

1R - 426-105

**GENERAL  
CORRESPONDENCE**

**YEAR(S):**

2007



**Highlander Environmental Corp.**

2007 AUG 13 PM 1:48  
Midland, Texas

CERTIFIED MAIL

RETURN RECEIPT NO. 7004 2510 0001 1869 0972

1R426-105

August 3, 2007

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

RE: **INVESTIGATION & CHARACTERIZATION WORK PLAN  
C-4-3 JUNCTION BOX, BD SWD SYSTEM  
UNIT "C", SEC. 4, T22S, R37E**

Mr. Price:

RICE Operating Company (ROC) has retained Highlander Environmental Corp. (Highlander) to address potential environmental concerns at the above-referenced site. ROC is the service provider (agent) for the Blinbry Drinkard (BD) SWD 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. 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. This **Investigation and Characterization Plan** (ICP) is a proposal for data gathering and site characterization and assessment.
2. Upon evaluating the data and results from the ICP, a recommended remedy will be submitted in a **Corrective Action Plan** (CAP).
3. Finally, after implementing the remedy, a **closure report** with final documentation will be submitted.

## **BACKGROUND & PREVIOUS WORK**

As part of the ROC Junction Box Upgrade Workplan the junction box was moved 25' to the south. Starting on June 16, 2004, the former junction box site was investigated vertically and horizontally with a backhoe. The Site was excavated to the approximate dimensions of 22' x 28' x 12'. TPH impact was noted to a depth of at least 12' below ground surface (bgs) at the bottom of the excavation along with on the east and north walls. To further delineate the vertical extent of the TPH impact, a trench in the center of the excavation was extended to a depth of 17' bgs. A vertical grab sample was collected at 17' bgs with analytical results exceeding the NMOCD guidelines of 1,000 mg/kg TPH. Chloride concentrations decline with depth from 617 mg/kg at a depth of 5 feet bgs on the south wall to 64 mg/kg at a depth of 17 feet bgs. No water wells were located within Section 4 which contains the site. However, according to the New Mexico State Engineers Well Reports, one water well is located in adjacent section 3 with a depth to groundwater of 85 feet bgs.

The excavated soil was blended onsite and replaced into the excavation to a depth of 12' below ground surface (bgs). On September 15, 2004, ROC submitted a Junction Box Disclosure Report to the NMOCD. A copy of the Junction Box Disclosure Report is included in Appendix A. A copy of the soil boring log and laboratory analysis are included in Appendix B.

## **INVESTIGATION & CHARACTERIZATION PLAN**

As discussed above, existing site data suggest a potential for impairment of groundwater quality. Therefore the work elements described below are designed to assist ROC in selecting an appropriate vadose zone remedy and, if necessary, a groundwater remedy.

### **Task 1      Collect Regional Hydrogeologic Data**

A water well inventory will be performed to encompass a ½ mile radius around the release site. The inventory will include a review of water well records on the New Mexico Office of the State Engineer W.A.T.E.R.S. database and United States Geologic Survey (USGS) website. Any water wells denoted on the USGS 7.5 minute topographic quadrangle map within the search radius will be inspected. If viable wells are located, they will be evaluated for the possible incorporation of water level measurements and groundwater monitoring.

### **Task 2      Evaluate Concentrations of Constituents of Concern in Soil (and Ground Water)**

Highlander proposes to conduct soil borings at the former junction box site for further evaluation. The soil borings will be placed appropriately to evaluate subsurface TPH and chloride impacts, and for vertical and horizontal delineation. The soil boring samples will be field screened for chloride concentrations and hydrocarbons utilizing a photoionization detector (PID). If chloride concentrations do not decline sufficiently with depth or exceed 250 mg/kg within 10' of the suspected groundwater depth, one soil boring, in the area with the highest potential to impact groundwater, will be converted to a monitoring well.

If a monitoring well is installed, it will be constructed according to EPA and industry standards and developed either by bailing with a rig or hand bailer, or pumping with an electric submersible pump to remove fine grained sediment disturbed during drilling and to ensure



collection of representative groundwater samples. Water removed from any monitor well will be disposed of in the BD SWD System.

If a monitoring well is completed, it will be inspected for the presence of phase-separated hydrocarbons (PSH) and, if present, a sample will be collected and analyzed by gas chromatography (GC) to determine composition and origin. The well will be properly purged and sampled with a clean, dedicated, polyethylene bailer and disposable line. Groundwater samples will be submitted to a laboratory for analysis of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA 8021B, and chloride by method 300.0.

### **Task 3      Evaluate Flux from the Vadose Zone to Ground Water**

As part of the ICP, the residual impact to vadose zone soils will be evaluated to determine what, if any remediation/isolation techniques will be required at the Site.

The information gathered from tasks 1-3 will be evaluated and utilized to design a groundwater remedy if needed. The groundwater remedy that offers the greatest environmental benefit while causing the least environmental impairment will be selected. If the evaluation demonstrates that residual constituents pose no threat to groundwater quality, a vadose zone remedy protective of groundwater will be proposed. Such recommendations and findings will be presented to NMOCD in a subsequent Corrective Action Plan (CAP). 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.

Should you have any questions, please contact me at (432) 682-4559. Your prompt review of this submission is appreciated. Thank you for your attention to this matter.

Highlander Environmental Corp.

*Jeffrey Kindley*  
Jeffrey W. Kindley, P.G.  
Senior Environmental Geologist

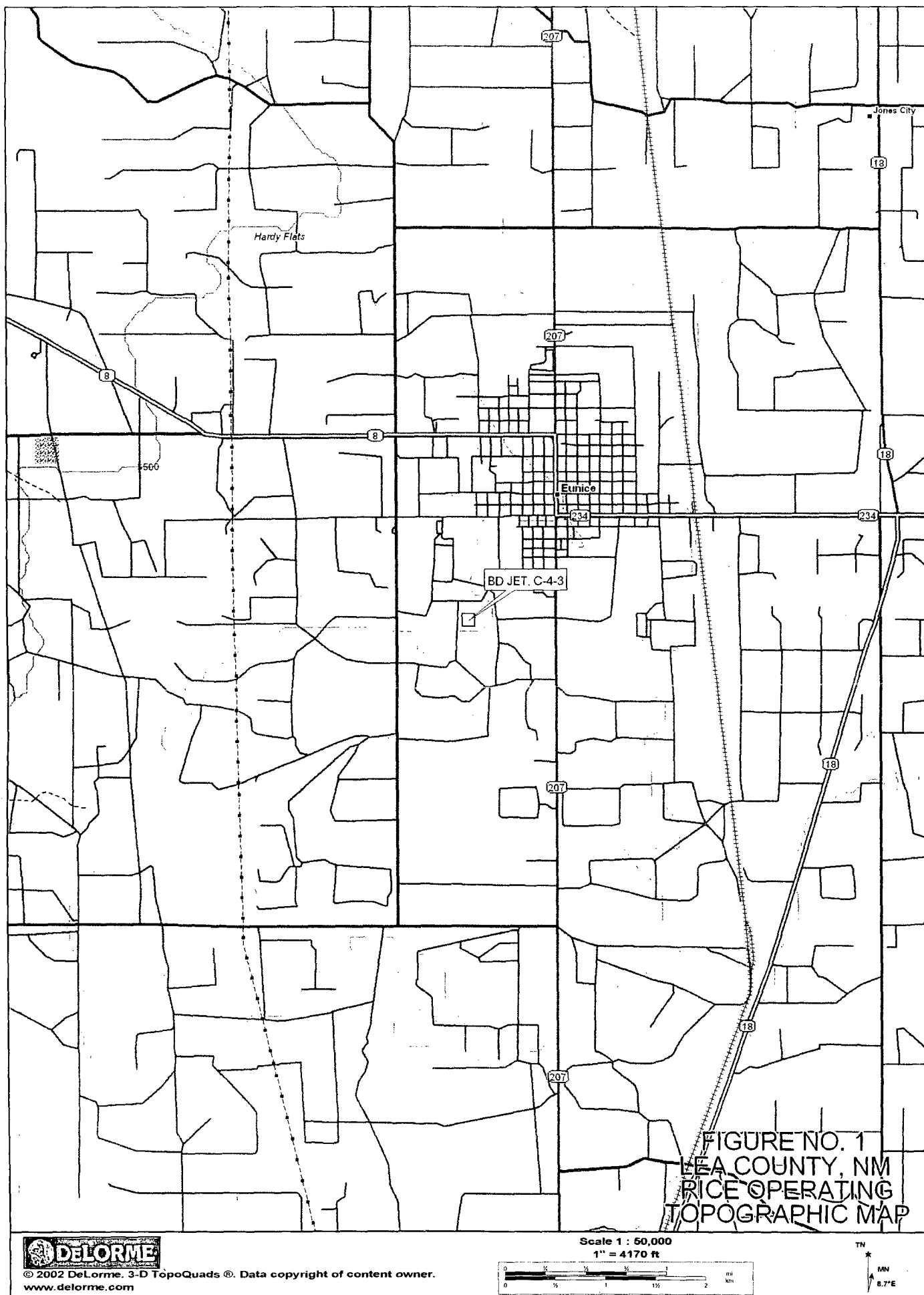
cc: ROC  
Edward Hansen - NMOCD  
Larry Johnson - NMOCD

enclosures: photos, disclosure report, laboratory analysis



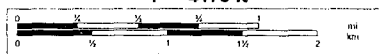


## Figures



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Scale 1 : 50,000  
1" = 4170 ft



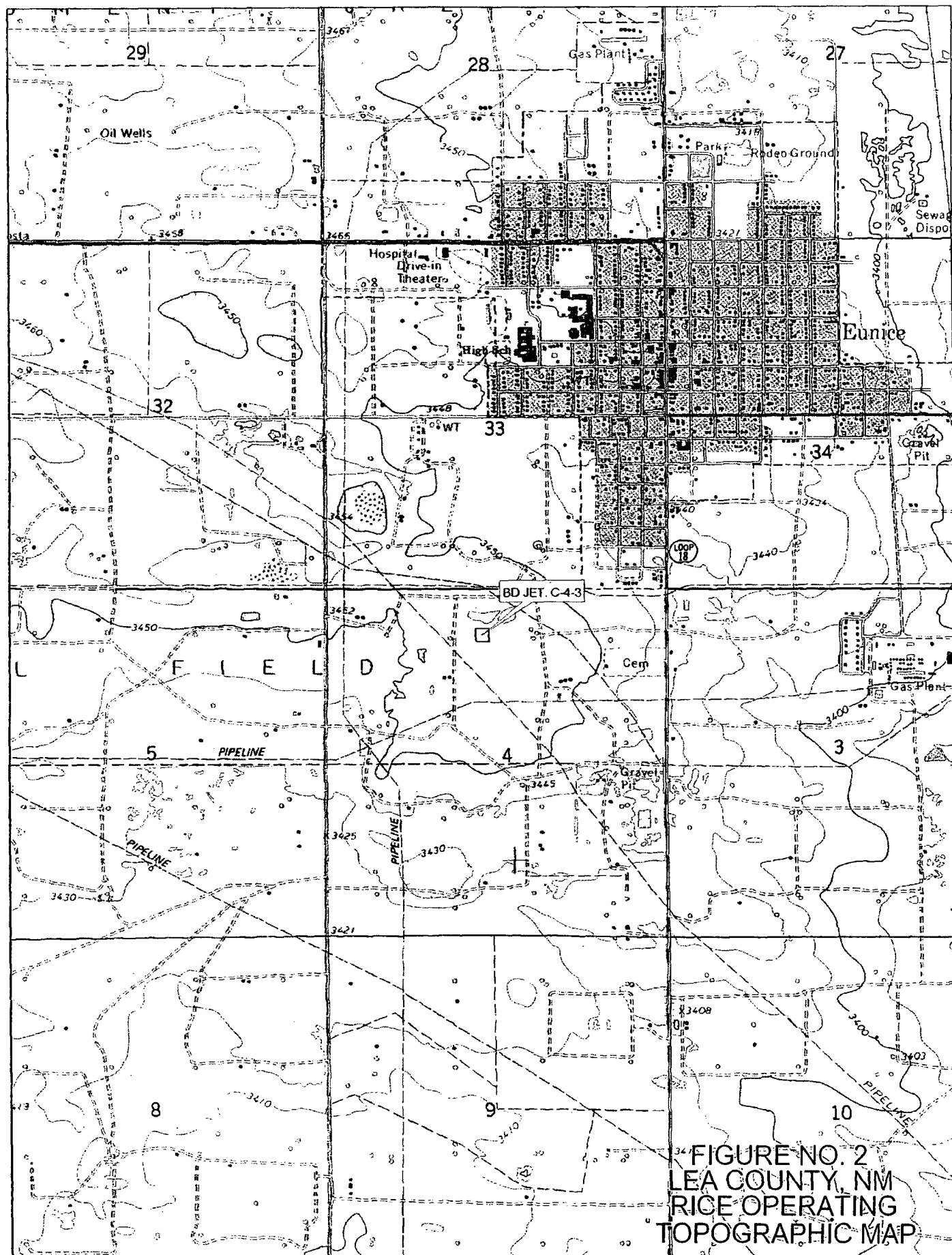


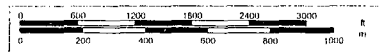
FIGURE NO. 2  
LEA COUNTY, NM  
RICE OPERATING  
TOPOGRAPHIC MAP



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Scale 1 : 24,000

1" = 2000 ft

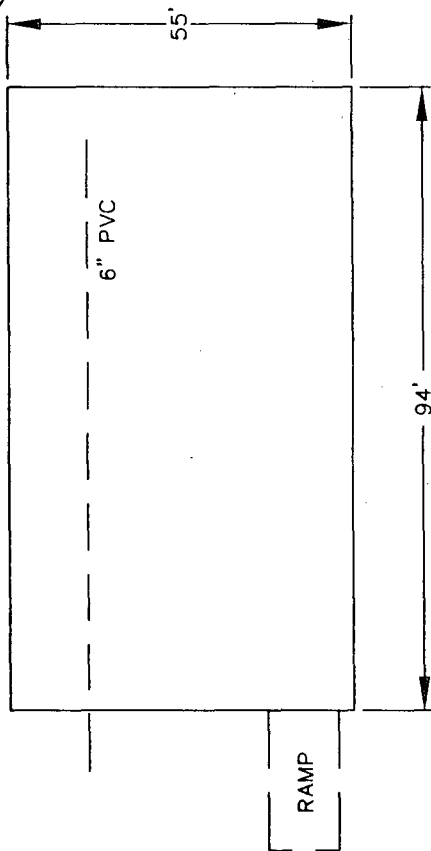


NORTH



GOOD  
VEGETATION

ROAD



GOOD  
VEGETATION

GOOD  
VEGETATION

FIGURE NO. 3

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY  
BD JET. C-4-3

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS

DATE: 8/6/07  
DWN. BY: RC  
FILE: C:\NCE\2002  
BD JET. C-4-3

NOT TO SCALE

## Photographs

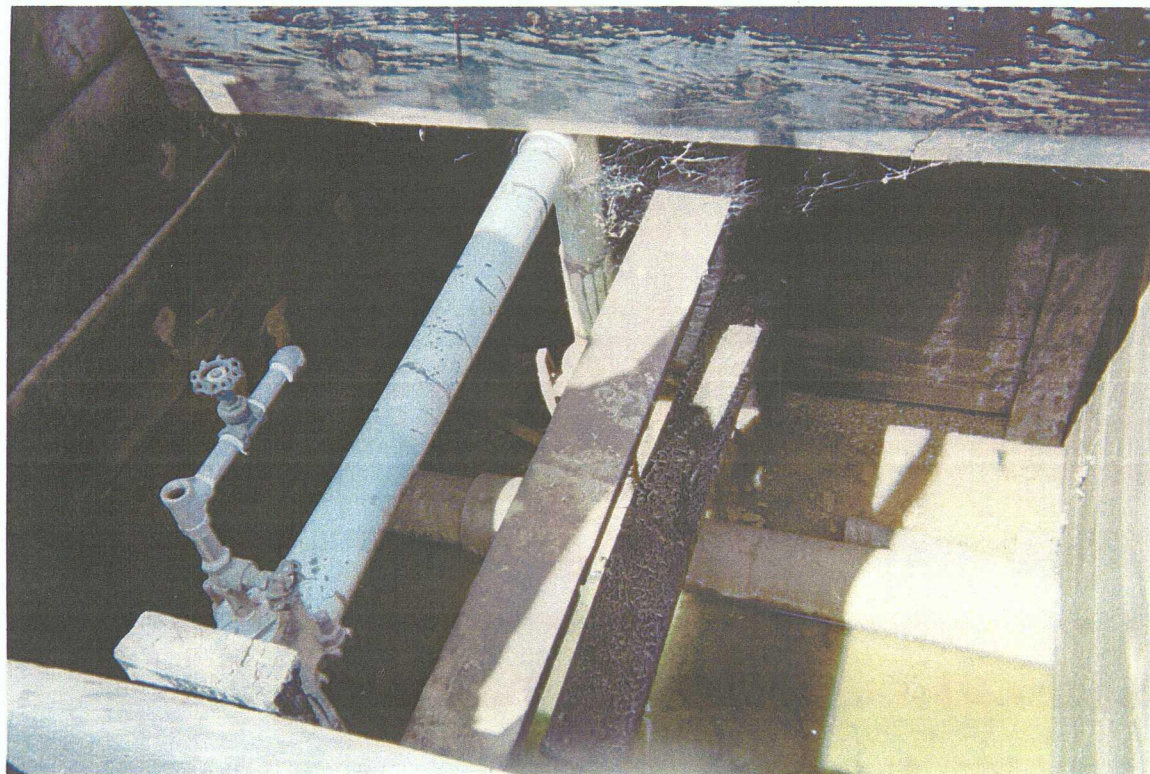


**PHOTOGRAPHIC DOCUMENTATION**

Rice Operating Company  
BD Jct. C-4-3, Lea County, New Mexico



1. View of the old junction box.



2. View inside the old junction box.



# PHOTOGRAPHIC DOCUMENTATION

Rice Operating Company  
BD Jct. C-4-3, Lea County, New Mexico



3. Excavation of the old junction box.



4. Excavation of the old junction box.



## PHOTOGRAPHIC DOCUMENTATION

Rice Operating Company  
BD Jct. C-4-3, Lea County, New Mexico



5. Excavation of the old junction box.



6. Backfilling of the old junction box.



**PHOTOGRAPHIC DOCUMENTATION**

Rice Operating Company  
BD Jct. C-4-3, Lea County, New Mexico



7. Backfilling of old junction box.



8. Completed backfilling of site.

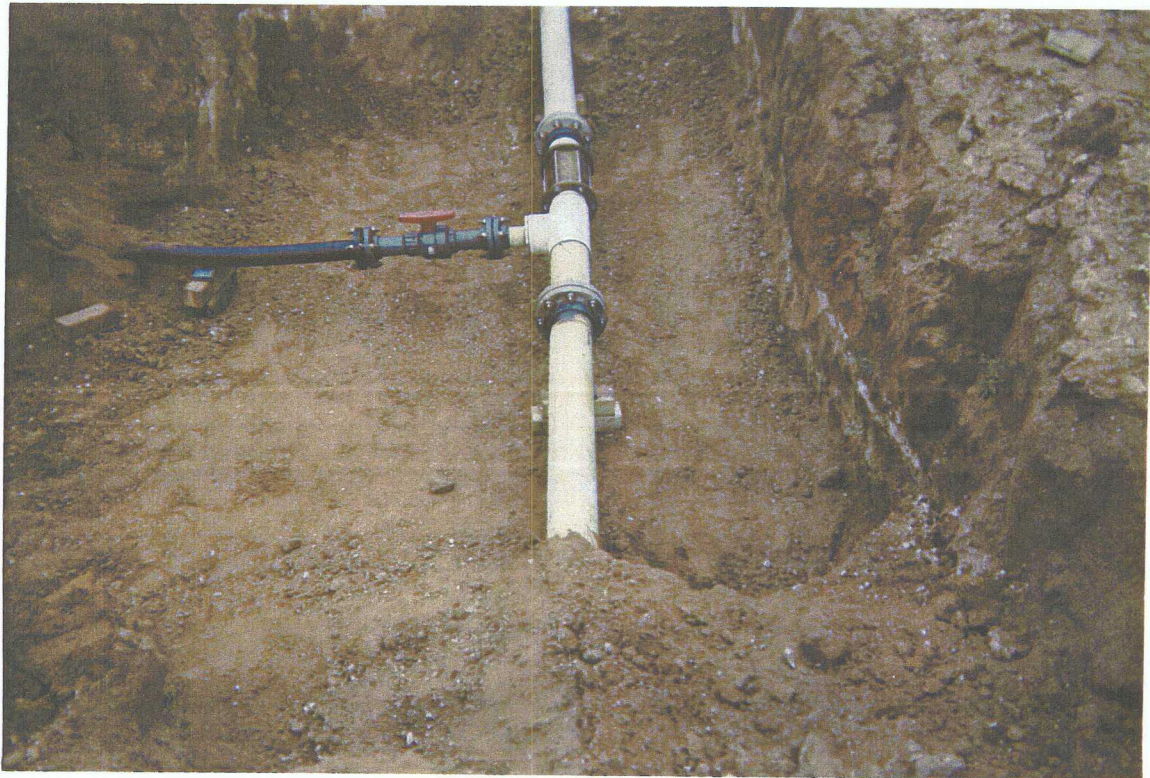


**PHOTOGRAPHIC DOCUMENTATION**

Rice Operating Company  
BD Jct. C-4-3, Lea County, New Mexico



9. Completed backfilling of site..



10. Plumbing for new junction box.



# PHOTOGRAPHIC DOCUMENTATION

Rice Operating Company  
BD Jct. C-4-3, Lea County, New Mexico



11. Plumbing for new junction box.



12. Interior view of new junction box.



**PHOTOGRAPHIC DOCUMENTATION**

Rice Operating Company  
BD Jct. C-4-3, Lea County, New Mexico



13. View of new junction box.

## Appendix A

**RICE OPERATING COMPANY  
JUNCTION BOX DISCLOSURE\* REPORT**

**BOX LOCATION**

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
BD	C-4-3	C	4	22S	37E	Lea	Length	Width	Depth
							moved 25 ft South		

LAND TYPE: BLM \_\_\_\_\_ STATE \_\_\_\_\_ FEE LANDOWNER Priscilla Brunson Moody OTHER \_\_\_\_\_

Depth to Groundwater 93 feet NMOC SITE ASSESSMENT RANKING SCORE: 10

Date Started 6/16/2004 Date Completed 7/6/2004 OCD Witness No

Soil Excavated 274 cubic yards Excavation Length 22 Width 28 Depth 12 feet

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

**FINAL ANALYTICAL RESULTS:** Sample Date 6/17/2004, 6/22/2004, 7/1/2004 Sample Depth 12, 17 ft

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 NMOC guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
VERTICAL GRAB @ 17 ft	0.298	0.065	4.78	5.71	21.7	2640	64
BOTTOM COMPOSITE @ 12 ft	See enclosed laboratory analytical report and BTEX Study tables				156	984	372
NORTH WALL COMPOSITE					141	911	436
SOUTH WALL COMPOSITE					19	183	617
EAST WALL COMPOSITE					183	1070	383
WEST WALL COMPOSITE					8.82	27.9	585
REMEDIATED BACKFILL COMPOSITE	<0.005	<0.005	<0.005	<0.015	<10.0	414	289

General Description of Remedial Action: This junction box site was delineated using a backhoe while chloride field tests and PID screenings were conducted at regular intervals. Within the 22 x 28 x 12-ft-deep excavation, chloride concentrations were very low and similar to the background level (87 ppm). Some of the samples collected within the excavation yielded elevated PID readings. The bottom and wall samples were analyzed for BTEX after being composited under laboratory conditions. Comparative tables showing these results are enclosed. NMOC BTEX guidelines were met. NMOC TPH guidelines were not met on the following samples: vertical grab at 17 ft, bottom composite, at 12 ft, north wall composite, and the east wall composite. The excavated soils were blended on site and then backfilled into the hole. An identification plate was placed on the surface to mark the site of the former junction box for future considerations. A new watertight junction box was built 25 ft south of this location.

**ADDITIONAL EVALUATION IS HIGH PRIORITY**

enclosures: chloride graph, photos, lab results, BTEX study

**CHLORIDE FIELD TESTS**

LOCATION	DEPTH (ft)	ppm
Vertical	8	84
at jct.	9	83
	10	84
	11	140
	12	87
	17	81
north wall comp.	0-12	495
south wall comp.	0-12	857
east wall comp.	0-12	464
west wall comp.	0-12	590
bottom comp.	12	393

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

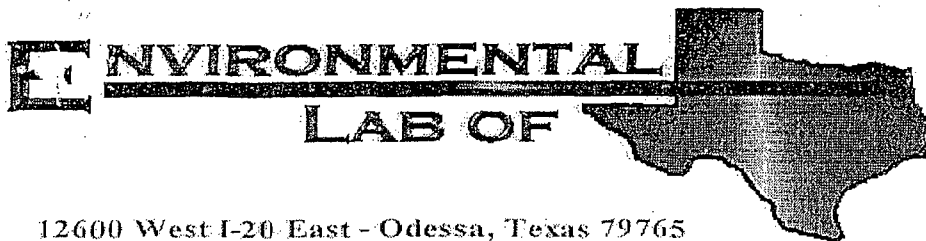
SITE SUPERVISOR Joe Gatts SIGNATURE Joe Gatts COMPANY RICE Operating Company

REPORT ASSEMBLED BY Kristin Farris Pope SIGNATURE Kristin Farris Pope

DATE 9/15/2004 TITLE Project Scientist

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

## Appendix B



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

Prepared for:

Kristin Farris  
Rice Operating Co.  
122 W. Taylor  
Hobbs, NM 88240

Project **C-4-3**

Project Number: None Given

Location: None Given

Lab Order Number: 4F28001

Report Date: 07/01/04



Rice Operating Co.  
12 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

Organics by GC  
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
West Wall Pt #1,2,3,4,5 (4F28001-01) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	80-120		"	"	"	"	
South Wall Pt #1,2,3,4,5 (4F28001-02) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.0289	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.0656	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.188	0.0250	"	"	"	"	"	"	
Xylene (o)	0.0462	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	80-120		"	"	"	"	
East Wall Pt #1,2,3,4,5 (4F28001-03) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.100	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.186	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.820	0.0250	"	"	"	"	"	"	
Xylene (o)	0.269	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.3 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.3 %	80-120		"	"	"	"	
North Wall Pt #1,2,3,4,5 (4F28001-04) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.0977	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.350	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.845	0.0250	"	"	"	"	"	"	
Xylene (o)	0.274	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		103 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	80-120		"	"	"	"	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 2 of 13

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

Organics by GC  
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Pt #1,2,3,4,5 @ 12' Bgs (4F28001-05) Soil LAB COMP									
Benzene	0.0268	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.139	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.155	0.0250	"	"	"	"	"	"	
Xylene (p/m)	1.08	0.0250	"	"	"	"	"	"	
Xylene (o)	0.128	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		131 %	80-120	"	"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		97.9 %	80-120	"	"	"	"	"	
East Wall Field Comp (4F28001-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.135	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.126	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.701	0.0250	"	"	"	"	"	"	
Xylene (o)	0.222	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		89.2 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	80-120	"	"	"	"	"	
Gasoline Range Organics C6-C12	183	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	1070	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1250	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		86.8 %	70-130	"	"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130	"	"	"	"	"	
West Wall Field Comp (4F28001-07) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		92.8 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	80-120	"	"	"	"	"	
Gasoline Range Organics C6-C12	J [8.82]	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	J
Diesel Range Organics >C12-C35	27.9	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	27.9	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		82.0 %	70-130	"	"	"	"	"	
Surrogate: 1-Chlorooctadecane		83.8 %	70-130	"	"	"	"	"	

Environmental Lab of Texas

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Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>North Wall Field Comp (4F28001-08) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.0796	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.184	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.700	0.0250	"	"	"	"	"	"	
Xylene (o)	0.259	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		91.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	141	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	911	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1050	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		90.8 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130		"	"	"	"	
<b>South Wall Field Comp (4F28001-09) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.0265	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.0433	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.131	0.0250	"	"	"	"	"	"	
Xylene (o)	0.0336	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		86.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.6 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	19.0	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	183	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	202	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		93.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		93.6 %	70-130		"	"	"	"	
<b>Bottom Wall Field Comp @12' bgs (4F28001-10) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.123	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.113	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.829	0.0250	"	"	"	"	"	"	
Xylene (o)	0.133	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		87.9 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	156	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	984	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1140	10.0	"	"	"	"	"	"	

Environmental Lab of Texas

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Page 4 of 13

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122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Wall Field Comp @12' bgs (4F28001-10) Soil									
Surrogate: 1-Chlorooctane		96.6 %	70-130		EF42803	06/28/04	06/28/04	EPA 8015M	
Surrogate: 1-Chlorooctadecane		110 %	70-130		"	"	"	"	

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

General Chemistry Parameters by EPA / Standard Methods  
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
West Wall Pt #1,2,3,4,5 (4F28001-01) Soil									
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
South Wall Pt #1,2,3,4,5 (4F28001-02) Soil									
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
East Wall Pt #1,2,3,4,5 (4F28001-03) Soil									
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
North Wall Pt #1,2,3,4,5 (4F28001-04) Soil									
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
Bottom Pt #1,2,3,4,5 @ 12' Bgs (4F28001-05) Soil									
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
East Wall Field Comp (4F28001-06) Soil									
Chloride	383	20.0	mg/kg Wet	2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
West Wall Field Comp (4F28001-07) Soil									
Chloride	585	20.0	mg/kg Wet	2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
North Wall Field Comp (4F28001-08) Soil									
Chloride	436	20.0	mg/kg Wet	2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
South Wall Field Comp (4F28001-09) Soil									
Chloride	617	20.0	mg/kg Wet	2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	

Environmental Lab of Texas

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Page 6 of 13

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Water Field Comp @12' bgs (4F28001-10) Soil									
Chloride	372	20.0	mg/kg Wet	2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF42803 - Solvent Extraction (GC)**

**Blank (EF42803-BLK1)**

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	37.0		mg/kg	50.0		74.0	70-130			
Surrogate: 1-Chlorooctadecane	37.0		"	50.0		74.0	70-130			

**LCS (EF42803-BS1)**

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	411	10.0	mg/kg wet	500		82.2	75-125			
Diesel Range Organics >C12-C35	424	10.0	"	500		84.8	75-125			
Total Hydrocarbon C6-C35	835	10.0	"	1000		83.5	75-125			
Surrogate: 1-Chlorooctane	48.6		mg/kg	50.0		97.2	70-130			
Surrogate: 1-Chlorooctadecane	35.6		"	50.0		71.2	70-130			

**Calibration Check (EF42803-CCV1)**

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	445		mg/kg	500		89.0	80-120			
Diesel Range Organics >C12-C35	485		"	500		97.0	80-120			
Total Hydrocarbon C6-C35	930		"	1000		93.0	80-120			
Surrogate: 1-Chlorooctane	51.8		"	50.0		104	70-130			
Surrogate: 1-Chlorooctadecane	36.6		"	50.0		73.2	70-130			

**Matrix Spike (EF42803-MS1)**

Source: 4F25003-06

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	533	10.0	mg/kg dry	538	ND	99.1	75-125			
Diesel Range Organics >C12-C35	576	10.0	"	538	ND	107	75-125			
Total Hydrocarbon C6-C35	1110	10.0	"	1080	ND	103	75-125			
Surrogate: 1-Chlorooctane	57.1		mg/kg	50.0		114	70-130			
Surrogate: 1-Chlorooctadecane	48.6		"	50.0		97.2	70-130			

**Matrix Spike Dup (EF42803-MSD1)**

Source: 4F25003-06

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	517	10.0	mg/kg dry	538	ND	96.1	75-125	3.05	20	
Diesel Range Organics >C12-C35	577	10.0	"	538	ND	107	75-125	0.173	20	
Total Hydrocarbon C6-C35	1090	10.0	"	1080	ND	101	75-125	1.82	20	
Surrogate: 1-Chlorooctane	55.3		mg/kg	50.0		111	70-130			
Surrogate: 1-Chlorooctadecane	48.1		"	50.0		96.2	70-130			

Environmental Lab of Texas

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Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF42907 - EPA 5030C (GC)**

**Blank (EF42907-BLK1)**

Prepared & Analyzed: 06/25/04

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	85.6		ug/kg	100		85.6	80-120			
Surrogate: 4-Bromofluorobenzene	90.2		"	100		90.2	80-120			

**LCS (EF42907-BS1)**

Prepared: 06/25/04 Analyzed: 06/28/04

Benzene	99.8		ug/kg	100		99.8	80-120			
Toluene	103		"	100		103	80-120			
Ethylbenzene	103		"	100		103	80-120			
Xylene (p/m)	207		"	200		104	80-120			
Xylene (o)	105		"	100		105	80-120			
Surrogate: a,a,a-Trifluorotoluene	101		"	100		101	80-120			
Surrogate: 4-Bromofluorobenzene	107		"	100		107	80-120			

**Calibration Check (EF42907-CCV1)**

Prepared: 06/25/04 Analyzed: 06/28/04

Benzene	98.0		ug/kg	100		98.0	80-120			
Toluene	103		"	100		103	80-120			
Ethylbenzene	101		"	100		101	80-120			
Xylene (p/m)	202		"	200		101	80-120			
Xylene (o)	101		"	100		101	80-120			
Surrogate: a,a,a-Trifluorotoluene	107		"	100		107	80-120			
Surrogate: 4-Bromofluorobenzene	100		"	100		100	80-120			

**Matrix Spike (EF42907-MS1)**

Source: 4F28001-01

Prepared: 06/25/04 Analyzed: 06/29/04

Benzene	106		ug/kg	100	ND	106	80-120			
Toluene	110		"	100	ND	110	80-120			
Ethylbenzene	109		"	100	ND	109	80-120			
Xylene (p/m)	218		"	200	ND	109	80-120			
Xylene (o)	107		"	100	ND	107	80-120			
Surrogate: a,a,a-Trifluorotoluene	109		"	100		109	80-120			
Surrogate: 4-Bromofluorobenzene	104		"	100		104	80-120			

Environmental Lab of Texas

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Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF42907 - EPA 5030C (GC)**

Matrix Spike Dup (EF42907-MSD1) Source: 4F28001-01 Prepared: 06/25/04 Analyzed: 06/29/04

Benzene	100		ug/kg	100	ND	100	80-120	5.83	20	
Toluene	104		"	100	ND	104	80-120	5.61	20	
Ethylbenzene	104		"	100	ND	104	80-120	4.69	20	
Xylene (p/m)	209		"	200	ND	104	80-120	4.69	20	
Xylene (o)	107		"	100	ND	107	80-120	0.00	20	
Surrogate: a,a,a-Trifluorotoluene	102		"	100		102	80-120			
Surrogate: 4-Bromofluorobenzene	110		"	100		110	80-120			

**Batch EG40101 - EPA 5030C (GC)**

**Blank (EG40101-BLK1)**

Prepared & Analyzed: 06/29/04

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	91.9		ug/kg	100		91.9	80-120			
Surrogate: 4-Bromofluorobenzene	101		"	100		101	80-120			

**LCS (EG40101-BS1)**

Prepared & Analyzed: 06/29/04

Benzene	96.3		ug/kg	100		96.3	80-120			
Toluene	102		"	100		102	80-120			
Ethylbenzene	103		"	100		103	80-120			
Xylene (p/m)	205		"	200		102	80-120			
Xylene (o)	104		"	100		104	80-120			
Surrogate: a,a,a-Trifluorotoluene	94.4		"	100		94.4	80-120			
Surrogate: 4-Bromofluorobenzene	104		"	100		104	80-120			

Environmental Lab of Texas

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Page 10 of 13

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG40101 - EPA 5030C (GC)**

**Calibration Check (EG40101-CCV1)**

Prepared: 06/29/04 Analyzed: 06/30/04

Benzene	86.1		ug/kg	100		86.1	80-120			
Toluene	90.0		"	100		90.0	80-120			
Ethylbenzene	92.0		"	100		92.0	80-120			
Xylene (p/m)	184		"	200		92.0	80-120			
Xylene (o)	97.8		"	100		97.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	89.9		"	100		89.9	80-120			
Surrogate: 4-Bromofluorobenzene	98.3		"	100		98.3	80-120			

**Matrix Spike (EG40101-MS1)**

Source: 4F28001-07

Prepared: 06/29/04 Analyzed: 06/30/04

Benzene	90.7		ug/kg	100	ND	90.7	80-120			
Toluene	95.6		"	100	ND	95.6	80-120			
Ethylbenzene	98.6		"	100	ND	98.6	80-120			
Xylene (p/m)	198		"	200	ND	99.0	80-120			
Xylene (o)	100		"	100	ND	100	80-120			
Surrogate: a,a,a-Trifluorotoluene	94.6		"	100		94.6	80-120			
Surrogate: 4-Bromofluorobenzene	102		"	100		102	80-120			

**Matrix Spike Dup (EG40101-MSD1)**

Source: 4F28001-07

Prepared: 06/29/04 Analyzed: 06/30/04

Benzene	90.0		ug/kg	100	ND	90.0	80-120	0.775	20	
Toluene	94.4		"	100	ND	94.4	80-120	1.26	20	
Ethylbenzene	97.2		"	100	ND	97.2	80-120	1.43	20	
Xylene (p/m)	195		"	200	ND	97.5	80-120	1.53	20	
Xylene (o)	101		"	100	ND	101	80-120	0.995	20	
Surrogate: a,a,a-Trifluorotoluene	92.9		"	100		92.9	80-120			
Surrogate: 4-Bromofluorobenzene	107		"	100		107	80-120			

Environmental Lab of Texas

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Page 11 of 13

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF42901 - General Preparation (Prep)**

Blank (EF42901-BLK1) Prepared & Analyzed: 06/28/04

% Solids 100 %

Duplicate (EF42901-DUP1) Source: 4F28001-01 Prepared & Analyzed: 06/28/04

% Solids 89.0 % 89.0 0.00 20

**Batch EF43008 - Water Extraction**

Blank (EF43008-BLK1) Prepared & Analyzed: 06/29/04

Chloride ND 20.0 mg/kg Wet

Matrix Spike (EF43008-MS1) Source: 4F28001-06 Prepared & Analyzed: 06/29/04

Chloride 851 20.0 mg/kg Wet 500 383 93.6 80-120

Matrix Spike Dup (EF43008-MSD1) Source: 4F28001-06 Prepared & Analyzed: 06/29/04

Chloride 830 20.0 mg/kg Wet 500 383 89.4 80-120 2.50 20

Reference (EF43008-SRM1) Prepared & Analyzed: 06/29/04

Chloride 5210 mg/kg 5000 104 80-120

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

### Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.  
J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:

Raland K Tuttle

Date:

7-01-04

Raland K. Tuttle, QA Officer

Celey D. Keene, Lab Director, Org. Tech Director

Jeanne Mc Murrey, Inorg. Tech Director

James L. Hawkins, Chemist/Geologist

Sara Molina, Chemist

Sandra Biezugbe, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.*

Page 13 of 13

12600 West I-20 East  
Odessa, Texas 79763  
Phone: 915-563-1800  
Fax: 915-563-1713

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Kristin Farris

Company Name

## Quiz Operating

Company Address:

W. Taylor

City/State/Zip:

40665 NM 88240

Telephone No:

05 393-9174

**Fax No:**

**Sampler Signature:**

for best

LAB # (lab tag only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative							Matrix				TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Seminvolatiles	BTEX 40218/5030	Analyze For:
					HNO <sub>3</sub>	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub>	None	Other (Specify)	Water	Sedge	Soil	Other (specify):										
4728001	-01	West Wall Pt. #1	1:40	6/22/04	1	X									X									
		West Wall Pt. #2	1:40	6/22/04	1	X									X									
		West Wall Pt. #3	1:40	6/22/04	1	X									X									
		West Wall Pt. #4	1:40	6/22/04	1	X									X									
		West Wall Pt. #5	1:40	6/22/04	1	X									X									
-02		South Wall Pt. #1	1:30	6/22/04	1	X									X									
		South Wall Pt. #2	1:30	6/22/04	1	X									X									
		South Wall Pt. #3	1:30	6/22/04	1	X									X									
		South Wall Pt. #4	1:30	6/22/04	1	X									X									
		South Wall Pt. #5	1:30	6/22/04	1	X									X									

Special Instructions:

Composite West Wall #1,2,3,4,5 Run BTEX ONLY; Composite South Wall 1,2,3,4,5

Relinquished by: *[Signature]*

Run BTEX ONLY

Received by: *[Signature]*

Relinquished by: *[Signature]*

Date: 6/25/04

Date: 6/25/04

Date: 6/26/04

Time: 8am

Time: 6:25 am

Time: 6:26 am

Dec 2004

### Special Instructions:



12600 West I-20 East  
Odessa, Texas 79763  
Phone: 915-563-1800  
Fax: 915-563-1713

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris

Company Name Rice Operating

Company Address: 122. W. Taylor

City/State/Zip: Hobbs NM 88240

Telephone No: 505 393-9174

Sampler Signature:

Fax No:

Project Name:

Project #:

Project Loc:

2023

4-4-3

30

505

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

101 E MARLAND HOBBS, NM 88240  
JUL 12 2004  
RICE OPERATING  
HOBBS, NM

Sampling Date: 07/01/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC/HM

LAB NUMBER SAMPLE ID		GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		07/06/04	07/06/04	07/06/04
H8879-1	REMD. BACKFILL	<10.0	414	289**
Quality Control		778	819	1000
True Value QC		800	800	1000
% Recovery		97.3	102	100
Relative Percent Difference		12.4	10.8	2.0

\*\*Matrix interference (color) observed.

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.





# ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
RICE OPERATING CO.  
ATTN: ROY RASCON  
122 W. TAYLOR  
HOBBS, NM 88240  
FAX TO: (505) 397-1471

Receiving Date: 07/06/04  
Reporting Date: 07/08/04  
Project Number: NOT GIVEN  
Project Name: C-4-3  
Project Location: BD

Sampling Date: 07/01/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		07/08/04	07/08/04	07/08/04	07/08/04
H8879-1	REMD. BACKFILL	<0.005	<0.005	<0.005	<0.015
Quality Control		0.106	0.102	0.091	0.091
True Value QC		0.100	0.100	0.100	0.300
% Recovery		106	102	91.2	90.5
Relative Percent Difference		2.0	3.9	3.1	1.5

METHOD: EPA SW-846 8260

Chemist

*Burgess J. Cook*

Date

*7/18/04*

**ARDINAL LABORATORIES, INC.**

22111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240  
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

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PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
RICE OPERATING CO.  
ATTN: J. GATTS  
122 W. TAYLOR  
HOBBS, NM 88240  
FAX TO: (505) 397-1471

Receiving Date: 06/17/04  
Reporting Date: 06/18/04  
Project Number: NOT GIVEN  
Project Name: C-4-3  
Project Location: BD

Sampling Date: 06/17/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
------------	-----------	--	--	----------------

ANALYSIS DATE	06/17/04	06/17/04	06/18/04
H8834-1 SOURCE @ 17' BGS	21.7	2640	64
Quality Control	803	808	1020
True Value QC	800	800	1000
% Recovery	100	101	102
Relative Percent Difference	3.9	1.8	1.0

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.

  
Chemist

  
Date

H8834A.XLS

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# ARDINAL LABORATORIES

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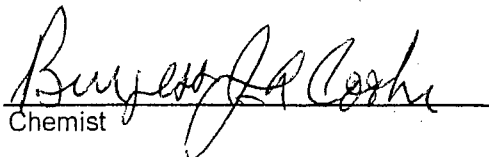
ANALYTICAL RESULTS FOR  
RICE OPERATING CO.  
ATTN: J. GATTS  
122 W. TAYLOR  
HOBBS, NM 88240  
FAX TO: (505) 397-1471

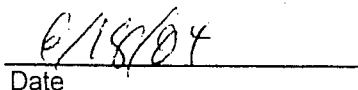
Receiving Date: 06/17/04  
Reporting Date: 06/18/04  
Project Number: NOT GIVEN  
Project Name: C-4-3  
Project Location: BD

Sampling Date: 06/17/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		06/17/04	06/17/04	06/17/04	06/17/04
H8834-1	SOURCE @ 17' BGS	0.298	0.065	4.78	5.71
Quality Control		0.102	0.098	0.093	0.273
True Value QC		0.100	0.100	0.100	0.300
% Recovery		102	98.4	93.4	90.9
Relative Percent Difference		5.6	3.1	1.2	0.8

METHOD: EPA SW-846 8260

  
Chemist

  
Date

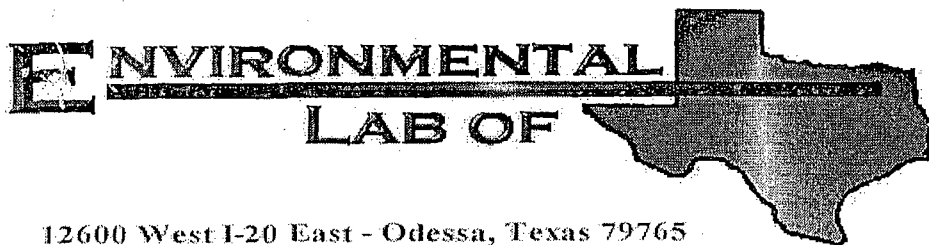
**ORDINAL LABORATORIES, INC.**

22111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240  
(915) 673-7001 Fax (915) 673-7020 (505) 393-2328 Fax (505) 393-2476

Price of.

[illegible]

\* Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

Prepared for:

Kristin Farris  
Rice Operating Co.  
122 W. Taylor  
Hobbs, NM 88240

Project C-4-3

Project Number: None Given

Location: None Given

Lab Order Number: 4F28001

Report Date: 07/01/04

Ice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
West Wall Pt #1,2,3,4,5	4F28001-01	Soil	06/22/04 13:40	06/28/04 07:52
South Wall Pt #1,2,3,4,5	4F28001-02	Soil	06/22/04 13:30	06/28/04 07:52
East Wall Pt #1,2,3,4,5	4F28001-03	Soil	06/22/04 13:00	06/28/04 07:52
North Wall Pt #1,2,3,4,5	4F28001-04	Soil	06/22/04 13:10	06/28/04 07:52
Bottom Pt #1,2,3,4,5 @ 12' Bgs	4F28001-05	Soil	06/22/04 13:20	06/28/04 07:52
East Wall Field Comp	4F28001-06	Soil	06/22/04 13:05	06/28/04 07:52
West Wall Field Comp	4F28001-07	Soil	06/22/04 13:40	06/28/04 07:52
North Wall Field Comp	4F28001-08	Soil	06/22/04 13:10	06/28/04 07:52
South Wall Field Comp	4F28001-09	Soil	06/22/04 13:30	06/28/04 07:52
Bottom Wall Field Comp @12' bgs	4F28001-10	Soil	06/22/04 13:20	06/28/04 07:52

Rice Operating Co.  
121 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
West Wall Pt #1,2,3,4,5 (4F28001-01) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	80-120		"	"	"	"	
South Wall Pt #1,2,3,4,5 (4F28001-02) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.0289	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.0656	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.188	0.0250	"	"	"	"	"	"	
Xylene (o)	0.0462	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	80-120		"	"	"	"	
East Wall Pt #1,2,3,4,5 (4F28001-03) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.100	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.186	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.820	0.0250	"	"	"	"	"	"	
Xylene (o)	0.269	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.3 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.3 %	80-120		"	"	"	"	
North Wall Pt #1,2,3,4,5 (4F28001-04) Soil <i>LAB COMP.</i>									
Benzene	ND	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.0977	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.350	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.845	0.0250	"	"	"	"	"	"	
Xylene (o)	0.274	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		103 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	80-120		"	"	"	"	

Environmental Lab of Texas

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Page 2 of 13



Ice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

Organics by GC  
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Pt #1,2,3,4,5 @ 12' Bgs (4F28001-05) Soil <b>LAB COMP</b>									
Benzene	0.0268	0.0250	mg/kg dry	25	EF42907	06/25/04	06/28/04	EPA 8021B	
Toluene	0.139	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.155	0.0250	"	"	"	"	"	"	
Xylene (p/m)	1.08	0.0250	"	"	"	"	"	"	
Xylene (o)	0.128	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		131 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		97.9 %	80-120		"	"	"	"	
East Wall Field Comp (4F28001-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.135	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.126	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.701	0.0250	"	"	"	"	"	"	
Xylene (o)	0.222	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		89.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	183	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	1070	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1250	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		86.8 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130		"	"	"	"	
West Wall Field Comp (4F28001-07) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		92.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	J [8.82]	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	J
Diesel Range Organics >C12-C35	27.9	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	27.9	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		82.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		83.8 %	70-130		"	"	"	"	

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Ice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>North Wall Field Comp (4F28001-08) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.0796	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.184	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.700	0.0250	"	"	"	"	"	"	
Xylene (o)	0.259	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		91.2 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	141	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	911	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1050	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		90.8 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		105 %	70-130		"	"	"	"	
<b>South Wall Field Comp (4F28001-09) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.0265	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.0433	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.131	0.0250	"	"	"	"	"	"	
Xylene (o)	0.0336	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		86.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.6 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	19.0	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	183	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	202	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		93.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		93.6 %	70-130		"	"	"	"	
<b>Bottom Wall Field Comp @12' bgs (4F28001-10) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EG40101	06/29/04	06/29/04	EPA 8021B	
Toluene	0.123	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.113	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.829	0.0250	"	"	"	"	"	"	
Xylene (o)	0.133	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		87.9 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	156	10.0	mg/kg dry	1	EF42803	06/28/04	06/28/04	EPA 8015M	
Diesel Range Organics >C12-C35	984	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1140	10.0	"	"	"	"	"	"	

Environmental Lab of Texas

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Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Wall Field Comp @12' bgs (4F28001-10) Soil									
Surrogate: 1-Chlorooctane		96.6 %	70-130		EF42803	06/28/04	06/28/04	EPA 8015M	
Surrogate: 1-Chlorooctadecane		110 %	70-130		"	"	"	"	

Ice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>West Wall Pt #1,2,3,4,5 (4F28001-01) Soil</b>									
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>South Wall Pt #1,2,3,4,5 (4F28001-02) Soil</b>									
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>East Wall Pt #1,2,3,4,5 (4F28001-03) Soil</b>									
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>North Wall Pt #1,2,3,4,5 (4F28001-04) Soil</b>									
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>Bottom Pt #1,2,3,4,5 @ 12' Bgs (4F28001-05) Soil</b>									
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>East Wall Field Comp (4F28001-06) Soil</b>									
Chloride	383	20.0 mg/kg Wet		2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>West Wall Field Comp (4F28001-07) Soil</b>									
Chloride	585	20.0 mg/kg Wet		2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>North Wall Field Comp (4F28001-08) Soil</b>									
Chloride	436	20.0 mg/kg Wet		2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	
<b>South Wall Field Comp (4F28001-09) Soil</b>									
Chloride	617	20.0 mg/kg Wet		2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	89.0		%	1	EF42901	06/28/04	06/28/04	% calculation	

Environmental Lab of Texas

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Page 6 of 13

Ice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471  
Reported:  
07/01/04 10:20

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bottom Water Field Comp @12' bgs (4F28001-10) Soil									
Chloride	372	20.0	mg/kg Wet	2	EF43008	06/29/04	06/29/04	SW 846 9253	
% Solids	90.0		%	1	EF42901	06/28/04	06/28/04	% calculation	

Environmental Lab of Texas

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Page 7 of 13

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF42803 - Solvent Extraction (GC)**

**Blank (EF42803-BLK1)**

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	37.0		mg/kg	50.0		74.0	70-130			
Surrogate: 1-Chlorooctadecane	37.0		"	50.0		74.0	70-130			

**LCS (EF42803-BS1)**

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	411	10.0	mg/kg wet	500		82.2	75-125			
Diesel Range Organics >C12-C35	424	10.0	"	500		84.8	75-125			
Total Hydrocarbon C6-C35	835	10.0	"	1000		83.5	75-125			
Surrogate: 1-Chlorooctane	48.6		mg/kg	50.0		97.2	70-130			
Surrogate: 1-Chlorooctadecane	35.6		"	50.0		71.2	70-130			

**Calibration Check (EF42803-CCV1)**

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	445		mg/kg	500		89.0	80-120			
Diesel Range Organics >C12-C35	485		"	500		97.0	80-120			
Total Hydrocarbon C6-C35	930		"	1000		93.0	80-120			
Surrogate: 1-Chlorooctane	51.8		"	50.0		104	70-130			
Surrogate: 1-Chlorooctadecane	36.6		"	50.0		73.2	70-130			

**Matrix Spike (EF42803-MS1)**

Source: 4F25003-06

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	533	10.0	mg/kg dry	538	ND	99.1	75-125			
Diesel Range Organics >C12-C35	576	10.0	"	538	ND	107	75-125			
Total Hydrocarbon C6-C35	1110	10.0	"	1080	ND	103	75-125			
Surrogate: 1-Chlorooctane	57.1		mg/kg	50.0		114	70-130			
Surrogate: 1-Chlorooctadecane	48.6		"	50.0		97.2	70-130			

**Matrix Spike Dup (EF42803-MSD1)**

Source: 4F25003-06

Prepared & Analyzed: 06/28/04

Gasoline Range Organics C6-C12	517	10.0	mg/kg dry	538	ND	96.1	75-125	3.05	20	
Diesel Range Organics >C12-C35	577	10.0	"	538	ND	107	75-125	0.173	20	
Total Hydrocarbon C6-C35	1090	10.0	"	1080	ND	101	75-125	1.82	20	
Surrogate: 1-Chlorooctane	55.3		mg/kg	50.0		111	70-130			
Surrogate: 1-Chlorooctadecane	48.1		"	50.0		96.2	70-130			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 8 of 13

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF42907 - EPA 5030C (GC)**

**Blank (EF42907-BLK1)**

Prepared & Analyzed: 06/25/04

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	85.6		ug/kg	100		85.6	80-120			
Surrogate: 4-Bromofluorobenzene	90.2		"	100		90.2	80-120			

**LCS (EF42907-BS1)**

Prepared: 06/25/04 Analyzed: 06/28/04

Benzene	99.8		ug/kg	100		99.8	80-120			
Toluene	103		"	100		103	80-120			
Ethylbenzene	103		"	100		103	80-120			
Xylene (p/m)	207		"	200		104	80-120			
Xylene (o)	105		"	100		105	80-120			
Surrogate: a,a,a-Trifluorotoluene	101		"	100		101	80-120			
Surrogate: 4-Bromofluorobenzene	107		"	100		107	80-120			

**Calibration Check (EF42907-CCV1)**

Prepared: 06/25/04 Analyzed: 06/28/04

Benzene	98.0		ug/kg	100		98.0	80-120			
Toluene	103		"	100		103	80-120			
Ethylbenzene	101		"	100		101	80-120			
Xylene (p/m)	202		"	200		101	80-120			
Xylene (o)	101		"	100		101	80-120			
Surrogate: a,a,a-Trifluorotoluene	107		"	100		107	80-120			
Surrogate: 4-Bromofluorobenzene	100		"	100		100	80-120			

**Matrix Spike (EF42907-MS1)**

Source: 4F28001-01

Prepared: 06/25/04 Analyzed: 06/29/04

Benzene	106		ug/kg	100	ND	106	80-120			
Toluene	110		"	100	ND	110	80-120			
Ethylbenzene	109		"	100	ND	109	80-120			
Xylene (p/m)	218		"	200	ND	109	80-120			
Xylene (o)	107		"	100	ND	107	80-120			
Surrogate: a,a,a-Trifluorotoluene	109		"	100		109	80-120			
Surrogate: 4-Bromofluorobenzene	104		"	100		104	80-120			

Environmental Lab of Texas

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Page 9 of 13

Oilfield Services Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch EF42907 - EPA 5030C (GC)**

**Matrix Spike Dup (EF42907-MSD1)**

Source: 4F28001-01

Prepared: 06/25/04 Analyzed: 06/29/04

Benzene	100		ug/kg	100	ND	100	80-120	5.83	20	
Toluene	104		"	100	ND	104	80-120	5.61	20	
Ethylbenzene	104		"	100	ND	104	80-120	4.69	20	
Xylene (p/m)	209		"	200	ND	104	80-120	4.69	20	
Xylene (o)	107		"	100	ND	107	80-120	0.00	20	
Surrogate: a,a,a-Trifluorotoluene	102		"	100		102	80-120			
Surrogate: 4-Bromofluorobenzene	110		"	100		110	80-120			

**Batch EG40101 - EPA 5030C (GC)**

**Blank (EG40101-BLK1)**

Prepared & Analyzed: 06/29/04

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	91.9		ug/kg	100		91.9	80-120			
Surrogate: 4-Bromofluorobenzene	101		"	100		101	80-120			

**LCS (EG40101-BS1)**

Prepared & Analyzed: 06/29/04

Benzene	96.3		ug/kg	100		96.3	80-120			
Toluene	102		"	100		102	80-120			
Ethylbenzene	103		"	100		103	80-120			
Xylene (p/m)	205		"	200		102	80-120			
Xylene (o)	104		"	100		104	80-120			
Surrogate: a,a,a-Trifluorotoluene	94.4		"	100		94.4	80-120			
Surrogate: 4-Bromofluorobenzene	104		"	100		104	80-120			

Environmental Lab of Texas

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Page 10 of 13



ce Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG40101 - EPA 5030C (GC)**

**Calibration Check (EG40101-CCV1)**

Prepared: 06/29/04 Analyzed: 06/30/04

Benzene	86.1		ug/kg	100		86.1	80-120			
Toluene	90.0		"	100		90.0	80-120			
Ethylbenzene	92.0		"	100		92.0	80-120			
Xylene (p/m)	184		"	200		92.0	80-120			
Xylene (o)	97.8		"	100		97.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	89.9		"	100		89.9	80-120			
Surrogate: 4-Bromofluorobenzene	98.3		"	100		98.3	80-120			

**Matrix Spike (EG40101-MS1)**

Source: 4F28001-07

Prepared: 06/29/04 Analyzed: 06/30/04

Benzene	90.7		ug/kg	100	ND	90.7	80-120			
Toluene	95.6		"	100	ND	95.6	80-120			
Ethylbenzene	98.6		"	100	ND	98.6	80-120			
Xylene (p/m)	198		"	200	ND	99.0	80-120			
Xylene (o)	100		"	100	ND	100	80-120			
Surrogate: a,a,a-Trifluorotoluene	94.6		"	100		94.6	80-120			
Surrogate: 4-Bromofluorobenzene	102		"	100		102	80-120			

**Matrix Spike Dup (EG40101-MSD1)**

Source: 4F28001-07

Prepared: 06/29/04 Analyzed: 06/30/04

Benzene	90.0		ug/kg	100	ND	90.0	80-120	0.775	20	
Toluene	94.4		"	100	ND	94.4	80-120	1.26	20	
Ethylbenzene	97.2		"	100	ND	97.2	80-120	1.43	20	
Xylene (p/m)	195		"	200	ND	97.5	80-120	1.53	20	
Xylene (o)	101		"	100	ND	101	80-120	0.995	20	
Surrogate: a,a,a-Trifluorotoluene	92.9		"	100		92.9	80-120			
Surrogate: 4-Bromofluorobenzene	107		"	100		107	80-120			

Environmental Lab of Texas

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Page 11 of 13

Kice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF42901 - General Preparation (Prep)**

Blank (EF42901-BLK1) Prepared & Analyzed: 06/28/04

% Solids 100 %

Duplicate (EF42901-DUP1) Source: 4F28001-01 Prepared & Analyzed: 06/28/04

% Solids 89.0 % 89.0 0.00 20

**Batch EF43008 - Water Extraction**

Blank (EF43008-BLK1) Prepared & Analyzed: 06/29/04

Chloride ND 20.0 mg/kg Wet

Matrix Spike (EF43008-MS1) Source: 4F28001-06 Prepared & Analyzed: 06/29/04

Chloride 851 20.0 mg/kg Wet 500 383 93.6 80-120

Matrix Spike Dup (EF43008-MSD1) Source: 4F28001-06 Prepared & Analyzed: 06/29/04

Chloride 830 20.0 mg/kg Wet 500 383 89.4 80-120 2.50 20

Reference (EF43008-SRM1) Prepared & Analyzed: 06/29/04

Chloride 5210 mg/kg 5000 104 80-120

Environmental Lab of Texas

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Page 12 of 13

Rice Operating Co.  
122 W. Taylor  
Hobbs NM, 88240

Project: C-4-3  
Project Number: None Given  
Project Manager: Kristin Farris

Fax: (505) 397-1471

Reported:  
07/01/04 10:20

### Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.  
J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:

Raland K Tuttle

Date:

7-01-04

Raland K. Tuttle, QA Officer

Celey D. Keene, Lab Director, Org. Tech Director

Jeanne Mc Murrey, Inorg. Tech Director

James L. Hawkins, Chemist/Geologist

Sara Molina, Chemist

Sandra Biezugbe, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

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Page 13 of 13



**Environmental Lab of Texas, Inc.**

12600 West I-20 East  
Odessa, Texas 79763  
Phone: 915-563-1800  
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Kristin Farris

Project Name:

C-4-3

Company Name

## Rice Operating

Project #:

Company Address:

122. W. Taylor

Project Loc:

30

City/State/Zip:

Hobbs NM 88240

PO #: 505

Telephone No:

05 393-9174

Fax No.

Sampler Signature:

*[Signature]*

LAB # (Lab Use Only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative						Matrix			TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 40216/5030	Analyze For:
					HNO <sub>3</sub>	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub>	None	Other (Specify)	Water	Sludge	Soil									
					Ice																	
4FZ8001	-03	East WALL Pt. #1	6/22/04	1:00	1	X																
		East WALL Pt. #2	6/22/04	1:00	1	X																
		East WALL Pt. #3	6/22/04	1:00	1	X																
		East WALL Pt. #4	6/22/04	1:00	1	X																
		East WALL Pt. #5	6/22/04	1:00	1	X																
-04	North WALL Pt. #1	6/22/04	1:10	1	X																	
	North WALL Pt. #2	6/22/04	1:10	1	X																	
	North WALL Pt. #3	6/22/04	1:10	1	X																	
	North WALL Pt. #4	6/22/04	1:10	1	X																	
	North WALL Pt. #5	6/22/04	1:10	1	X																	

Special Instructions:

Composite East WALL #1,2,3,4,5 Run BTEX ONLY; Composite North WALL #1,2,3,4,5 BTEX ONLY

Relinquished by: *G. Hoff*

Relinquished by: *CO Vetter*

Received by: *CO Vetter*

Received by: *Rachel H...*

Time: 6/25/04 5 PM

Time: 6/25/04 8 PM

Date: 6/25/04

Date: 6/25/04

Time: 6/25/04 5 PM

Time: 6/25/04 8 PM



12600 West I-20 East  
Odessa, Texas 79763  
Phone: 915-563-1800  
Fax: 915-563-1713

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:	Kristin Farris	Project Name:	C-4-3
Company Name	Rice Operating	Project #:	
Company Address:	122 W. Taylor	Project Loc:	BD
City/State/Zip:	Hobbs NM 88240	PO #:	505

Fax No:

**Sampler Signature:**

	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative								Matrix				Analyze For:														
					Ice	$HNO_3$	HCl	NaOH	$H_2SO_4$	None	Other (Specify)	Water	Sludge	Soil	Other (specify)	TDS ( $\text{CLASAR} / \text{EC}$ )	TPH 418.1	TPH TX 100S/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030								
																TOTAL	TCLP														
4FZ8C001 LAB # [blank] site #112	Bot. Pt #1 at 12' bgs	6/22/04	1:20	1	X																RUSH TAT (Pre-Schedule)										
M - 05	Bottom Pt. #2 at 12' bgs	6/22/04	1:20	1	X																										
	Bottom Pt. #3 at 12' bgs	6/22/04	1:20	1	X																										
	Bottom Pt. #4 at 12' bgs	6/22/04	1:20	1	X																										
	Bottom Pt. #5 at 12' bgs	6/22/04	1:20	1	X																										
N - 06	East WALL Field Comp	6/22/04	1:05	1	X																										
N - 08T	West WALL Field Comp	6/22/04	1:40	1	X																										
-09	North WALL Field Comp	6/22/04	1:10	1	X																										
-09	South WALL Field Comp	6/22/04	1:30	1	X																										
-10	Bottom Field Comp at 12' bgs	6/22/04	1:20	1	X																										

Special Instructions: Composite Bottom #1, 2, 3, 4, 5 Run BTEX ONLY

Relinquished by: J. Pratt Date: 6/25/04 Time: 6:25/04

Received by: CAP Horn Date: 6/29/04 Time: 5 PM

Relinquished by: CAP Horn Date: 6/29/04 Time: 8 am

Received by: K. Williams & R. Johnson Date: 6-26-04 Time: 0804

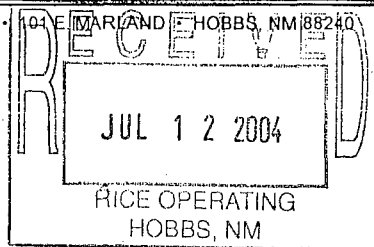


# ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 104 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
RICE OPERATING CO.  
ATTN: ROY RASCON  
122 W. TAYLOR  
HOBBS, NM 88240  
FAX TO: (505) 397-1471



Receiving Date: 07/06/04  
Reporting Date: 07/08/04  
Project Number: NOT GIVEN  
Project Name: C-4-3  
Project Location: BD

Sampling Date: 07/01/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC/HM

LAB NUMBER	SAMPLE ID	GRO	DRO	CI*
		(C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	(>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	(mg/Kg)
ANALYSIS DATE		07/06/04	07/06/04	07/06/04
H8879-1	REMD. BACKFILL	<10.0	414	289**
Quality Control		778	819	1000
True Value QC		800	800	1000
% Recovery		97.3	102	100
Relative Percent Difference		12.4	10.8	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B

\*Analyses performed on 1:4 w:v aqueous extracts.

\*\*Matrix interference (color) observed.

  
Chemist

7/8/04  
Date

H8879A.XLS

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2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240  
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† Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.



PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Receiving Date: 06/17/04  
Reporting Date: 06/18/04  
Project Number: NOT GIVEN  
Project Name: C-4-3  
Project Location: BD

Sampling Date: 06/17/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO	DRO	Cl*
		(C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	(>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	
ANALYSIS DATE		06/17/04	06/17/04	06/18/04
H8834-1	SOURCE @ 17' BGS	21.7	2640	64
Quality Control		803	808	1020
True Value QC		800	800	1000
% Recovery		100	101	102
Relative Percent Difference		3.9	1.8	1.0

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

*Bryan J. Cook*  
Chemist

6/18/04  
Date

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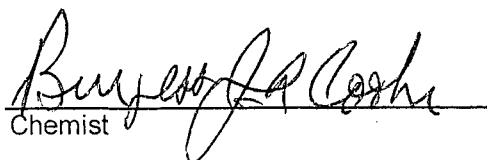
ANALYTICAL RESULTS FOR  
RICE OPERATING CO.  
ATTN: J. GATTS  
122 W. TAYLOR  
HOBBS, NM 88240  
FAX TO: (505) 397-1471

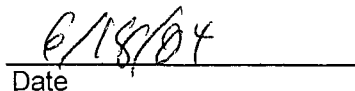
Receiving Date: 06/17/04  
Reporting Date: 06/18/04  
Project Number: NOT GIVEN  
Project Name: C-4-3  
Project Location: BD

Sampling Date: 06/17/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		06/17/04	06/17/04	06/17/04	06/17/04
H8834-1	SOURCE @ 17' BGS	0.298	0.065	4.78	5.71
Quality Control		0.102	0.098	0.093	0.273
True Value QC		0.100	0.100	0.100	0.300
% Recovery		102	98.4	93.4	90.9
Relative Percent Difference		5.6	3.1	1.2	0.8

METHOD: EPA SW-846 8260

  
Chemist

  
Date



**ARDINAL LABORATORIES, INC.**

22111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240  
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

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[illegible]

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