

1R - 426-44

REPORTS

DATE:

1/8/2003

1R-426-44

FINAL REPORT

**RICE OPERATING COMPANY
JUNCTION BOX FINAL REPORT**

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
Blinebry-Drinkard	K-17	K	17	21 S	37 E	Lea	under construction		

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Millard-Deck Estate OTHER _____

Depth to Groundwater None feet NMOCD SITE ASSESSMENT RANKING SCORE: 0

Date Started 9/9/2002 Date Completed 9/24/2002 OCD Witness No

Soil Excavated 380 cubic yards Excavation Length 30 Width 30 Depth 12 feet

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

FINAL ANALYTICAL RESULTS: Sample Date 9/24/2002 Sample Depth 12 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 NMOCD 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
SIDEWALLS	<0.025	<0.025	<0.025	<0.025	<10.0	<10.0	1310
BOTTOM	<0.025	<0.025	<0.025	<0.025	<10.0	<10.0	1030
REMEDIATED	<0.025	0.069	0.036	<0.116	46.4	688	780

General Description of Remedial Action: The soil directly below the junction box was visibly TPH-impacted to 10 ft BGS. ROC conducted a soil bore at the location on 9/9/02 and found that chloride impact started to dissipate around 75 ft. At 100 ft, returns tested 450 ppm chlorides but no water was ever encountered. A 30' x 30' area was excavated down to 12 ft to completely remove visible TPH. A 1 ft clay liner was installed at 12 ft. The excavated soil was landfarmed on location until the soil field tested a composite of 1710 ppm TPH. The soil was then backfilled into the excavation and contoured to control water flow and mimic the natural contours of the landscape. Any remaining hydrocarbons will naturally attenuate. A water-tight junction box has been built at the location.

cc: lab results, bore log

CHLORIDE FIELD TESTS

LOCATION	DEPTH (ft)	ppm
Soil Bore	5	483
	25	898
	45	1120
	65	1289
	75	698
	95	323
14' S	4	1478
	6	1298
12' N	4	1028
	8	573

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

DATE 1/8/2003

PRINTED NAME Kristin Farris

SIGNATURE Kristin Farris

TITLE Environmental Projects Scientist

K-17

ANALYTICAL REPORT

Prepared for:

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project: Rice

PO#:

Order#: G0204606

Report Date: 09/30/2002

Certificates

US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204606
Project:
Project Name: Rice
Location: K-17

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u>	<u>Date / Time</u>	<u>Container</u>	<u>Preservative</u>
			<u>Collected</u>	<u>Received</u>		
0204606-01	5 pt. Bottom Comp. @ 12'	SOIL	9/24/02 13:00	9/25/02 8:00	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M 8021B/5030 BTEX Chloride	Rejected: No		Temp: 13 C		
0204606-02	4 pt. Wall Comp. @ 11'	SOIL	9/24/02 13:00	9/25/02 8:00	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M 8021B/5030 BTEX Chloride	Rejected: No		Temp: 13 C		
0204606-03	Remediated Comp. Pile	SOIL	9/24/02 13:00	9/25/02 8:00	4 oz glass	Ice
	<u>Lab Testing:</u> 8015M 8021B/5030 BTEX Chloride	Rejected: No		Temp: 13 C		

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204606
Project:
Project Name: Rice
Location: K-17

Lab ID: 0204606-01
Sample ID: 5 pt. Bottom Comp. @ 12'

8015M

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		9/25/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

8021B/5030 BTEX

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
0003253-02		9/29/02 21:27	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	89%	80	120
Bromofluorobenzene	104%	80	120

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204606
Project:
Project Name: Rice
Location: K-17

Lab ID: 0204606-02
Sample ID: 4 pt. Wall Comp. @ 11'

8015M

Method <u>Blank</u>	Date <u>Prepared</u>	Date <u>Analyzed</u>	Sample <u>Amount</u>	Dilution <u>Factor</u>	Analyst	Method
		9/25/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

8021B/5030 BTEX

Method <u>Blank</u>	Date <u>Prepared</u>	Date <u>Analyzed</u>	Sample <u>Amount</u>	Dilution <u>Factor</u>	Analyst	Method
0003253-02		9/30/02 16:42	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	83%	80	120
Bromofluorobenzene	87%	80	120

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204606
Project:
Project Name: Rice
Location: K-17

Lab ID: 0204606-03
Sample ID: Remediated Comp. Pile

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		9/25/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	46.4	10.0
DRO, >C12-C35	688	10.0
TOTAL, C6-C35	734	10.0

8021B/5030 BTEX

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
0003253-02		9/29/02 22:33	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	0.036	0.025
Toluene	0.069	0.025
p/m-Xylene	0.091	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	96%	80	120
Bromofluorobenzene	98%	80	120

Approval:

Raland K. Tuttle, Lab Director, QA Officer

Date

Celey D. Keene, Org. Tech. Director

Jeanne McMurrey, Inorg. Tech. Director

Sandra Biezugbe, Lab Tech.

Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204606
Project:
Project Name: Rice
Location: K-17

Lab ID: 0204606-01
Sample ID: 5 pt. Bottom Comp. @ 12'

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	1030	mg/kg	1	20	9253	9/27/02	SB

Lab ID: 0204606-02
Sample ID: 4 pt. Wall Comp. @ 11'

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	1310	mg/kg	1	20	9253	9/27/02	SB

Lab ID: 0204606-03
Sample ID: Remediated Comp. Pile

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	780	mg/kg	1	20	9253	9/27/02	SB

Approval:

Raland K. Tuttle 9-30-02
Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

Date

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204606

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-02			<10.0		
CONTROL	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-03		952	1120	117.6%	
CONTROL DUP	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-04		952	1200	126.1%	6.9%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003235-05		1000	1220	122.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204606

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003253-02			<0.025		
Ethylbenzene-mg/kg		0003253-02			<0.025		
Toluene-mg/kg		0003253-02			<0.025		
p/m-Xylene-mg/kg		0003253-02			<0.025		
o-Xylene-mg/kg		0003253-02			<0.025		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204592-05	0	0.1	0.098	98.%	
Ethylbenzene-mg/kg		0204592-05	0	0.1	0.100	100.%	
Toluene-mg/kg		0204592-05	0	0.1	0.100	100.%	
p/m-Xylene-mg/kg		0204592-05	0	0.2	0.212	106.%	
o-Xylene-mg/kg		0204592-05	0	0.1	0.100	100.%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204592-05	0	0.1	0.099	99.%	1.%
Ethylbenzene-mg/kg		0204592-05	0	0.1	0.102	102.%	2.%
Toluene-mg/kg		0204592-05	0	0.1	0.102	102.%	2.%
p/m-Xylene-mg/kg		0204592-05	0	0.2	0.217	108.5%	2.3%
o-Xylene-mg/kg		0204592-05	0	0.1	0.103	103.%	3.%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003253-05		0.1	0.100	100.%	
Ethylbenzene-mg/kg		0003253-05		0.1	0.103	103.%	
Toluene-mg/kg		0003253-05		0.1	0.103	103.%	
p/m-Xylene-mg/kg		0003253-05		0.2	0.218	109.%	
o-Xylene-mg/kg		0003253-05		0.1	0.103	103.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204606

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0003244-01			<20.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0204605-01	1350	1000	2340	99.9%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0204605-01	1350	1000	2320	97.9%	0.9%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0003244-04		5000	4960	99.2%	

DRILLING LOG	Site Name/Location	BORING/WELL INFORMATION			Logged by: Eades
RICE Operating Company 122 West Taylor Hobbs, New Mexico 88240 (505) 393-9174	Jct. K-17 17-T21S-R37E BD SWD System Lea County, NM	Well No. SB-1	Date Drilled: 9/9/02	Driller: Eades	Completion: Plugged with cuttings.
		Well Depth:	Boring Depth: 100'	Well Material:	
		Casing Length	Boring Diameter: 4.75"	Casing Size:	
		Screen Length:	Drilling Method: Air Rotary	Slot Size:	

Test Results (ppm)						
DEPTH	SUBSURFACE LITHOLOGY	SAMPLE TYPE	CI	TPH	REMARKS	Boring
0	Ground surface		Titrate	EPA 418.1		
	Topsoil					
5	Pink Sand with Caliche	Grab	533			
10	Pink Sand with Caliche	Grab	732			
15	Pink Sand with Caliche	Grab	1,161		cuttings →	
20	Pink Sand with Caliche	Grab	1,311			
25	Pink Sand	Grab	948			
30	Sand and Sandstone Stringers	Grab	1,428			
35	Sandstone Pink Sand	Grab	1,383			
	Sand and Sandstone Stringers (37')					
40	Sandstone Pink Sand (@ 42')	Grab	1,035			
45	Pink Sand	Grab	1,170			
50	Pink Sand	Grab	1,143			
55	Pink Sand	Grab	1,626			
60	Pink Sand	Grab	1,304			
65	Red Sand	Grab	1,339			
70	Red Sand	Grab	1,921			
75	Sand and Sandstone Stringers	Grab	748			
80	Sand with Gravel	Grab	483			
	Sand @ 81'					
85	Sand with Gravel	Grab	427			
90	Sand with Gravel	Grab	347			
95	Sand	Grab	373			
100	Sand	Grab	450			

BD jct. K-17



After NORM Removal



Impact Excavation



Clay Liner in Excavation