1R - 426-09

WORKPLANS

DATE:

9-8-08

TETRA TECH

CERTIFIED MAIL
RETURN RECIEPT NO. 7005 1160 0005 3780 7457

September 8, 2008

Mr. Wayne Price
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87504

RE: **CORRECTIVE ACTION PLAN (CAP)**
H-19 VENT, BD SWD SYSTEM
UNIT "H", SEC. 19, T21S, R37E
LEA COUNTY, NEW MEXICO
NMOCD #1R0426-09

Mr. Price:

RICE Operating Company (ROC) has retained Tetra Tech (formerly Highlander Environmental Corp.) to address potential environmental concerns at the above-referenced site. ROC is the service provider (agent) for the Blinebry Drinkard (BD) SWD System (System) and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental projects of this magnitude require System Partner AFE approval and work begins as funds are received. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is requested.

For all environmental projects, ROC will choose a path forward that:

- protects public health,
- provides the greatest net environmental benefit,
- complies with NMOCD Rules, and
- is supported by good science.

Each site shall have three submissions or a combination of:

1. An **Investigation and Characterization Plan** (ICP) is a proposal for data gathering and site characterization and assessment.

Tetra Tech
1910 North Big Spring, Midland, TX 79705
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2. Upon evaluating the data and results from the ICP, a recommended remedy is submitted in this **Corrective Action Plan** (CAP).

3. Finally, after implementing the remedy, a **Closure Report** with final documentation will be submitted.

1.0 BACKGROUND & PREVIOUS WORK

As part of the ROC Junction Box Upgrade Workplan, starting on July 14, 2003, the H-19 was moved 25' to the northwest. The site location is shown on Figure 1 and Figure 2. The former junction box site was investigated vertically and horizontally with a trench utilizing a backhoe. The site was delineated to 12 feet below ground surface (bgs) where chlorides were 9,570 mg/kg and TPH was 1,550 mg/kg. No water wells were located within Section 19 which contains the site. However, according to the USGS Well Report, one water well is located in adjacent Section 18 with a depth to groundwater of 98 feet bgs.

Upon completion of the excavation, the trench was backfilled and contoured to the surrounding surface. On September 16, 2003, ROC submitted a Junction Box Disclosure Report to the NMOCD. A copy of the Junction Box Disclosure Report is included in Appendix A.

On August 3, 2007, ROC submitted the ICP to Mr. Wayne Price of the NMOCD-Santa Fe office for review. Mr. Price granted approval of the ICP in a letter dated August 13, 2007.

On April 4, 2008, Tetra Tech personnel were onsite to oversee the installation of one soil boring (SB-1) within the former junction box location. Soil samples were collected every 5 feet beginning at a depth of 5 feet bgs within the excavated area. Samples were collected utilizing a split spoon sampler and were field screened for TPH utilizing a photoionization detector (PID) and for chlorides with a field sampling kit. Field results indicate the soils are impacted with chlorides to a depth of 90 feet bgs with no PID readings to indicate TPH within the soil. The soil boring location is shown on Figure 3. The soil boring log is included in Appendix B.

In order to determine if groundwater was impacted from the former junction box, one monitor well was installed (MW-1) to the southeast of the excavated junction box to a depth of 133 feet bgs. Upon completion, the monitor well was developed and samplesbmitted to Cardinal Labs of Hobbs, New Mexico for analysis of chlorides utilizing EPA method 300.0 and BTEX utilizing EPA method 8021B. The results of the groundwater sampling are summarized in Table 1. Referring to Table 1, no BTEX was detected in the groundwater, while chloride concentrations ranged from 516 to 560 mg/L. The monitor well completion diagram is included in Appendix B.

On June 3, 2008, ROC submitted a Notification of Groundwater Impact to Mr. Wayne Price of the NMOCD-Santa Fe office.

TETRA TECH

2.0 COLLECTED REGIONAL HYDROGEOLOGIC DATA

Groundwater was encountered at 120 feet bgs in the installed monitor well MW-1 located at the site. No other water wells were located within Section 19 which contains the site.

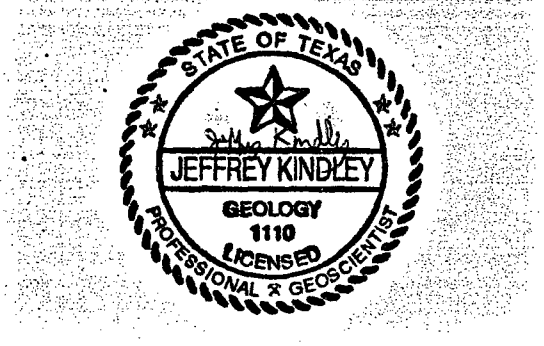
3.0 EVALUATION

When evaluating any proposed remedy or investigative work, ROC will confirm that there is a reasonable relationship between the benefits created by the proposed remedy or assessment and the economic and social costs. In evaluating the documented levels of chlorides within the soil, it was determined that a clay liner be utilized to prevent further vertical migration of the chlorides into the surrounding underlying soils.

4.0 PROPOSED REMEDY

Groundwater is 120' bgs with elevated chloride concentrations in the soil and the groundwater. As such, ROC proposes installation of additional soil borings adjacent to the former junction box in order to complete delineation of the soils. In addition, ROC proposes installation of one up gradient and one down gradient monitor well in order to further delineate the chloride impact to the groundwater. Upon completion of the additional soil borings, ROC will evaluate the data to determine dimensions required for placement of a clay liner in the former junction box area. The clay liner will be installed approximately 4 feet below ground surface and the excavated soils will be field screened for chlorides. If the chloride results are below 1,000 mg/kg, the soils will be placed over the clay liner and reseeded with native vegetation.

If you require any additional information or have any questions or comments, please contact either myself or Tim Reed at 432-682-4559. Thank you for your attention to this matter.



Tetra Tech

Jeffrey Kindley, P.G
Senior Environmental Geologist

cc: ROC- Hach Conder
NMOCD-Ed Hansen

enclosures: site maps, data tables, figures

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FIGURES

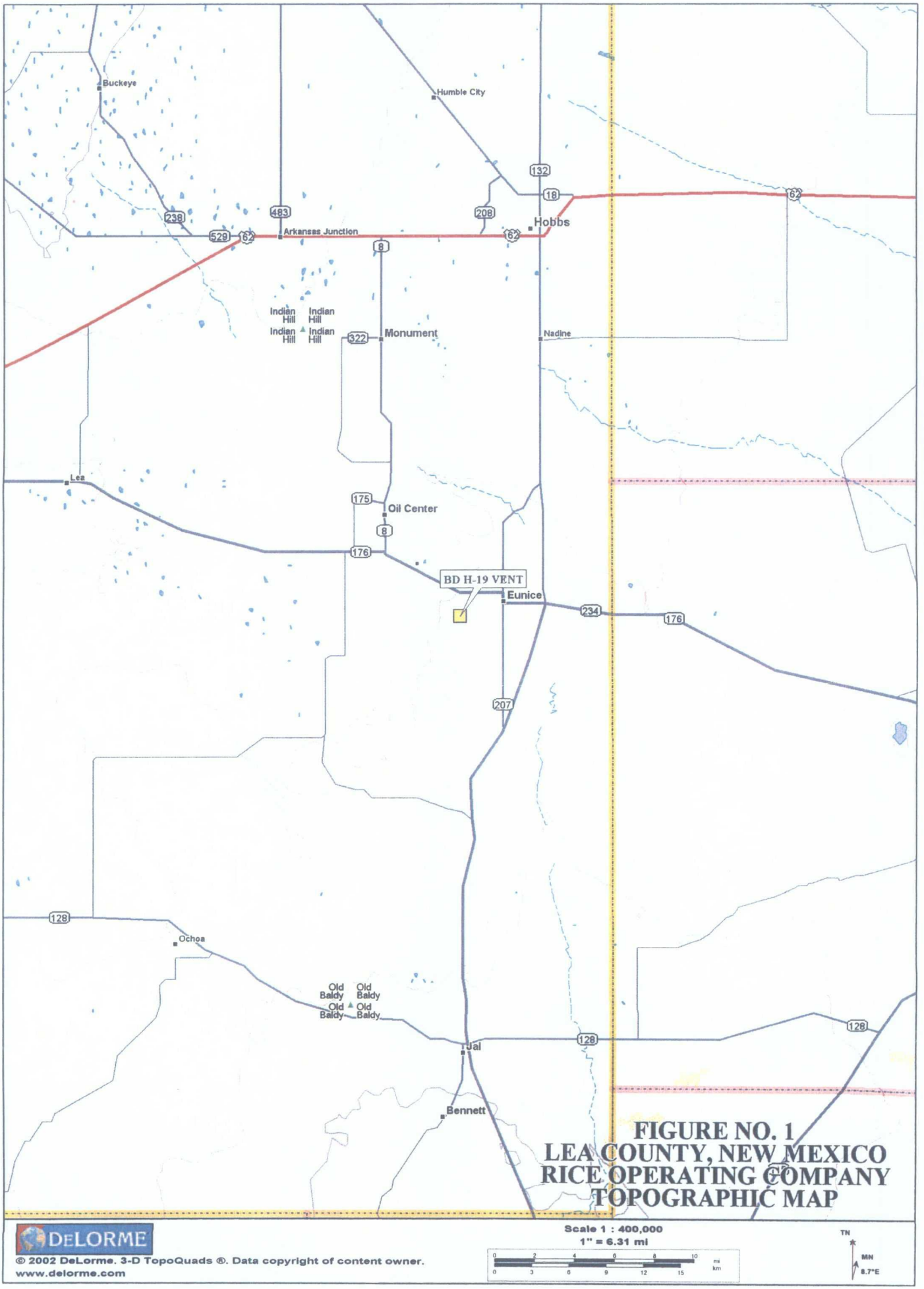


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

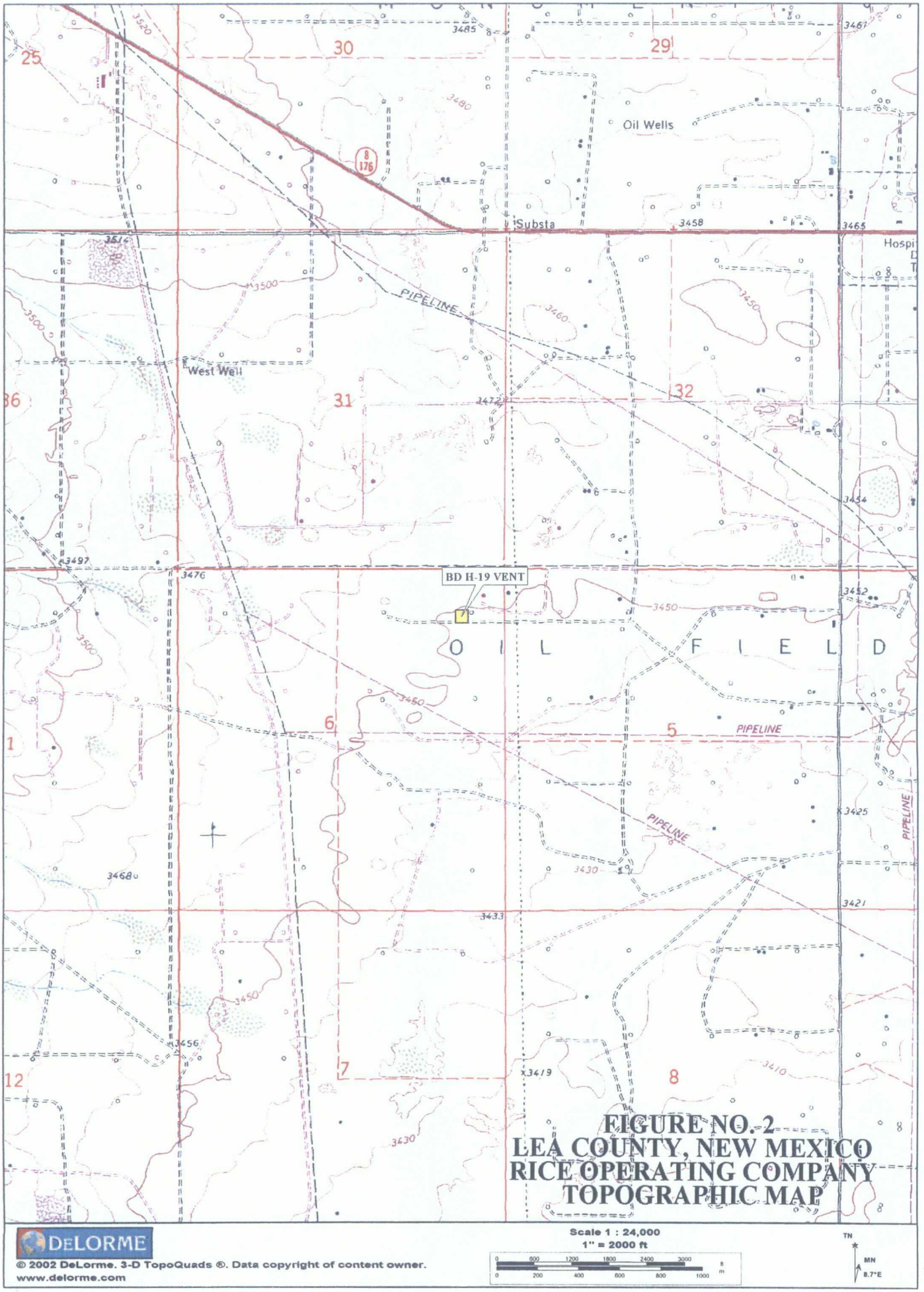


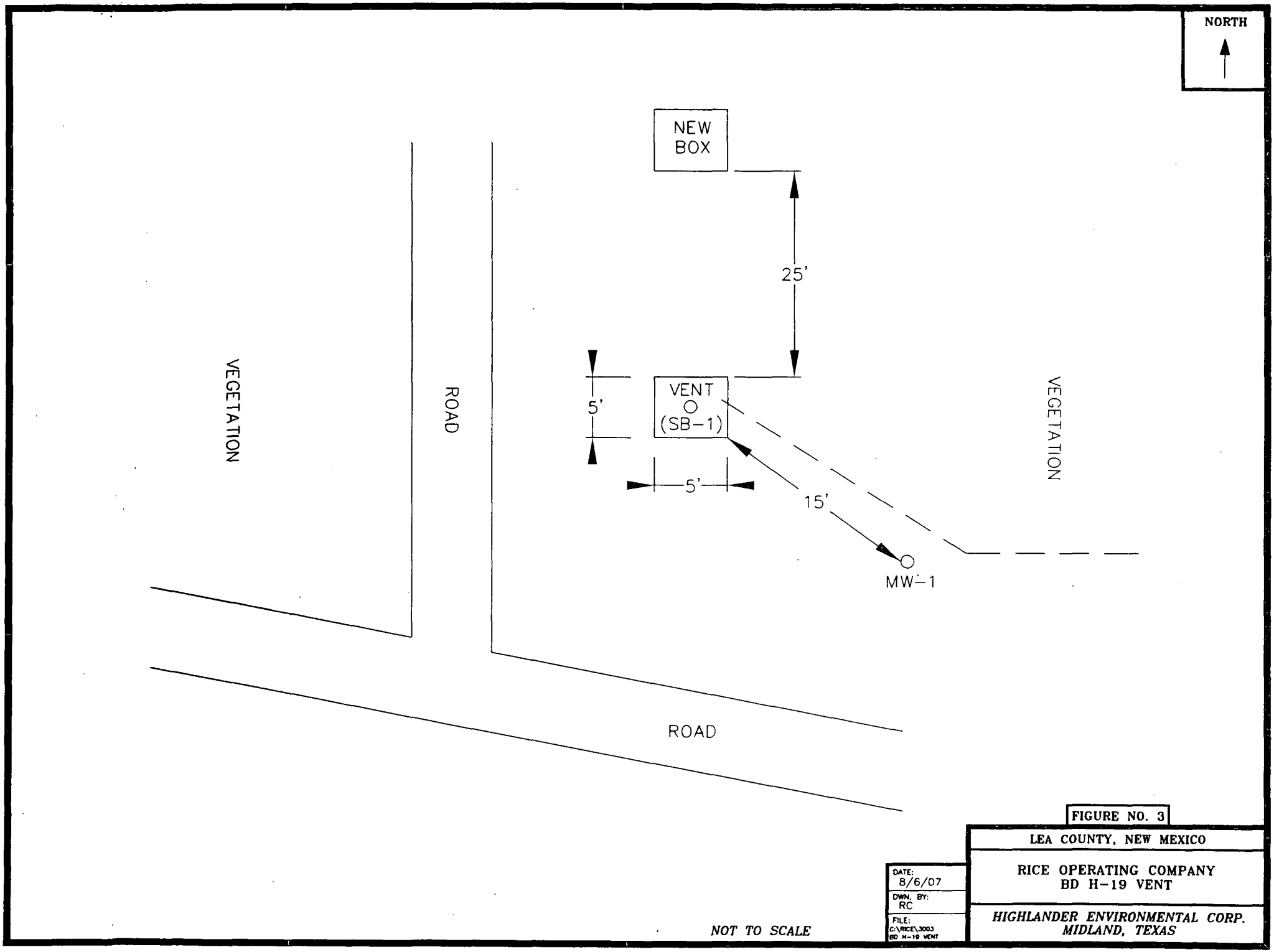
FIGURE NO. 2
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

DeLORME

Scale 1 : 24,000
1" = 2000 ft

0 600 1200 1800 2400 3000 ft
0 200 400 600 800 1000 m

TN
MN
8.7°E



NOT TO SCALE

DATE: 8/6/07
DWN. BY: RC
FILE: C:\RICE\3003 BD H-19 VENT

FIGURE NO. 3

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY
BD H-19 VENT

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

TABLES

Rice Engineering Operating
H-19 Vent
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	120.78	137.25	2.60	10	04/23/08	516	1270	<0.001	<0.001	<0.001	<0.003	106	Clear no odor
1	120.96	137.25	2.60	10	07/08/08	560	1400	<0.001	<0.001	<0.001	0.006	95.5	Clear no odor
1													
1													
1													
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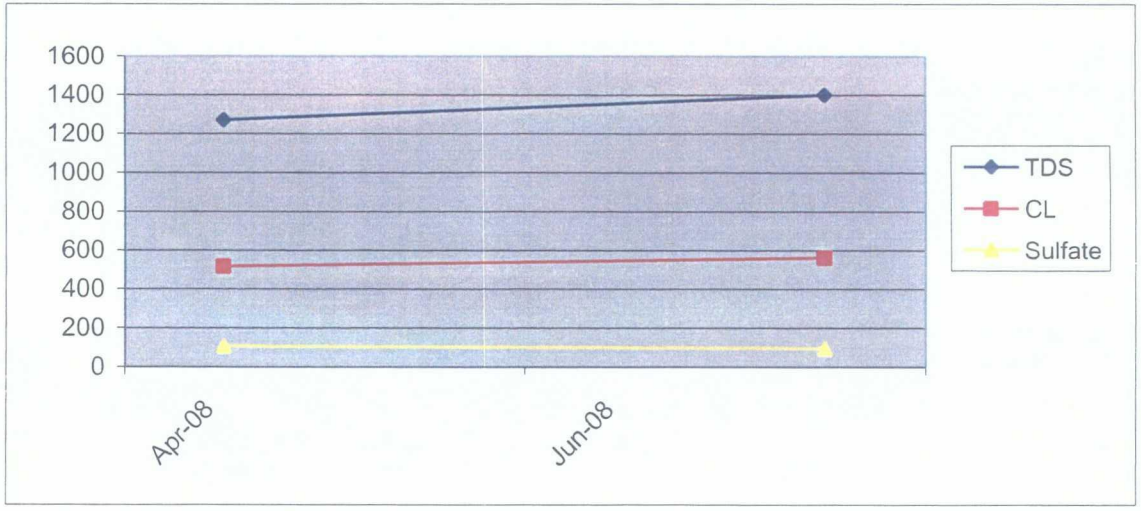
1													



APPENDIX A
JUNCTION BOX DISCLOSURE REPORT

RICE OPERATING COMPANY
JUNCTION BOX DISCLOSURE* REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
BD	H-19	H	19	21 S	37 E	Lea	Moved 25 ft northwest		

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Joe Robin Sims OTHER _____

Depth to Groundwater 99 feet NMOCD SITE ASSESSMENT RANKING SCORE: 10

Date Started 7/14/2003 Date Completed 8/6/2003 OCD Witness No

Soil Excavated 16 cubic yards Excavation Length 12 Width 3 Depth 12 feet

Soil Disposed 0 cubic yards Offsite Facility n/a Location n/a

FINAL ANALYTICAL RESULTS: **Sample Date** 8/6/2003 **Sample Depth** 12 ft bgs

Procure 5-point composite sample of bottom and 4-point composite sample of sidewalls. TPH, BTEX and Chloride laboratory test results completed by using an approved lab and testing procedures pursuant to NMOCD guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chloride mg/kg
Vertical @ 12 ft	<0.025	<0.025	<0.025	<0.025	<10.0	1550	9570

General Description of Remedial Action: During vertical delineation, it became apparent that chloride concentrations did not significantly decline with depth. There were elevated TPH concentrations down to the 12 ft sample where NOOCD guideline concentrations were not met. The hole was backfilled and the location identified for further consideration at a later date. A new watertight junction box has been built 25 ft northwest of this site.

ADDITIONAL EVALUATION IS *HIGH* PRIORITY.

cc: lab results, chloride graph, photos

CHLORIDE FIELD TESTS

LOCATION	DEPTH (ft)	ppm
Vertical	6	2300
	8	2400
	10	2250
	12	5200

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE 9/16/2003 PRINTED NAME Kristin Farris

SIGNATURE Kristin Farris TITLE Project Scientist

** This site is a "DISCLOSURE." It will be placed on a prioritized list of similar sites for further consideration.*

APPENDIX B
SOIL BORING LOG/MONITOR WELL COMPLETION DIAGRAM

SAMPLE LOG

Boring/Well: SB-1
Project Number: 3003
Client: Rice Engineering
Site Location: BD H-19 Vent
Location: Lea County, New Mexico
Total Depth 90
Date Installed: 04/04/08

DEPTH (in feet)	OVM	CHLORIDES (Field) (in mg/Kg)	SAMPLE DESCRIPTION
5-7	0	899	Tan silty sand with some caliche intermixed
10-12	0	3391	Dense layer of caliche with tan silty sand
15-17	0	3656	White dense caliche
20-21	0	3243	Buff/tan silty sand with caliche intermixed (50/50)
25-26	0.4	1873	Light brown fine grain sand (blow sand), loose
30-32	0	2195	Light brown fine grain sand (blow sand), loose
35-37	0	2421	Tan fine grain sand
40-42	0	2562	Tan fine grain sand, loose
45-47	0	2015	Tan fine grain sand, loose
50-52	0	2329	Tan fine grain sand, loose
55-57	0	2064	Tan fine grain sand, loose
60-62	0	2002	Tan fine grain sand, loose
65-67	0	2929	Tan fine grain sand, loose
70-72	0	1804	Tan fine grain sand, loose and slightly damp
75-77	0	1729	Tan fine grain sand, loose
80-82	0	1297	Tan fine grain sand, loose
85-87	0	1671	Tan fine grain sand, loose
88-90	0	2553	Tan fine grain sand, loose

Boring completed at 90 feet bgs Groundwater was not encountered.

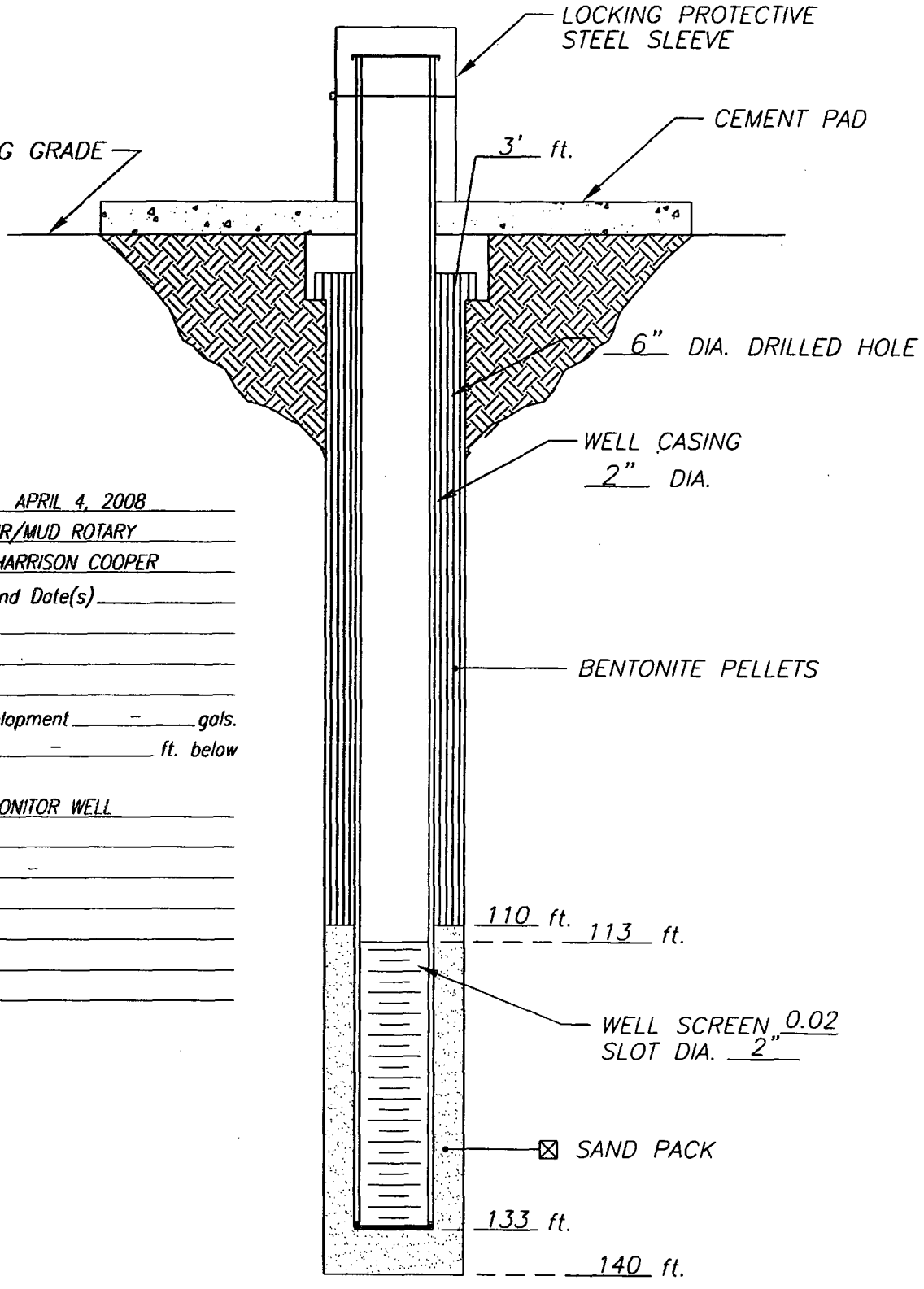
SAMPLE LOG

Boring/Well: MW-1
Project Number: 3003
Client: Rice Engineering
Site Location: BD H-19 Vent
Location: Lea County, New Mexico
Total Depth 133
Date Installed: 04/04/08

DEPTH (in feet)	OVM	CHLORIDES (Field) (in mg/Kg)	SAMPLE DESCRIPTION
5-7	0.7	1641	Light brown fine grain sand with caliche
10-12	0.2	3258	Light brown fine grain sand with caliche
15-17	0	3068	Buff dense limestone layer with some sand intermixed
20-22	0	3595	Caliche with dense layer intermixed with some sand
25-27	0.3	2173	Tan fine grain sand with compacted dense sand layer
30-32	0	3265	Tan fine grain loose sand
35-37	0	2792	Tan fine grain loose sand
40-42	0	1852	Tan fine grain sand, loose
45-47	0	1352	Tan fine grain sand, loose
50-52	0	2399	Tan fine grain sand, loose
55-57	0	2065	Tan fine grain sand, loose
60-62	0	2107	Tan fine grain sand, loose
65-67	0	1904	Tan fine grain sand, loose with dense layer of sandstone at 66 feet
70-72	0	2196	Dense layer of sandstone intermixed with fine grain sand
75-77	0	824	Brown/red fine grain loose sand, damp
80-82	0	884	Brown/red fine grain loose sand, damp
85-87	0	1110	Brown/red fine grain loose sand, damp
90-92			Tan fine grain sand (wet)
100-102			Tan fine grain sand (wet)
110-112			Tan fine grain sand with some sandstone intermixed
120-122			Tan fine grain sand with some sandstone intermixed
131-133			Tan fine grain sand with some sandstone intermixed

Boring completed at 133 feet bgs Groundwater encountered at approximately 110 feet.

WELL CONSTRUCTION LOG



Installation Date(s) APRIL 4, 2008
Drilling Method AIR/MUD ROTARY
Drilling Contractor HARRISON COOPER
Development Technique(s) and Date(s) –

Water Removed During Development – gals.
Static Depth to Water – ft. below Ground Level
Well Purpose MONITOR WELL

Remarks –

DATE: APRIL 4, 2008	CLIENT: RICE OPERATING	WELL NO.
Highlander Environmental	PROJECT: BD H-19 VENT	MW-1
	LOCATION: LEA COUNTY, NEW MEXICO	