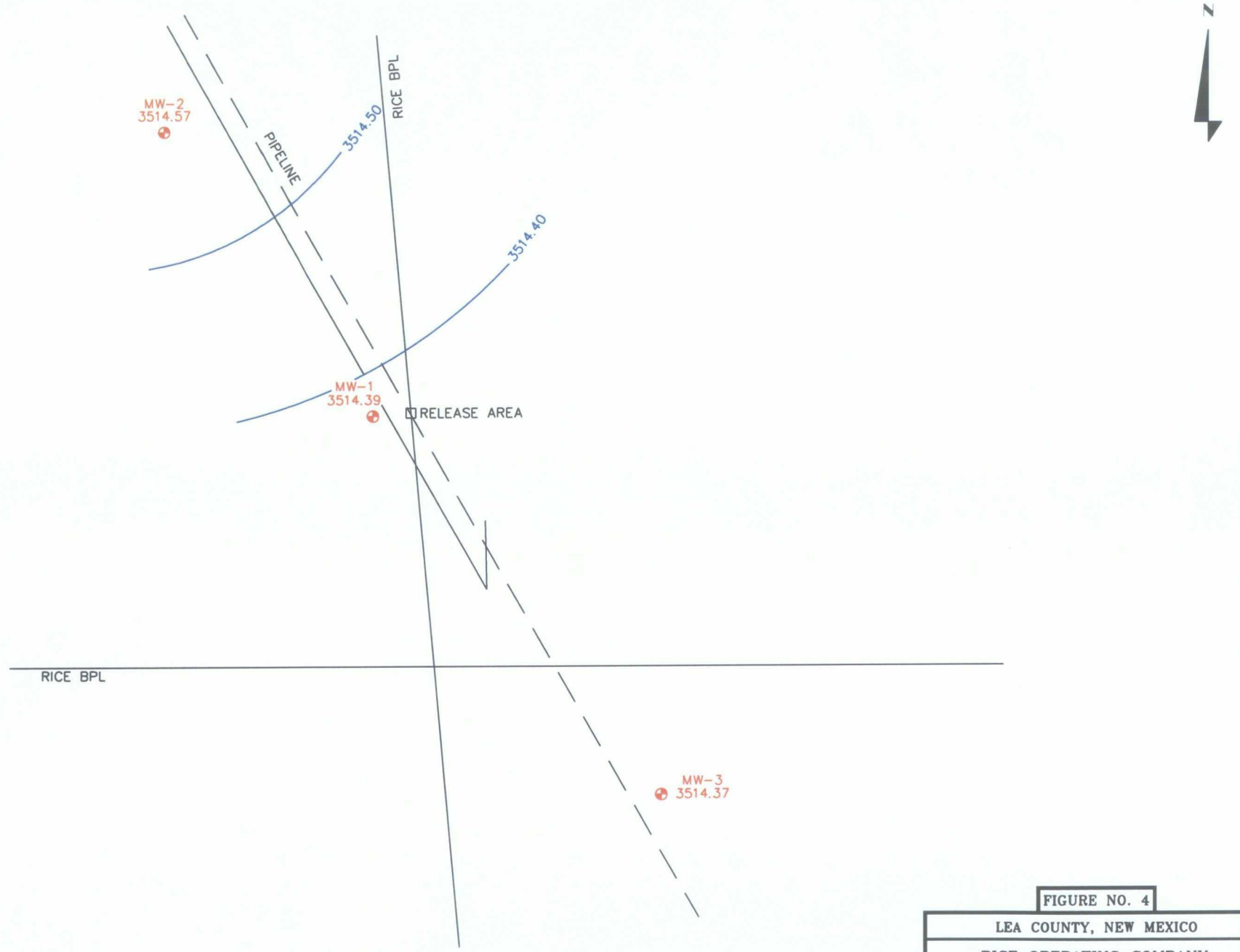
FIGURE NO. 3

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY
EME H-13 LEAK
SITE MAP

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 5/9/06
DWN. BY: JJ
FILE: C:\RICE\2307 SITE MAP



MONITOR WELL LOCATIONS
CONTOUR INTERVAL = 0.10'

SCALE: 1" = 250'

0 250'

DWN. BY: JJ

FILE: C:\RICE\2307 SITE MAP

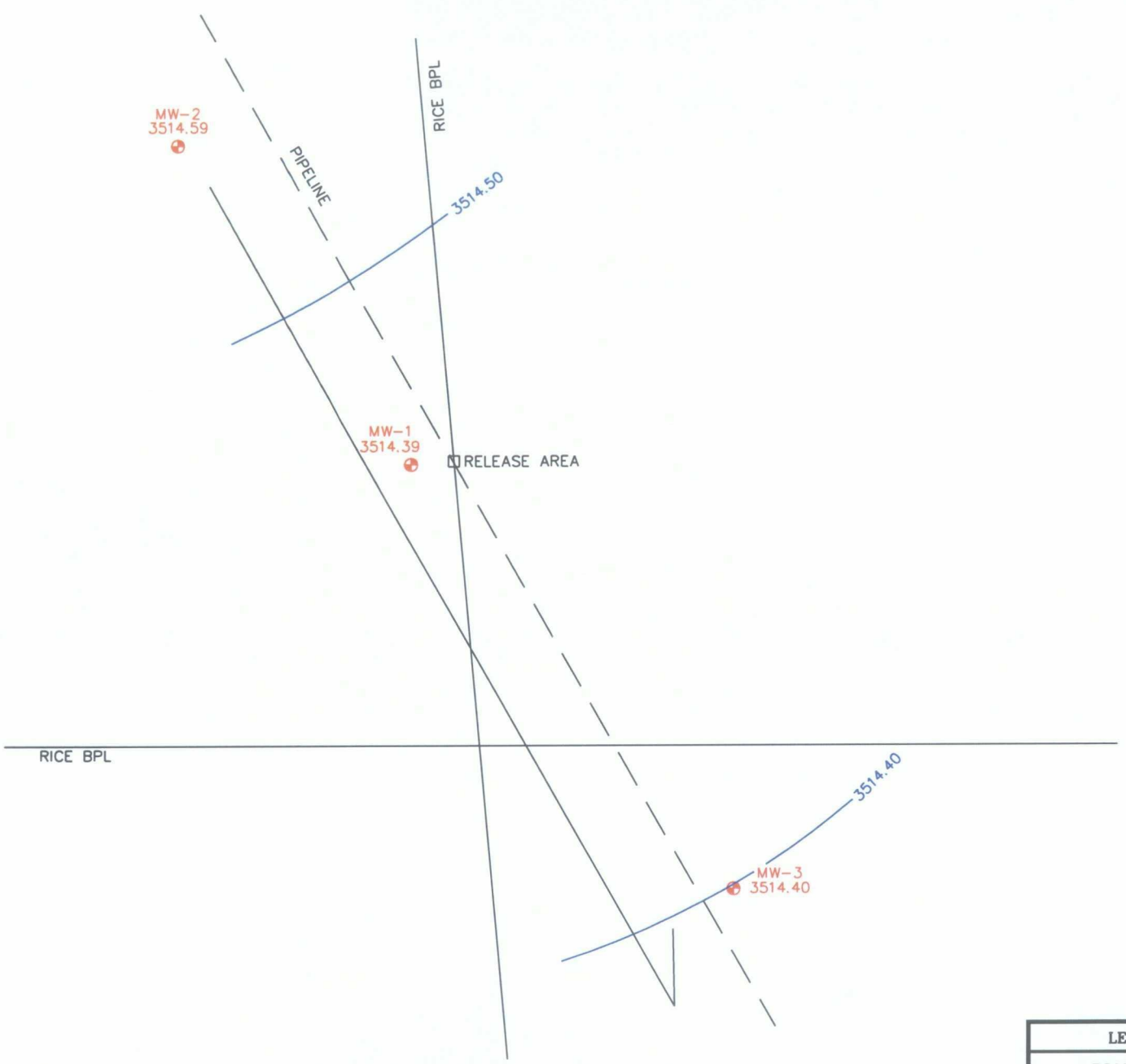
FIGURE NO. 4

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY

EME H-13 LEAK
GROUNDWATER GRADIENT MAP
GAUGED ON 1/22/08

TETRA TECH, INC.
MIDLAND, TEXAS



MONITOR WELL LOCATIONS
CONTOUR INTERVAL = 0.10'

SCALE: 1" = 250'

0 250'

DWN. BY: JJ

FILE: C:\RICE\2307 SITE MAP

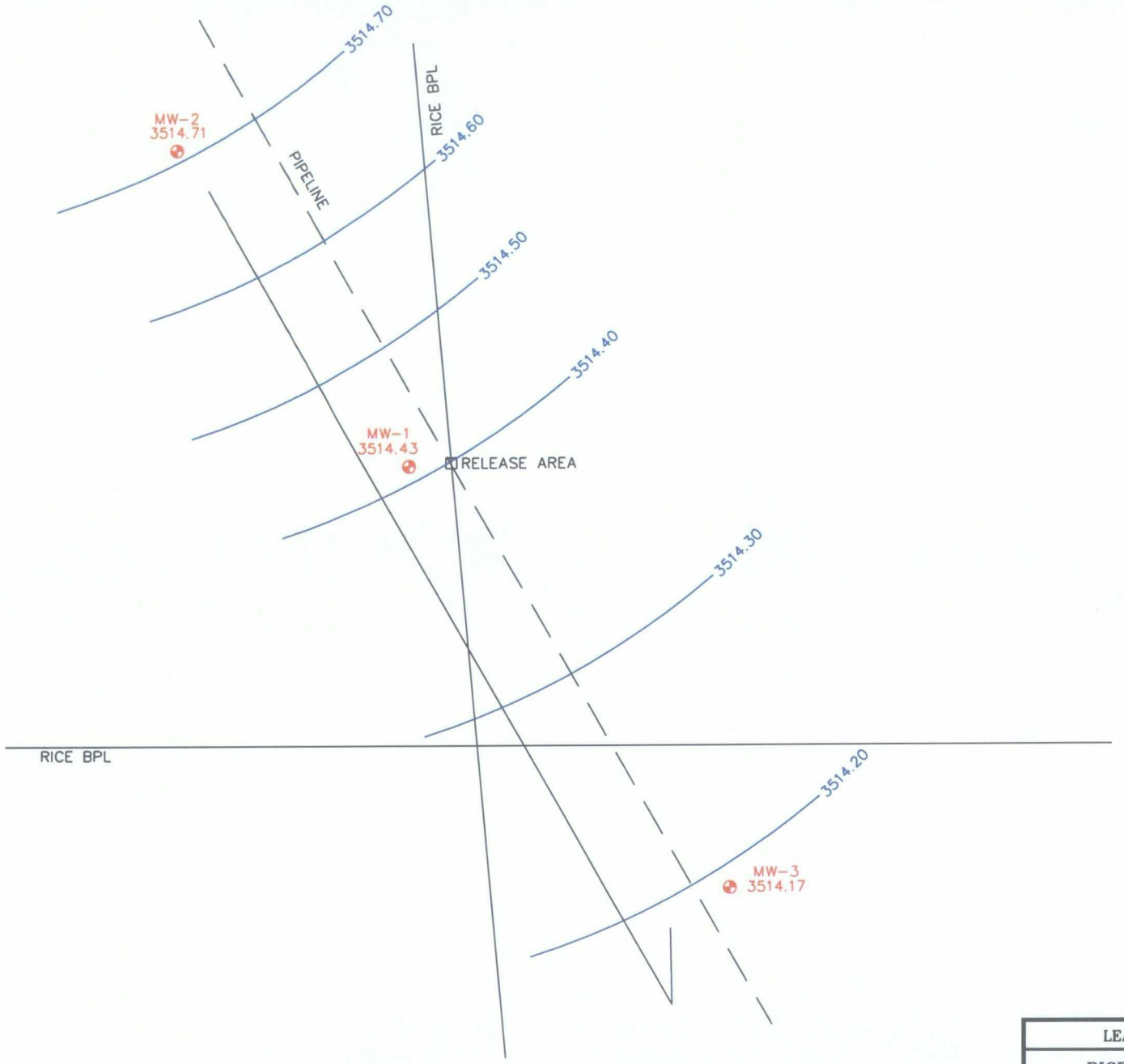
FIGURE NO. 5

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY

EME H-13 LEAK
GROUNDWATER GRADIENT MAP
GAUGED ON 5/7/08

TETRA TECH, INC.
MIDLAND, TEXAS



MONITOR WELL LOCATIONS

CONTOUR INTERVAL = 0.10'

SCALE: 1" = 250'

0 250'

DWN. BY: JJ

FILE: C:\RICE\2307 SITE MAP

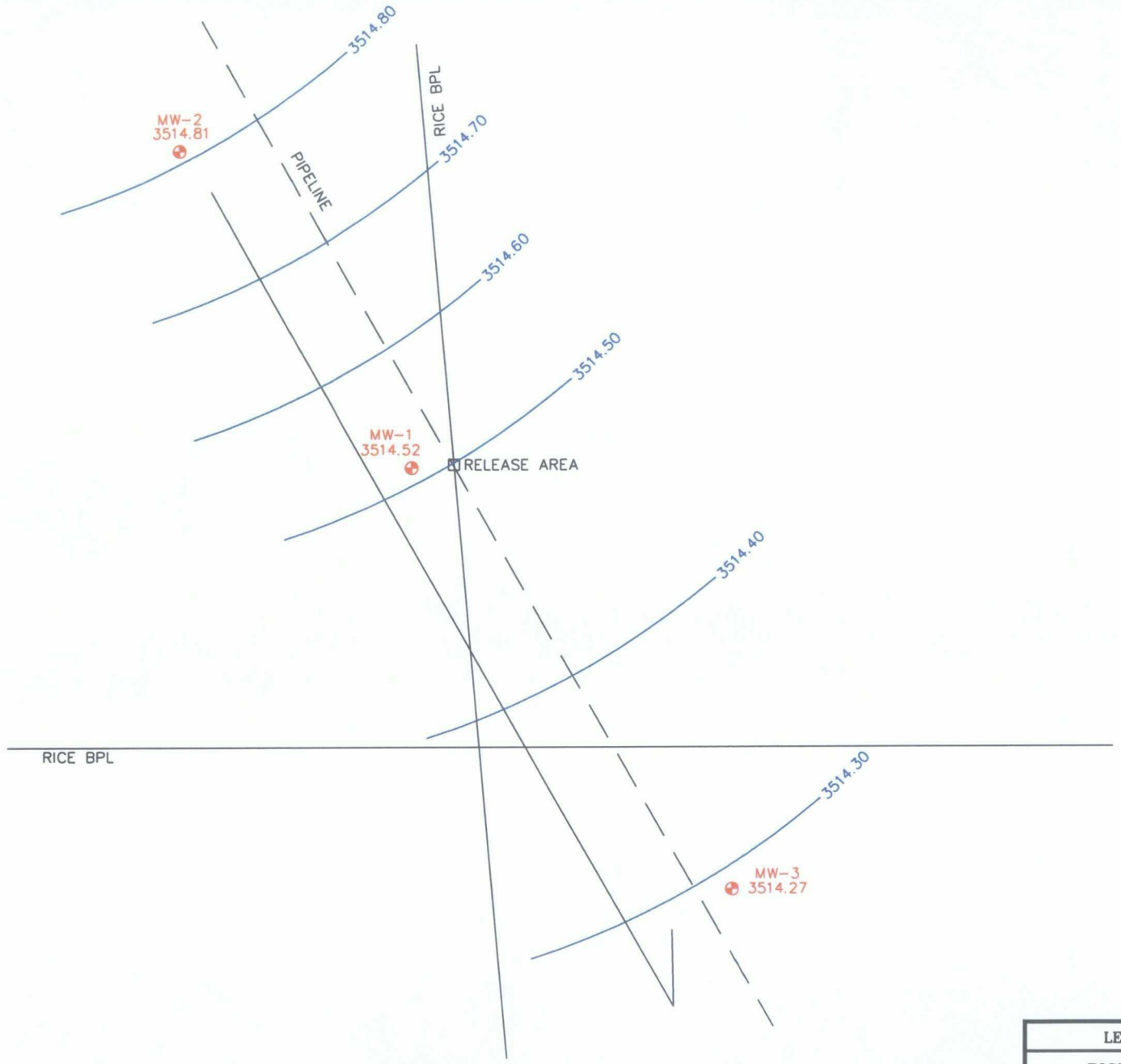
FIGURE NO. 6

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY

EME H-13 LEAK
GROUNDWATER GRADIENT MAP
GAUGED ON 8/13/08

TETRA TECH, INC.
MIDLAND, TEXAS



MONITOR WELL LOCATIONS
CONTOUR INTERVAL = 0.10'

SCALE: 1" = 250'
0 250'

DWN. BY: JJ
FILE: C:\RICE\2307 SITE MAP

FIGURE NO. 7

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY

EME H-13 LEAK
GROUNDWATER GRADIENT MAP
GAUGED ON 11/17/08

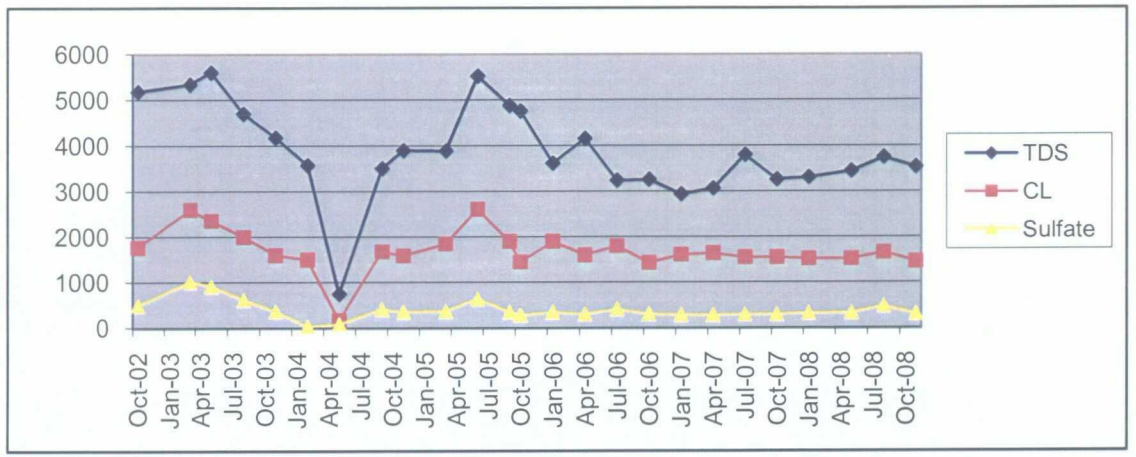
TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

Rice Operating Company
H-13
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	33.19	43.94	1.72	5.25	10/29/02	1770	5180	<0.001	<0.001	<0.001	<0.001	497	
1	33.18	43.90	1.71	5.10	03/06/03	2600	5340	<0.001	<0.001	<0.001	<0.001	1020	
1	33.20	43.91	1.21	5.10	05/29/03	2360	5600	<0.001	<0.001	<0.001	<0.001	920	
1	33.40	43.90	1.68	5.04	08/22/03	2000	4700	<0.001	<0.001	<0.001	<0.001	622	
1	33.35	43.91	1.60	5.00	11/19/03	1600	4180	<0.001	<0.001	<0.001	0.001	370	
1	33.41	43.90	1.67	5.00	02/18/04	1500	3580	<0.002	<0.002	<0.002	<0.006	44	
1	33.56	43.90	1.65	5.00	05/27/04	177	751	<0.001	<0.001	<0.001	<0.001	90.8	
1	33.40	44.10	1.71	5.14	09/07/04	1680	3510	<0.001	<0.001	<0.001	<0.001	418	
1	32.85	44.10	1.80	5.40	11/24/04	1590	3900	<0.001	<0.001	<0.001	<0.001	358	
1	32.19	44.10	1.91	25.0	03/30/05	1850	3890	<0.001	<0.001	<0.001	<0.001	376	
1	31.93	44.10	1.95	10.0	06/21/05	2610	5520	<0.001	<0.001	<0.001	<0.001	641	
1					09/16/05	1900	4880	<0.001	<0.001	<0.001	<0.001	358	
1	31.70	44.10	2.00	6.0	10/19/05	1450	4760	<0.001	<0.001	<0.001	<0.001	286	
1	31.59	44.10	2.00	8.0	01/18/06	1900	3620	<0.001	<0.001	<0.001	<0.001	351	
1	31.66	44.10	2.00	8.0	04/18/06	1600	4160	<0.001	<0.001	<0.001	<0.001	307	
1	31.75	44.10	2.00	10.0	07/17/06	1800	3240	<0.001	<0.001	<0.001	<0.001	412	
1	31.77	44.10	2.00	10.0	10/09/06	1430	3260	<0.001	<0.001	<0.001	<0.001	308	Clear
1	31.72	44.32	2.00	8.0	01/24/07	1610	2940	<0.001	<0.001	<0.001	<0.001	292	Clear/no odor
1	31.68	44.32	2.00	8.0	04/02/07	1640	3070	<0.001	<0.001	<0.001	<0.001	287	Clear/no odor
1	31.69	44.32	2.00	8.0	07/10/07	1550	3800	<0.001	<0.001	<0.001	<0.002	302	Clear
1	31.75	44.32	2.00	7.0	10/01/07	1550	3264	<0.001	<0.001	<0.001	<0.003	300	Clear/no odor
1	31.87	44.32	2.00	7.0	01/22/08	1520	3311	<0.001	<0.001	<0.001	<0.003	329	Clear/no odor
1	31.84	44.32	2.00	7.0	05/07/08	1520	3450	<0.002	<0.002	<0.002	<0.006	340	Clear/no odor
1	31.83	44.32	2.00	7.0	08/13/08	1660	3750	<0.001	<0.001	<0.001	<0.003	484	Clear/no odor
1	31.74	44.32	2.00	7.0	11/17/08	1460	3540	<0.001	<0.001	<0.001	<0.003	317	Clear/no odor
1													

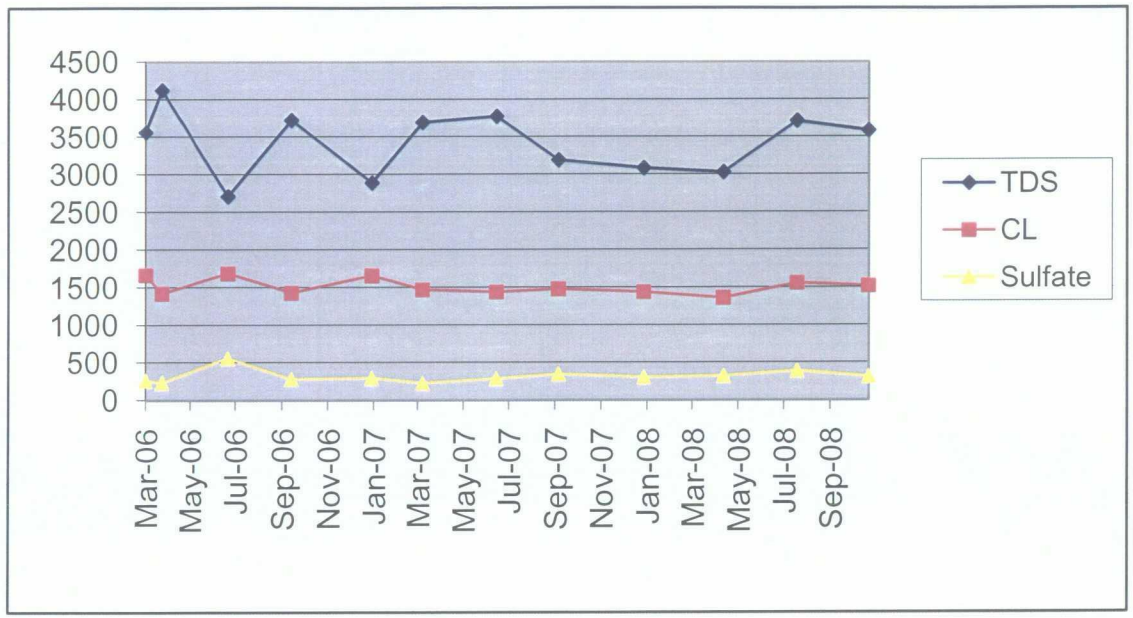
Rice Operating Company
H-13
Lea County, New Mexico
MW-1



Rice Operating Company
H-13
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	30.69	43.10	2.00	8.00	03/27/06	1670	3560	<0.001	<0.001	<0.001	<0.001	264	
2	30.66	43.10	2.00	8.00	04/18/06	1420	4120	<0.001	<0.001	<0.001	<0.001	237	
2	30.80	43.10	2.00	10.00	07/17/06	1690	2710	<0.001	<0.001	<0.001	<0.001	562	
2	30.85	43.10	2.00	10.00	10/09/06	1430	3720	<0.001	<0.001	<0.001	<0.001	284	Clear
2	30.78	43.03	2.00	6.00	01/24/07	1660	2890	<0.001	<0.001	<0.001	<0.001	300	Pumping
2	30.75	43.03	2.00	8.00	04/02/07	1470	3690	<0.001	<0.001	<0.001	<0.001	231	Pumping
2	30.79	43.03	2.00	8.00	07/10/07	1440	3770	<0.001	<0.001	<0.001	<0.002	291	Pumping
2	30.85	43.03	1.90	7.00	10/01/07	1480	3189	<0.001	<0.001	<0.001	<0.003	348	Clear
2	31.00	43.03	1.90	7.00	01/22/08	1440	3083	<0.001	<0.001	<0.001	<0.003	306	Clear
2	30.98	43.03	1.90	7.00	05/07/08	1360	3030	<0.002	<0.002	<0.002	<0.006	325	Clear
2	30.86	43.03	1.90	7.00	08/13/08	1560	3710	<0.001	<0.001	<0.001	<0.003	393	Clear
2	30.76	43.03	2.00	7.00	11/17/08	1520	3580	<0.001	<0.001	<0.001	<0.003	317	Clear
2													

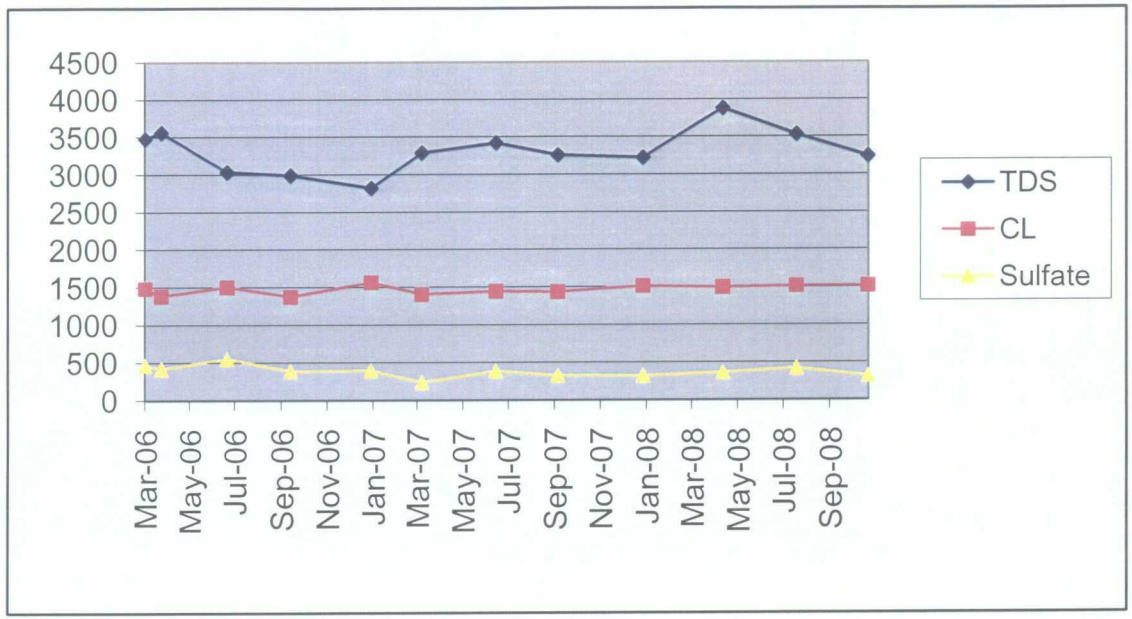
Rice Operating Company
H-13
Lea County, New Mexico
MW-2



Rice Operating Company
H-13
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	31.89	46.00	2.30	8.00	03/27/06	1490	3480	<0.001	<0.001	<0.001	<0.001	472	
3	31.85	46.00	2.30	10.00	04/18/06	1390	3560	<0.001	<0.001	<0.001	<0.001	426	
3	32.08	46.00	2.20	10.00	07/17/06	1510	3035	<0.001	<0.001	<0.001	<0.001	557	
3	32.04	46.00	2.20	10.00	10/09/06	1380	2990	<0.001	<0.001	<0.001	<0.001	393	Clear
3	31.96	46.00	2.20	8.00	01/24/07	1570	2820	<0.001	<0.001	<0.001	<0.001	398	Pumping
3	31.93	46.00	2.30	8.00	04/02/07	1410	3290	<0.001	<0.001	<0.001	<0.001	242	Pumping
3	31.95	46.00	2.20	8.00	07/10/07	1450	3420	<0.001	<0.001	<0.001	<0.002	392	Pumping
3	32.02	46.00	2.20	8.00	10/01/07	1440	3257	<0.001	<0.001	<0.001	<0.003	332	Clear
3	31.88	45.98	2.30	8.00	01/22/08	1520	3225	<0.001	<0.001	<0.001	<0.003	328	Clear
3	31.85	45.98	2.30	8.00	05/07/08	1500	3880	<0.002	<0.002	<0.002	<0.006	368	Clear
3	32.08	45.98	2.20	8.00	08/13/08	1520	3530	<0.001	<0.001	<0.001	<0.003	425	Clear
3	31.98	45.98	2.20	8.00	11/17/08	1520	3240	<0.001	<0.001	<0.001	<0.003	321	Clear
3													

Rice Operating Company
H-13
Lea County, New Mexico
MW-3



APPENDIX A
LABORATORY ANALYTICAL

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR STREET
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 01/24/08
Reporting Date: 01/28/08
Project Number: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H~LEA COUNTY, NM

Sampling Date: 01/22/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: HM/KS

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		01/28/08	01/28/08	01/28/08	01/28/08	01/25/08	01/25/08
H14153-1	MONITOR WELL #1	670	283	131	9.58	5,400	232
H14153-2	MONITOR WELL #2	640	269	119	7.30	5,120	216
H14153-3	MONITOR WELL #3	673	286	127	7.70	5,390	228
Quality Control		NR	49.2	51.6	3.16	1,422	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	98.5	103	105	101	NR
Relative Percent Difference		NR	< 0.1	1.5	3.2	0.8	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		01/25/08	01/28/08	01/25/08	01/25/08	01/25/08	01/23/08
H14153-1	MONITOR WELL #1	1,520	329	0	283	7.20	3,311
H14153-2	MONITOR WELL #2	1,440	306	0	264	7.20	3,083
H14153-3	MONITOR WELL #3	1,520	328	0	278	7.11	3,225
Quality Control		500	23.8	NR	1000	7.03	NR
True Value QC		500	25.0	NR	1000	7.00	NR
% Recovery		100	95.3	NR	100	100	NR
Relative Percent Difference		< 0.1	11.7	NR	< 0.1	0.1	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

01-30-08
Date

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR ST.
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 01/24/08
Reporting Date: 01/28/08
Project Owner: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H ~ LEA CO., NM

Sampling Date: 01/22/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		01/25/08	01/25/08	01/25/08	01/25/08
H14153-1	MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
H14153-2	MONITOR WELL #2	<0.001	<0.001	<0.001	<0.003
H14153-3	MONITOR WELL #3	<0.001	<0.001	<0.001	<0.003
Quality Control		0.100	0.091	0.096	0.281
True Value QC		0.100	0.100	0.100	0.300
% Recovery		100	91.1	96.4	93.5
Relative Percent Difference		3.1	<0.1	0.3	0.3

METHOD: EPA SW-846 8021B

Chemist

01/29/08
Date

H14153B 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:	BILL TO Company:	PO#
RICE Operating Company	RICE Operating Company	
Project Manager:	**Address:** (Street, City, Zip)	
Kristin Farris-Pope, Project Scientist	122 W Taylor Street ~ Hobbs, New Mexico 88240	
Address: (Street, City, Zip)	**Phone#:**	**Fax#:**
122 W Taylor Street ~ Hobbs, New Mexico 88240	(575) 393-9174	(575)397-1471
Phone #:	**Fax #:**	
(575) 393-9174	(575)397-1471	
Project #:	**Project Name:**	
	EME H-13 Leak	
Project Location:	**Sampler Signature:**	Rozanne Johnson (575)631-9310
T20S-R36E-Sec13 H ~ Lea County New Mexico		rozanne@valornet.com

ANALYSIS REQUEST
(Circle or Specify Method No.)

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 (2008)	TIME	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)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
H14153-1	Monitor Well #1	G	3	X				2				1		1-22	13:05		X																X	X	X		
-2	Monitor Well #2	G	3	X				2				1		1-22	14:00		X																X	X	X		
-3	Monitor Well #3	G	3	X				2				1		1-22	12:10		X																X	X	X		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Rozanne Johnson	1-24-08	2:25p	Nicte LeBeau	1/24/08	2:25p
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:

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

REMARKS:

Email Results to: kpope@riceswd.com
lweinheimer@riceswd.com
rozanne@valornet.com

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

Sample Condition: Cool: Yes / No; Intact: Yes / No

CHECKED BY: (Initials)

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR STREET
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 05/09/08
Reporting Date: 05/13/08
Project Number: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H ~ LEA COUNTY, NM

Sampling Date: 05/07/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: CK
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		05/12/08	05/12/08	05/12/08	05/12/08
H14784-1	MONITOR WELL #1	<0.002	<0.002	<0.002	<0.006
H14784-2	MONITOR WELL #2	<0.002	<0.002	<0.002	<0.006
H14784-3	MONITOR WELL #3	<0.002	<0.002	<0.002	<0.006
Quality Control		0.088	0.097	0.100	0.277
True Value QC		0.100	0.100	0.100	0.300
% Recovery		87.8	97.4	99.6	92.4
Relative Percent Difference		1.0	1.3	2.5	1.4

METHOD: EPA SW-846 8260

Chemist

5/13/08
Date

H14784 RICE

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR STREET
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 05/09/08
Reporting Date: 05/14/08
Project Number: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H~LEA COUNTY, NM

Sampling Date: 05/07/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: CK
Analyzed By: HM/KS

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity ($mgCaCO_3$/L)
ANALYSIS DATE:		05/13/08	05/13/08	05/13/08	05/13/08	05/12/08	05/12/08
H14784-1	MONITOR WELL #1	691	292	117	7.85	5,340	228
H14784-2	MONITOR WELL #2	624	260	107	8.10	4,820	204
H14784-3	MONITOR WELL #3	675	284	129	9.28	5,340	224
Quality Control		NR	51.3	50.5	3.10	1,418	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	103	101	103	100	NR
Relative Percent Difference		NR	3.1	3.8	18.7	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		05/12/08	05/13/08	05/12/08	05/12/08	05/12/08	05/12/08
H14784-1	MONITOR WELL #1	1,520	340	0	278	7.23	3,450
H14784-2	MONITOR WELL #2	1,360	325	0	249	7.21	3,030
H14784-3	MONITOR WELL #3	1,500	368	0	273	7.15	3,880
Quality Control		500	42.6	NR	988	7.03	NR
True Value QC		500	40.0	NR	1000	7.00	NR
% Recovery		100	106	NR	98.8	100	NR
Relative Percent Difference		< 0.1	5.2	NR	1.2	0.1	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Kristin Dyer
Chemist

05/15/08
Date

H14784 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:	BILL TO Company:	PO#
RICE Operating Company	RICE Operating Company	
Project Manager:	**Address:** (Street, City, Zip)	
Kristin Farris-Pope, Project Scientist	122 W Taylor Street ~ Hobbs, New Mexico 88240	
Address: (Street, City, Zip)	**Phone#:**	**Fax#:**
122 W Taylor Street ~ Hobbs, New Mexico 88240	(575) 393-9174	(575)397-1471
Phone #:	**Fax #:**	
(575) 393-9174	(575)397-1471	
Project #:	**Project Name:**	
	EME H-13 Leak	
Project Location:	**Sampler Signature:**	Rozanne Johnson (575)631-9310
T20S-R36E-Sec13 H ~ Lea County New Mexico		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 (2008)	TIME
H14784-1	Monitor Well #1	G	3	X				2				1		5-7	8:40
-2	Monitor Well #2	G	3	X				2				1		5-7	9:30
-3	Monitor Well #3	G	3	X				2				1		5-7	7:45

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)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X															X	X	X		
	X															X	X	X		
	X															X	X	X		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Rozanne Johnson	5/9/08	12:55			
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:
			Cilly Keene	5/9/08	12:55

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other:	Cool: Yes ☑ / No ☐ — Intact: Yes ☑ / No ☐	(Initials) CDL

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

REMARKS:

Email Results to: kpope@riceswd.com
lweinheimer@riceswd.com
rozanne@valornet.com

CARDINAL LABORATORIES

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

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

Receiving Date: 08/14/08
Reporting Date: 08/20/08
Project Number: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H ~ LEA COUNTY, NM

Sampling Date: 08/13/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: HM/TR

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity ($mgCaCO_3$/L)
ANALYSIS DATE:		08/18/08	08/18/08	08/18/08	08/18/08	08/15/08	08/15/08
H15740-1	MONITOR WELL #1	922	333	53.5	10.7	5,000	228
H15740-2	MONITOR WELL #2	835	321	48.6	10.4	5,050	224
H15740-3	MONITOR WELL #3	726	248	146	9.5	4,900	228
Quality Control		NR	52.1	51.0	2.80	1,410	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	104	102	92.8	99.8	NR
Relative Percent Difference		NR	< 0.1	4.8	13.0	0.7	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		08/15/08	08/15/08	08/15/08	08/15/08	08/15/08	08/17/08
H15740-1	MONITOR WELL #1	1,660	484	0	278	7.00	3,750
H15740-2	MONITOR WELL #2	1,560	393	0	273	7.00	3,710
H15740-3	MONITOR WELL #3	1,520	425	0	278	7.08	3,530
Quality Control		500	45.0	NR	1000	7.00	NR
True Value QC		500	40.0	NR	1000	7.00	NR
% Recovery		100	112	NR	100	100	NR
Relative Percent Difference		2.0	0.4	NR	1.2	0.1	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

08-22-08
Date

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
FAX TO: (575) 397-1471

Receiving Date: 08/14/08
Reporting Date: 08/19/08
Project Number: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H ~ LEA CO., NM

Sampling Date: 08/13/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		08/15/08	08/15/08	08/15/08	08/15/08
H15740-1	MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
H15740-2	MONITOR WELL #2	<0.001	<0.001	<0.001	<0.003
H15740-3	MONITOR WELL #3	<0.001	<0.001	<0.001	<0.003
Quality Control		0.055	0.047	0.049	0.161
True Value QC		0.050	0.050	0.050	0.150
% Recovery		109	94.7	98.1	107
Relative Percent Difference		3.8	2.2	2.2	<0.1

METHOD: EPA SW-846 8021

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

Chemist

08/21/08
Date

H15740WB.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: EME H-13 Leak
Project Location: T20S-R36E-Sec13 H ~ 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 (2008)	TIME
H15746-1	Monitor Well #1	G	3	X				2				1		8-13	8:50
-2	Monitor Well #2	G	3	X				2				1		8-13	9:40
-3	Monitor Well #3	G	3	X				2				1		8-13	8:00

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)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X															X	X	X		
	X															X	X	X		
	X															X	X	X		

Relinquished by: Rozanne Johnson	Date: 8/14/08	Time: 7:10	Received by: Cathy Watkins	Date: 8/14/08 Time: 7 11
Relinquished by: Cathy Watkins	Date: 8/14/08	Time: 14:20	Received By: (Laboratory Staff)	Date: 8/14/08 Time: 2:00

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

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

CHECKED BY: (Initials) MC KB

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

REMARKS:

Email Re: hconder@riceswd.com
lweinheimer@riceswd.com
rozanne@valornet.com

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
FAX TO: (575) 397-1471

Receiving Date: 11/19/08
Reporting Date: 11/26/08
Project Number: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H~ LEA CO., NM

Sampling Date: 11/17/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		11/25/08	11/25/08	11/25/08	11/25/08
H16360-1	MONITOR WELL #1	<0.001	<0.001	<0.001	<0.003
H16360-2	MONITOR WELL #2	<0.001	<0.001	<0.001	<0.003
H16360-3	MONITOR WELL #3	<0.001	<0.001	<0.001	<0.003
Quality Control		0.060	0.049	0.055	0.151
True Value QC		0.050	0.050	0.050	0.150
% Recovery		120	98.0	110	101
Relative Percent Difference		3.4	2.1	1.2	3.0

METHOD: EPA SW-846 8260B

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

Chemist

11/26/08
Date

H16360 WB RICE

CARDINAL LABORATORIES

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

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

Receiving Date: 11/19/08
Reporting Date: 11/24/08
Project Number: NOT GIVEN
Project Name: EME H-13 LEAK
Project Location: T20S-R36E-SEC13 H ~ LEA CO., NM

Sampling Date: 11/17/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: HM/TR

LAB NUMBE SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	11/24/08	11/21/08	11/24/08	11/21/08	11/20/08	11/20/08
H16360-1 MONITOR WELL #1	653	289	112	9.2	4,680	228
H16360-2 MONITOR WELL #2	656	305	122	8.8	4,670	232
H16360-3 MONITOR WELL #3	682	305	107	10.2	4,500	224
Quality Control	NR	48.1	48.6	2.77	1,430	NR
True Value QC	NR	50.0	50.0	3.00	1,413	NR
% Recovery	NR	96.2	97.2	92.4	101	NR
Relative Percent Difference	NR	8.0	<0.1	10.3	0.1	NR

METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

	Cl (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	11/21/08	11/21/08	11/20/08	11/20/08	11/20/08	11/19/08
H16360-1 MONITOR WELL #1	1,460	317	0	278	7.05	3,540
H16360-2 MONITOR WELL #2	1,520	317	0	283	7.07	3,580
H16360-3 MONITOR WELL #3	1,520	321	0	273	7.11	3,240
Quality Control	500	45.5	NR	1000	7.02	NR
True Value QC	500	40.0	NR	1000	7.00	NR
% Recovery	100	114	NR	100	100	NR
Relative Percent Difference	<0.1	1.6	NR	<0.1	0.1	NR

METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

11-25-08
Date

H16360 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:	BILL TO Company:	PO#
RICE Operating Company	RICE Operating Company	
Project Manager:	**Address:** (Street, City, Zip)	
Hack Conder	122 W Taylor Street ~ Hobbs, New Mexico 88240	
Address: (Street, City, Zip)	**Phone#:**	**Fax#:**
122 W Taylor Street ~ Hobbs, New Mexico 88240	(575) 393-9174	(575)397-1471
Phone #:	**Fax #:**	
(575) 393-9174	(575)397-1471	
Project #:	**Project Name:**	
	EME H-13 Leak	
Project Location:	**Sampler Signature:**	Rozanne Johnson (575)631-9310
T20S-R36E-Sec13 H ~ Lea County New Mexico		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 (2008)	TIME
H16360-1	Monitor Well #1	G	3	X				2				1		11-17	10:05
-2	Monitor Well #2	G	3	X				2				1		11-17	10:55
-3	Monitor Well #3	G	3	X				2				1		11-17	9:20

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)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X															X	X	X		
	X															X	X	X		
	X															X	X	X		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Rozanne Johnson	11/19/2008	10:00		11/19/2008	10:01
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:
	11/19/08	15:30		11/19/08	3:30

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

REMARKS:

Email Re: hconder@riceswd.com
lweinheimer@riceswd.com
rozanne@valornet.com

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other:	Cool: Yes ☑ / No ☐ — Intact: Yes ☑ / No ☐	(Initials) MCB