

1R - 415

# REPORTS

DATE:

10-21-08

# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

October 21, 2008

2008 OCT 23 PM 3 29

Edward J. Hansen  
NMOCD  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
VIA EMAIL

RE: Request for Final Closure, Lovington Abo 1G  
Unit G, Section 1, 17S, 36 E  
**NMOCD Case # 1R 0415**

Dear Mr. Hansen:

As you may recall, we submitted a full Closure Report for this site in April of this year. This letter presents recent work at the above-referenced site and requests formal closure of the Rice Operating Company (ROC) file associated with it.

Per our meeting with NMOCD, the City of Lovington, and ROC earlier this year; ROC completed a second monitoring well (MW-2) to the northwest of MW-1 and sampled ground water. MW-2 was drilled on 7/18/08 about 450 feet northwest of MW-1. Plate 1 shows both wells on a recent aerial photograph and Plate 2 shows the water table elevation map of the area using 2006 USGS ground water data. Appendix A presents the lithologic log and completion diagram for MW-2. After MW-2 was completed and developed following standard industry practices, ground water from both wells were sampled on 7/28/08; the results of laboratory analysis found BTEX below detection limits in both wells. Chloride and TDS results from ground water sampling at the site in 2008 are summarized in Table 1. The laboratory results for 2008 ground water sampling are included in Appendix B.

**Table 1.** Abo 1G Ground Water Sampling, 2008

Well Name	Date	Chloride	TDS
		(mg/L)	
MW-1	2/1/2008	228	868
	4/21/2008	328	1,050
	7/28/2008	204	810
MW-2	7/28/2008	364	1,100

This ground water data shows an up-gradient source of chloride near the Lovington Abo1G. This verifies previously presented conclusions that the release at Lovington Abo 1G is not the source of ground water impact observed in MW-1 at the site.

October 21, 2008  
Page 2

We respectfully request NMOCD approve closure of this site in writing. If you have any questions, please do not hesitate to contact me at our office, or Hack Conder at the ROC office.

Sincerely,  
R.T. Hicks Consultants, Ltd.

A handwritten signature in cursive script that reads "Katie Lee".

Katie Lee  
Project Scientist

Copy: City of Lovington  
NMOCD Office, Hobbs NM  
Rice Operation Company

## **Plates**

**R. T. Hicks Consultants, Ltd.**

901 Rio Grande Blvd. Suite F-142  
Albuquerque, NM 87501



Approximate MW  
Location

R.T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd. NW Suite F-142 Albuquerque, NM 87104  
505.266.5004 Fax: 505.266.0745

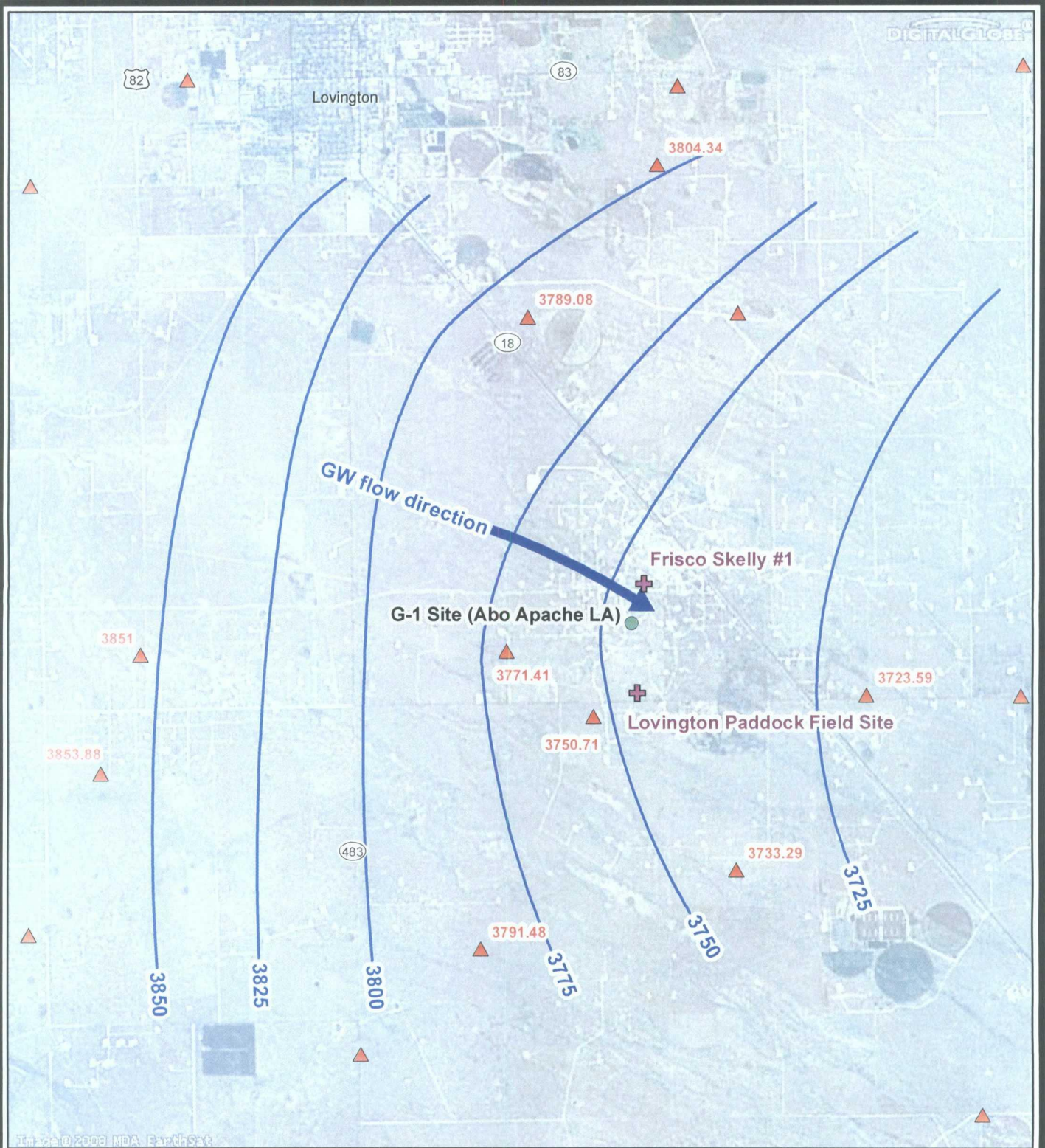
Rice Operating Company: Lovington Abo 1G

Recent Aerial Photo Noting Monitoring Wells

Plate 1

September 2008





## Explanation

### 2006 Potentiometric Surface

— Ground water equipotential (feet msl)



USGS Gauging station  
showing 2006 ground water  
elevation (feet msl)



0 3,500 7,000  
Feet

R.T. Hicks Consultants, Ltd  
901 Rio Grande Blvd NW Suite F-142  
Albuquerque, NM 87104  
Ph: 505.266.5004

2006 Potentiometric Surface

Rice Operating Company  
Lovington Abo 1G

Plate 2

Sept 2008

## **Appendix A:**

### **Lithologic Log & Monitoring Well Completion**

**R. T. Hicks Consultants, Ltd.**

901 Rio Grande Blvd. Suite F-142  
Albuquerque, NM 87501

**R T Hicks  
Consultants Ltd**

P O Box 7624  
Midland, TX 79708  
(432) 528-3878

**LITHOLOGIC LOG (MONITORING WELL)**

MONITOR WELL NO.: MW-2  
SITE ID: Lovington Abo 1G  
SURFACE ELEVATION: 3828 Feet (MSL)  
CONTRACTOR: Harrison & Cooper, Inc.  
DRILLING METHOD: Air-Rotary  
INSTALLATION DATE: 7/18/08  
WELL PLACEMENT: Approx. 450 feet NW of MW-1

TOTAL DEPTH: 119.5 Ft  
CLIENT: Rice Operating Company  
COUNTY: Lea County  
STATE: New Mexico  
LOCATION: T-17-S, R-36-E, Sec. 1 (G)  
FIELD REP.: Dale Littlejohn  
FILE NAME: Abo Apache Lithologs 7-08

COMMENTS: Lat. 32° 52' 4.6" North, Long. 103° 10' 17.5" West

Lithology	Depth	Samples		LITHOLOGIC DESCRIPTION: LITHOLOGY, COLOR, GRAIN SIZE, SORTING, ROUNDING, CONSOL., DIST. FEATURES
		Type	Cl (fld)	
---				SILTY CLAY Dark brown (top soil). Well spud in grassy area
---	5			CALICHE AND SILT Gray to brown, with some fine grain sand.
---	10			SAND Light reddish brown, very fine grain, with some thin bedded caliche beds below 12 feet.
---	15			
---	20			
---	25			CALICHE Gray to white, moderately hard, massive.
---	30			
---	35			
---	40			SAND Light brown, very fine grain, well sorted, angular, thin bedded caliche at 32 feet.
---	45			
---	50			
---	55			SAND Light grayish brown to tan, very fine grain, well sorted, angular, with thin bedded white caliche.
---	60			
---	65			
x x x x				QUARTZITE Dark reddish brown, fine crystalline, very hard, with some granular cemented grayish brown, very fine grain sandstone..
x x x x				
x x x x				
---	60			SAND (unconsolidated) Light reddish brown, very fine grain, well sorted, angular, with no caliche or quartzite.
---	65			
---				

BENTONITE HOLE PLUG

2" PVC BLANK CASING



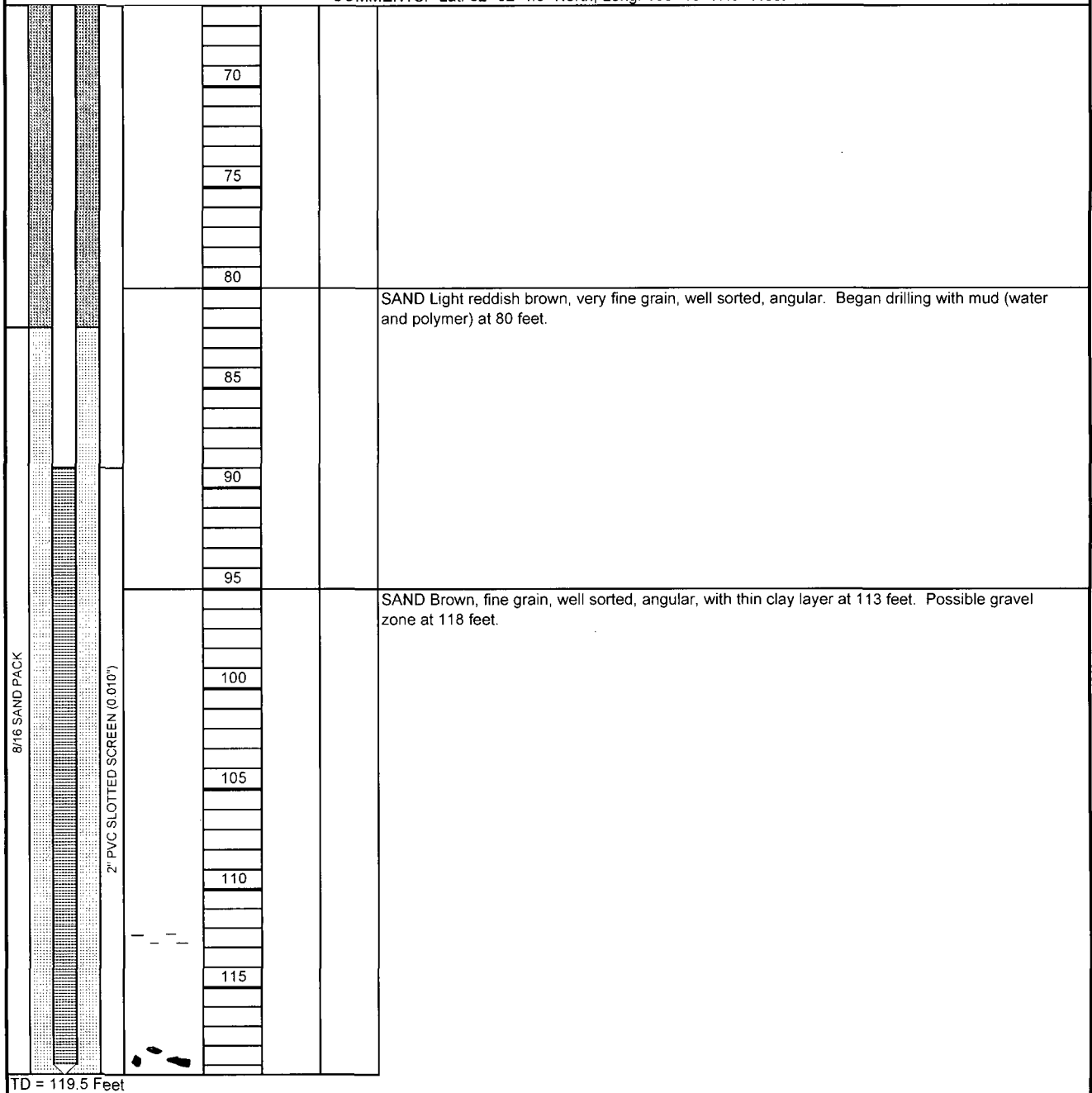
**R T Hicks  
Consultants Ltd**

P O Box 7624  
Midland, TX 79708  
(432) 528-3878

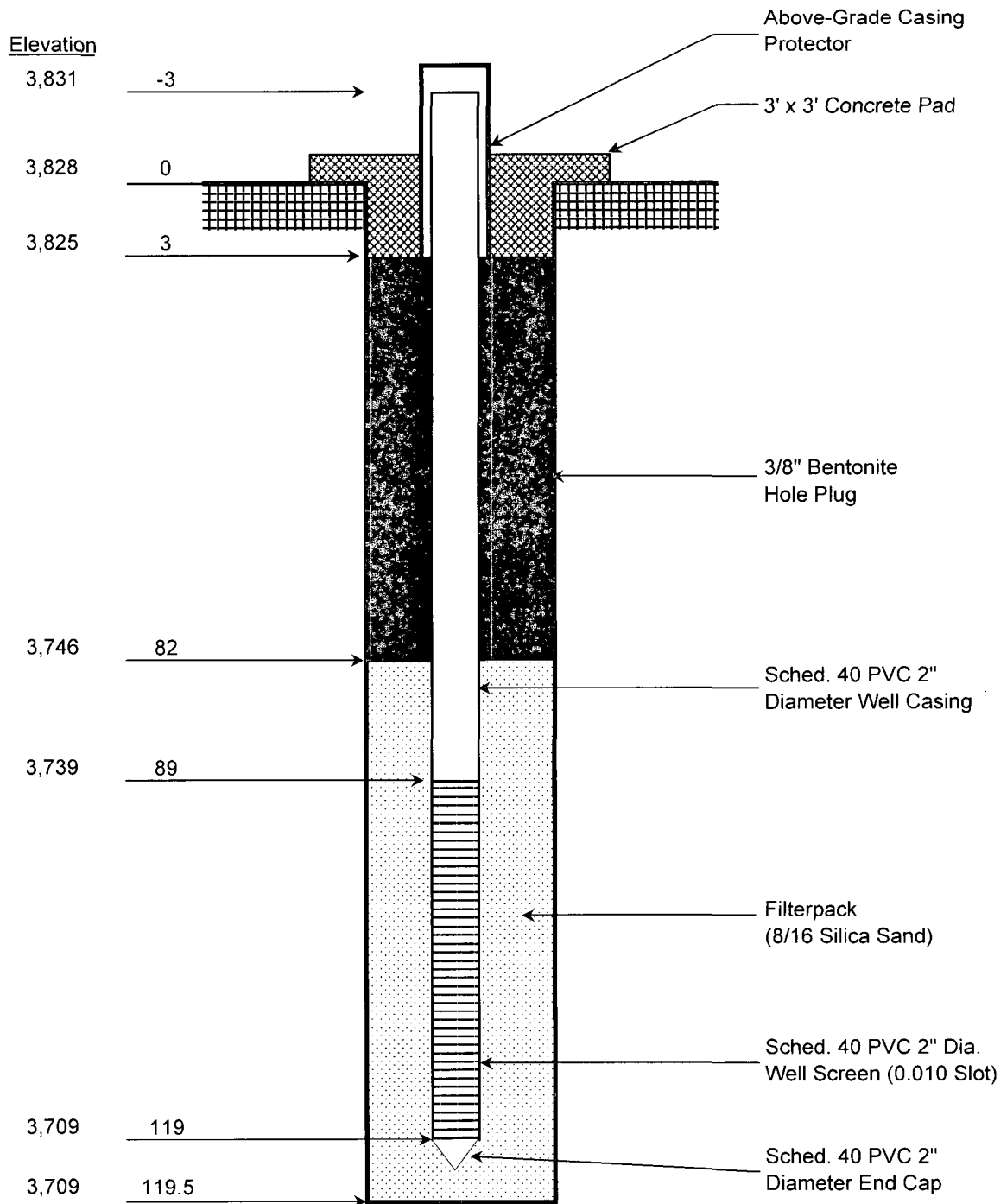
**LITHOLOGIC LOG (MONITORING WELL)**

MONITOR WELL NO.: MW-2  
SITE ID: Lovington Abo 1G  
SURFACE ELEVATION: 3828 Feet (MSL)  
CONTRACTOR: Harrison & Cooper, Inc.  
DRILLING METHOD: Air-Rotary  
INSTALLATION DATE: 7/18/08  
WELL PLACEMENT: Approx. 450 feet NW of MW-1  
COMMENTS: Lat. 32° 52' 4.6" North, Long. 103° 10' 17.5" West

TOTAL DEPTH: 119.5 Ft  
CLIENT: Rice Operating Company  
COUNTY: Lea County  
STATE: New Mexico  
LOCATION: T-17-S, R-36-E, Sec. 1 (G)  
FIELD REP.: Dale Littlejohn  
FILE NAME: Abo ApacheLithlogs 7-08



# MONITORING WELL CONSTRUCTION DIAGRAM



**R T Hicks  
Consultants Ltd**

SITE: Lovington Abo 1G	
DATE: 7/18/2008	REV. NO.: 1
AUTHOR: DTL	TECH: DTL
DRILLER: H & C, Inc	FILE: G-1 Lithlogs

**Monitoring Well  
No. MW-2**

## **Appendix B:**

## **Laboratory Results**

**R. T. Hicks Consultants, Ltd.**

901 Rio Grande Blvd. Suite F-142  
Albuquerque, NM 87501



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

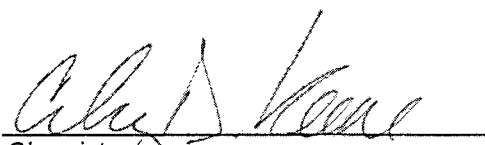
Receiving Date: 07/29/08  
Reporting Date: 08/04/08  
Project Number: NOT GIVEN  
Project Name: ABO APACHE LEAK  
Project Location: T19S-R36E-SEC1 G ~ LEA CO., NM

Sampling Date: 07/28/08  
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		08/03/08	08/03/08	08/03/08	08/03/08
H15257-1	MONITOR WELL #1	<0.002	<0.002	<0.002	<0.006
H15257-2	MONITOR WELL #2	<0.002	<0.002	<0.002	<0.006
Quality Control		0.053	0.045	0.052	0.151
True Value QC		0.050	0.050	0.050	0.150
% Recovery		106	89.5	103	101
Relative Percent Difference		4.2	5.8	0.1	1.8

METHOD: EPA SW-846 8260

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

  
Chemist

  
Date

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 client for 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 thirty (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. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



# ARDINAL 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: 07/29/08  
Reporting Date: 08/04/08  
Project Number: NOT GIVEN  
Project Name: ABO APACHE LEAK  
Project Location: T19S R36E SEC1 G ~ LEA COUNTY, NM

Sampling Date: 07/28/08  
Sample Type: WATER  
Sample Condition: COOL & INTACT  
Sample Received By: ML  
Analyzed By: HM/KS/TR

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		08/01/08	08/01/08	08/01/08	07/31/08	07/30/08	07/30/08
H15257-1	MONITOR WELL #1	181	68.9	13.6	3.4	1,130	228
H15257-2	MONITOR WELL #2	176	117	30.1	4.3	1,540	188
Quality Control		NR	52.1	51.0	2.86	1,425	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	104	102	95.4	101	NR
Relative Percent Difference		NR	< 0.1	< 0.1	0.7	0.6	NR

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

		Cl	SO <sub>4</sub>	CO <sub>3</sub>	HCO <sub>3</sub>	pH	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS DATE:		07/31/08	07/31/08	07/30/08	07/30/08	07/30/08	07/30/08
H15257-1	MONITOR WELL #1	204	106	0	278	7.20	810
H15257-2	MONITOR WELL #2	364	99	0	229	7.28	1,100
Quality Control		500	43.5	NR	1000	7.04	NR
True Value QC		500	40.0	NR	1000	7.00	NR
% Recovery		100	109	NR	100	100	NR
Relative Percent Difference		2.0	2.0	NR	< 0.1	0.4	NR

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

Chemist

Date

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 client for 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 thirty (30) days after completion of the applicable service. **H15257 RICE** 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. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



# Cardinal Laboratories, Inc.

1001 East Marland - Hobbs, New  
Mexico 88240  
Tel (575) 393-2326  
Fax (575) 393-2476

Company Name:	RICE Operating Company	BILL TO Company:	RICE Operating Company	PO#
Project Manager:		Address:	(Street, City, Zip)	
Hack Conder		Address:	122 W Taylor Street ~ Hobbs, New Mexico 88240	
Address:	(Street, City, Zip)	Phone#:	(575) 393-9174	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:		
		Abo Apache Leak		
Project Location:		Sampler Signature:		
T19S-R36E-Sec1 G ~ Lea County - New Mexico				
				Rozanne Johnson (575) 631-9310
				rozanne@valornet.com

[illegible]

Relinquished by: <u>Zoanne Johnson</u>	Date: <u>7/29/08</u>	Time: <u>7:40</u>	Received by: <u>Gene Johnson</u>	Date: <u>7/29/08</u>	Time: <u>7:41</u>
Relinquished by: <u>Gene Johnson</u>	Date: <u>7/29/08</u>	Time: <u>7:41</u>	Received By: (Laboratory Staff) <u>Walt deBart</u>	Date: <u>7/29/08</u>	Time: <u>9:50</u>
Delivered By: (Circle One)			Sample Condition		
			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/>		
			Checked By: _____ (Initials) <u>MCAB</u>		

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

LAB Order ID #

## ANALYSIS REQUEST

(Circle or Specify Method No.)

Name	Results		Additional Fax Number:	
	Yes	No	Yes	No
BTEX 8021B/602	X			
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)	X			
Anions (Cl, SO4, CO3, HCO3)	X			
Total Dissolved Solids	X			
Chlorides				
Turn Around Time ~ 24 Hours				

## REMARKS:

Email Results to: [hconder@riceswd.com](mailto:hconder@riceswd.com)  
[weinheimer@riceswd.com](mailto:weinheimer@riceswd.com)  
[rozanne@valornet.com](mailto:rozanne@valornet.com)



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: 04/24/08  
Reporting Date: 04/28/08  
Project Owner: NOT GIVEN  
Project Name: ABO APACHE LEAK  
Project Location: T19S-R36E-SEC1 G ~ LEA CO., NM

Sampling Date: 04/21/08  
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		04/25/08	04/25/08	04/25/08	04/25/08
H14709-1	MONITOR WELL #1	0.009	<0.001	<0.001	<0.003
Quality Control		0.097	0.097	0.095	0.296
True Value QC		0.100	0.100	0.100	0.300
% Recovery		97.0	96.8	95.4	98.6
Relative Percent Difference		0.5	1.4	0.8	0.7

METHOD: EPA SW-846 8021B

  
Chemist

  
Date

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 client for 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 thirty (30) days after completion of the applicable service. **H14709-1** Rice Operating Company shall 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. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of 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: 04/24/08  
Reporting Date: 04/28/08  
Project Number: NOT GIVEN  
Project Name: ABO APACHE LEAK  
Project Location: T19S-R36E-SEC1 G~LEA COUNTY, NM

Sampling Date: 04/21/08  
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 ( $\mu$ S/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:	04/28/08	04/28/08	04/28/08	04/28/08	04/25/08	04/25/08
H14709-1 MONITOR WELL #1	134	156	34	3.90	1,600	248
Quality Control	NR	51.3	52.5	4.56	1,411	NR
True Value QC	NR	50.0	50.0	4.00	1,413	NR
% Recovery	NR	103	105	114	99.8	NR
Relative Percent Difference	NR	1.4	4.9	13.1	1.4	NR

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

	Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	04/25/08	04/28/08	04/25/08	04/25/08	04/25/08	04/25/08
H14709-1 MONITOR WELL #1	328	112	0	302	6.76	1,050
Quality Control	490	26.0	NR	976	6.98	NR
True Value QC	500	25.0	NR	1000	7.00	NR
% Recovery	98.0	104	NR	97.6	99.7	NR
Relative Percent Difference	2.0	13.6	NR	2.4	1.0	NR

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

*Kristin Farris-Pope*  
Chemist

*04/29/08*  
Date

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 client for 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 thirty (30) days after completion of the applicable service. **H14709 RICE** 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. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

<h1 style="margin: 0;">Cardinal Laboratories, Inc.</h1> <p>101 East Marland - Hobbs, New Mexico 88240 Tel (575) 393-2326 Fax (575) 393-2476</p>		<h2 style="margin: 0;">CHAIN-OF-CUSTODY AND ANALYSIS REQUEST</h2> <p>LAB Order ID # _____</p>	
<b>Company Name:</b> RICE Operating Company <b>Project Manager:</b> Kristin Farris-Pope, Project Scientist <b>Address:</b> (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240 <b>Phone #:</b> (575) 393-9174 <b>Fax #:</b> (575) 397-1471		<b>BILL TO Company:</b> RICE Operating Company <b>Address:</b> (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240 <b>Phone #:</b> (575) 393-9174 <b>Fax #:</b> (575) 397-1471	
<b>Project #:</b> (575) 393-9174 <b>Project Name:</b> Abo Apache Leak		<b>Project Location:</b> T19S-R36E-Sec1 G ~ Lea County - New Mexico Sampler Signature: <i>Rozanne Johnson</i> (575) 631-9310 rozanne@valornet.com	
<b>LAB #</b> (LAB USE ONLY) H14709-1	<b>FIELD CODE</b> Monitor Well #1	<b>MATRIX</b> WATER <input checked="" type="checkbox"/> SOIL <input type="checkbox"/> AIR <input type="checkbox"/> SLUDGE <input type="checkbox"/> # CONTAINERS 3	<b>PRESERVATIVE METHOD</b> HCL (2.40ml VOA) 2 H <sub>2</sub> SO <sub>4</sub> 1 HNO <sub>3</sub> 1 H <sub>2</sub> SO <sub>4</sub> 1 ICE (1-1 liter HDPE) 1 NONE 1 <b>SAMPLING</b> DATE (2008) 4-21 13:45 TIME
		<b>ANALYSIS REQUEST</b> (Circle or Specify Method No.)	
		Turn Around Time ~ 24 Hours	
		Chlorides	
		Total Dissolved Solids	
		Anions (Cl, SO <sub>4</sub> , CO <sub>3</sub> , HCO <sub>3</sub> )	
		Cations (Ca, Mg, Na, K)	
		Moisture Content	
		BOD, TSS, pH	
		Pesticides 8081A/608	
		PCB's 8082/608	
		GC/MS Semi. Vol. 8270C/625	
		GC/MS Vol. 8260B/624	
		RCI	
		TCLP Pesticides	
		TCLP Semi Volatiles	
		TCLP Volatiles	
		TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
		Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
		PAH 8270C	
		TPH 418.1/TX1005 / TX1005 Extended (C35)	
		BTEX 8021B/602	
		MTBE 8021B/602	
		Phone Results Yes No	
		Fax Results Yes No	
		Additional Fax Number:	
<b>Relinquished by:</b> Rozanne Johnson Date: 4-24-2008 14:05		<b>Received by:</b> Cathy Luntine Date: 4-24-08 14:07	
<b>Relinquished by:</b> Cathy Luntine Date: 4-24-08 16:50		<b>Received By:</b> (Laboratory Staff) Cathy Luntine Date: 4/24/08 4:50	
<b>Delivered by:</b> (Circle One) UPS - Bus - Other:		<b>Sample Condition</b> Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>Sampler - UPS - Bus - Other:</b>		<b>Checked By:</b> (Initials) MCB	
<b>Email Results to:</b> kpope@riceswd.com lweinheimer@riceswd.com rozanne@valornet.com		<b>REMARKS:</b>	



# ARDINAL LABORATORIES

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

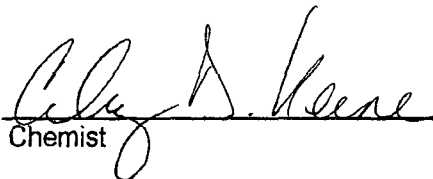
ANALYTICAL RESULTS FOR  
RICE OPERATING COMPANY  
ATTN: KRISTIN FARRIS-POPE  
122 W. TAYLOR  
HOBBS, NM 88240  
FAX TO: (575) 397-1471

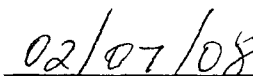
Receiving Date: 02/01/08  
Reporting Date: 02/04/08  
Project Owner: NOT GIVEN  
Project Name: ABO APACHE LEAK  
Project Location: T19S-R36E-SEC1 G ~ LEA CO., NM

Sampling Date: 02/01/08  
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		02/04/08	02/04/08	02/04/08	02/04/08
H14193-1	MONITOR WELL #1	0.003	<0.001	<0.001	<0.003
Quality Control		0.095	0.085	0.088	0.256
True Value QC		0.100	0.100	0.100	0.300
% Recovery		95.4	85.1	88.2	85.4
Relative Percent Difference		3.0	1.3	0.8	2.3

METHOD: EPA SW-846 8021B

  
Chemist

  
Date





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: 02/01/08  
Reporting Date: 02/06/08  
Project Number: NOT GIVEN  
Project Name: ABO APACHE LEAK  
Project Location: T19S-R36E-SEC1 G~LEA COUNTY, NM

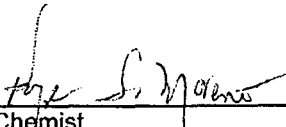
Sampling Date: 02/01/08  
Sample Type: WATER  
Sample Condition: COOL & INTACT  
Sample Received By: ML  
Analyzed By: HM/KS

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		02/05/08	02/05/08	02/05/08	02/04/08	02/04/08	02/04/08
H14193-1	MONITOR WELL #1	82.7	153	17.7	3.99	1,270	240
Quality Control		NR	49.2	51.6	3.16	1,420	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	98.5	103	103	100	NR
Relative Percent Difference		NR	< 0.1	1.5	3.2	0.6	NR

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

		Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		02/04/08	02/05/08	02/04/08	02/04/08	02/04/08	02/04/08
H14193-1	MONITOR WELL #1	228	75.7	0	293	7.19	868
Quality Control		500	23.0	NR	1000	7.04	NR
True Value QC		500	25.0	NR	1000	7.00	NR
% Recovery		100	91.8	NR	100	100	NR
Relative Percent Difference		< 0.1	3.7	NR	< 0.1	0.1	NR

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

  
Chemist

02-06-08  
Date

Company Name: <b>RICE Operating Company</b>		BILL TO Company: <b>RICE Operating Company</b>		PO#	
Project Manager: <b>Kristin Farris-Pope, Project Scientist</b>		Address: <b>122 W Taylor Street ~ Hobbs, New Mexico 88240</b>		(Street, City, Zip)	
Address: <b>(Street, City, Zip)</b>		Phone#: <b>(575) 393-9174</b>		Fax#: <b>(575) 397-1471</b>	
Phone #: <b>(575) 393-9174</b>		Fax #: <b>(575) 397-1471</b>			
Project #:		Project Name: <b>Abo Apache Leak</b>			
Project Location: <b>T19S-R36E-Sec1 G ~ Lea County - New Mexico</b>		Sampler Signature: <i>[Signature]</i>		Rozanne Johnson (575) 631-9310 rozanne@valornet.com	
LAB # <b>(LAB USE ONLY)</b>		FIELD CODE			
Monitor Well #1		(G)rab or (C)omp		# CONTAINERS	
		WATER		SOIL	
		AIR		SLUDGE	
		HCL (2 40ml VOA)		HNO <sub>3</sub>	
		NaHSO <sub>4</sub>		H <sub>2</sub> SO <sub>4</sub>	
		ICE (1-1 Liter HDPE)		NONE	
		DATE (2008)		TIME	
		MTBE 8021B/602		BTX 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, SO <sub>4</sub> , CO <sub>3</sub> , HCO <sub>3</sub> )	
		Total Dissolved Solids		Chlorides	
		Turn Around Time ~ 24 Hours			

**Hansen, Edward J., EMNRD**

---

**From:** L. Peter Galusky, Jr. P.E. [lpg@texerra.com]  
**Sent:** Tuesday, October 14, 2008 11:58 AM  
**To:** Hansen, Edward J., EMNRD  
**Cc:** Lara Weinheimer  
**Subject:** Rice Operating Company - OCD 1R488 - ABO F-31 SWD ICP investigation - Notice of planned field activities

Edward,

Please be advised that we plan to conduct the field work described in the respective NMOCD approved Investigation and Characterization Plan for the above-referenced site over Monday, October 20th through Tuesday, October 21st. If you are in the neighborhood during this time you are most welcomed to join us.

Thank you for your consideration.

Sincerely,

Pete G.

L. Peter Galusky, Jr. Ph.D. P.G.  
Principal  
Texerra  
E-mail: [lpg@texerra.com](mailto:lpg@texerra.com)  
Cell: 432-634-9257

---

This inbound email has been scanned by the MessageLabs Email Security System.

---

10/15/2008

**Hansen, Edward J., EMNRD**

7R415

---

**From:** Dale Littlejohn [dale@rthicksconsult.com]  
**Sent:** Thursday, July 10, 2008 2:10 PM  
**To:** Williams, Chris, EMNRD; Hansen, Edward J., EMNRD  
**Cc:** Dave (R T Hicks); Lara Weinheimer; Randy Hicks (Randy Hicks)  
**Subject:** Installation of MW-2 Rice Operation Abo G-1  
**Attachments:** ROC Abo 1G Scope and Driving Directions.pdf

Please accept this email as notice of our intentions to install a monitoring well at the Rice Operating Abo 1G site beginning at 8:00 AM on Friday July 18, 2008.

A scope of work for the site with driving directions is provided on the attached PDF file. We anticipate that the activities will be completed in one day. Please call me if you have any questions or require additional information.

Thanks,

**Dale T Littlejohn, PG**  
**R T Hicks Consultants Ltd**  
(432) 528-3878 (office)  
(432) 689-4578 (fax)

---

This inbound email has been scanned by the MessageLabs Email Security System.

---

9/19/2008

# **RICE *Operating Company***

122 West Taylor  
Hobbs, NM 88240  
Phone: (505) 393-9174  
Fax: (505) 397-1471

## **Scope of Work**

**Date of work:** Friday, July 18th

**Purpose:** Monitor well installation

**Contractor conducting work:** Harrison & Cooper, Inc.

**Site Name:** Abo 1G

**Legal Description:** unit 'G', Sec. 1, T17S, R36E

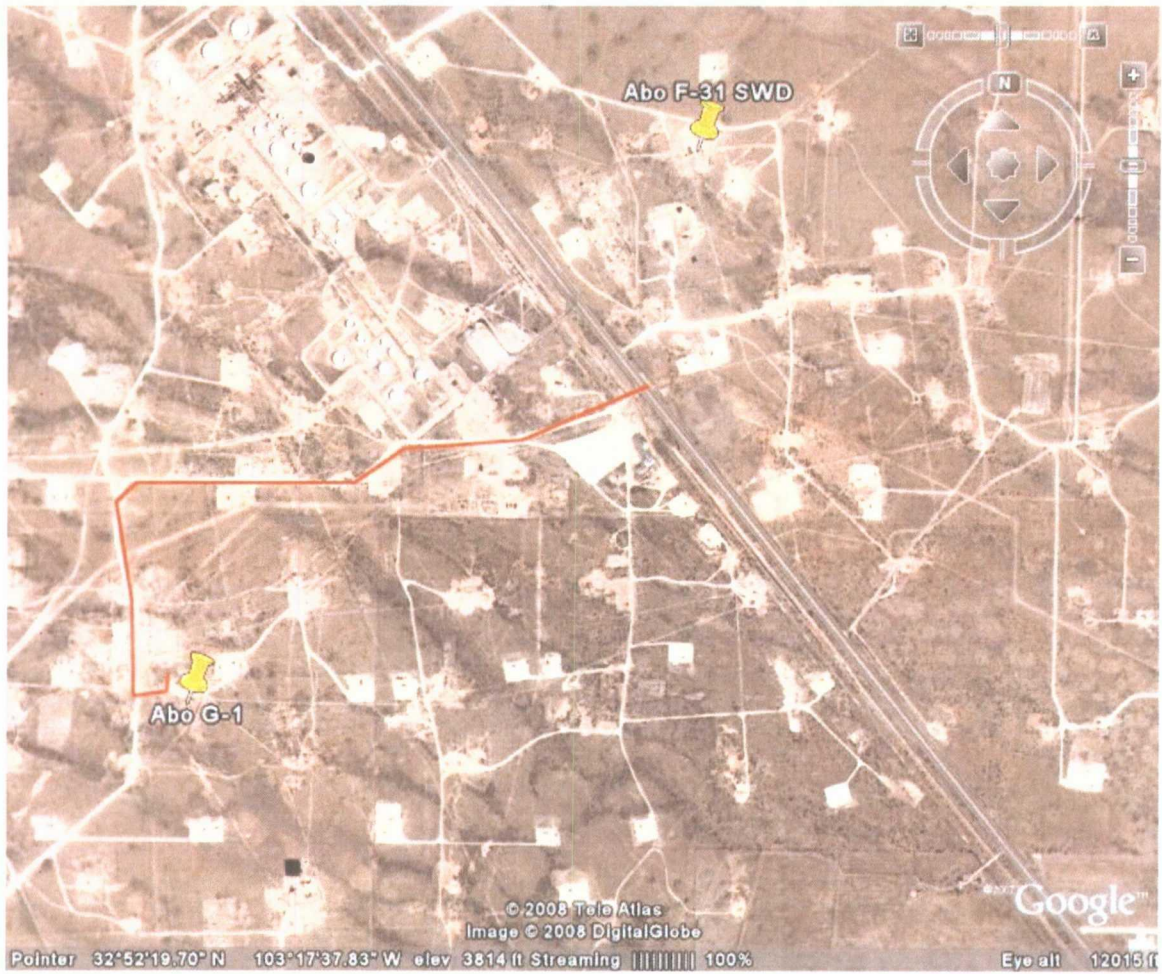
Install one monitor well with 30 feet of screen. We will need to mud it in, I believe, since it was necessary on the previous well.

Depth to ground water is expected to be at 96 ft bgs.

Consultant Dale Littlejohn of R.T. Hicks (432) 528-3878 will be present for this work.

**Driving Directions:** North of Hobbs on Hwy 18, head north toward Lovington. At mile marker 66, proceed another 0.5 miles. Turn left onto the lease road and travel west 0.8 miles. Turn left and travel south 0.3 miles. Turn left again and go <0.1 miles. The flagged site is on your left between the two battery locations.









Abo G-1  
1R415