1R - 426-12

WORK PLAN

DATE:

9-17-2007

1R-426-12
Work Plan
9-17-07

Highlander Environmental Corp.

Midland, Texas

CERTIFIED MAIL
RETURN RECIEPT NO. 7004 2510 0001 1869 0842

RECEIVED
2007 OCT 10 AM 11 53

Sept 17, 2007

Mr. Larry Johnson
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division-District I
1625 N. French Drive
Hobbs, New Mexico 88240

RE: **CORRECTIVE ACTION PLAN (CAP)**
O-17-1 VENT, BD SWD SYSTEM
UNIT "O", SEC. 17, T21S, R37E
Lea County, New Mexico
NMOCD #1R426-12

Mr. Johnson:

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 0-17-1 Vent, BD SWD System (System) and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental projects of this magnitude require System Partner AFE approval and work begins as funds are received. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is requested.

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

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

Each site shall have three submissions or a combination of:

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

2. Upon evaluating the data and results from the ICP, a recommended remedy is submitted in this **Corrective Action Plan** (CAP).

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

1.0 BACKGROUND & PREVIOUS WORK

As part of the ROC Junction Box Upgrade Workplan, starting on March 7, 2003, the junction box was removed and the Site was investigated vertically and horizontally with a backhoe. See site location as shown on Figure 1 and Figure 2. The Site was excavated to the approximate dimensions of 27' x 18' x 12'. TPH impact was noted to a depth of at least 12' below ground surface (bgs). Chloride impact was consistent vertically and horizontally, with a bottom hole chloride concentration of 1,740 mg/kg at 12' below ground surface. Regional groundwater information indicates that the depth to groundwater is approximately 70' bgs.

The junction box once contained a vent, but the junction was eliminated and the site was plumbed straight through with new poly pipeline. ROC completed the replacement of the line on August 29, 2003. On September 16, 2003, ROC submitted a Junction Box Disclosure Report to the NMOCD. A copy of the Junction Box Disclosure Report is included in Appendix A.

On August 10, 2006, ROC submitted the ICP to Mr. Wayne Price of the NMOCD-Santa Fe office for review. Mr. Price granted approval of the ICP in a letter dated September 21, 2006.

On October 9 and 10, 2006, Highlander personnel were onsite to oversee the installation of five soil borings (SB-1, SB-2, SB-3, SB-4, and SB-5) within and adjacent to the former junction box location. Soil samples were collected every 5' beginning at a depth of 13 feet bgs within the excavated area and 3 feet bgs outside the excavated area. Samples were collected utilizing a split spoon sampler, and placed into laboratory supplied containers and delivered to the laboratory under chain-of-custody control for chloride analysis by EPA method 300.0 and specific samples for TPH analysis by EPA method 8015 modified. The collected samples were field screened for TPH utilizing a photoionization detector (PID) and for chlorides with a field sampling kit. The split spoons were decontaminated between samples utilizing an alconox and deionization water wash followed by a deionization water rinse. Copies of laboratory analyses and chain-of-custody documentation are included in Appendix B. The soil boring locations are shown on Figure 3. The soil boring logs are included in Appendix C. The results of the sampling are summarized in Table 1.

Referring to Table 1, the TPH concentrations were below the NMOCD guidelines in all samples collected and submitted for analysis. The chloride concentrations showed a marked decrease with depth in each of the five soil borings.

2.0 COLLECTED REGIONAL HYDROGEOLOGIC DATA

Since groundwater was not encountered during drilling of the site, it was not deemed necessary to perform a water well inventory within a ½ mile radius of the site.

3.0 EVALUATION

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

4.0 PROPOSED REMEDY

Groundwater is 70' bgs and the chlorides and TPH decrease with depth and do not extend beyond 35' bgs. As such, ROC proposes removing the current overburden and placing a clay liner at approximately 4 feet below ground surface. The clay liner will have dimensions of approximately 38 feet by 37 feet. See Figure 4 for proposed clay liner dimensions. Upon completion of the clay liner, the site will be backfilled with clean soils and reseeded with native vegetation. The excavated soils will be transported offsite for proper disposal.

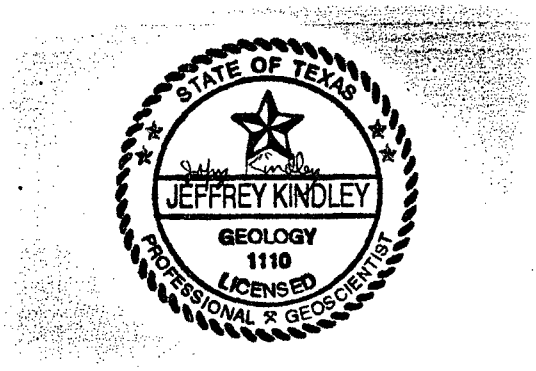
If you require any additional information or have any questions or comments, please call.

Highlander Environmental Corp.

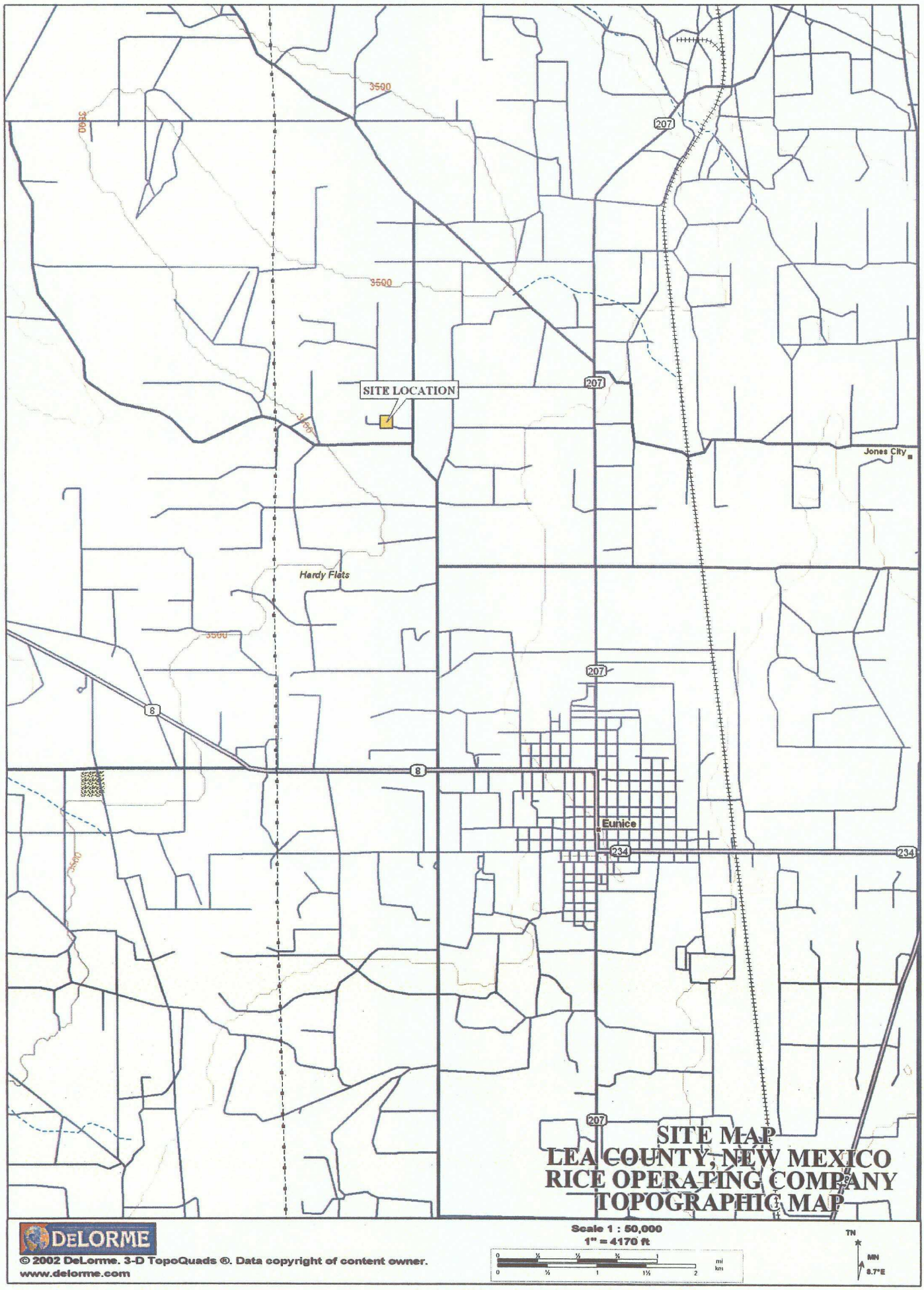
Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc: ROC
Edward Hansen-NMOCD

enclosures: site maps, data tables, lab results, figures, photos



Figures



SITE MAP
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

DeLORME

Scale 1 : 50,000
1" = 4170 ft

TN
MN
8.7°E

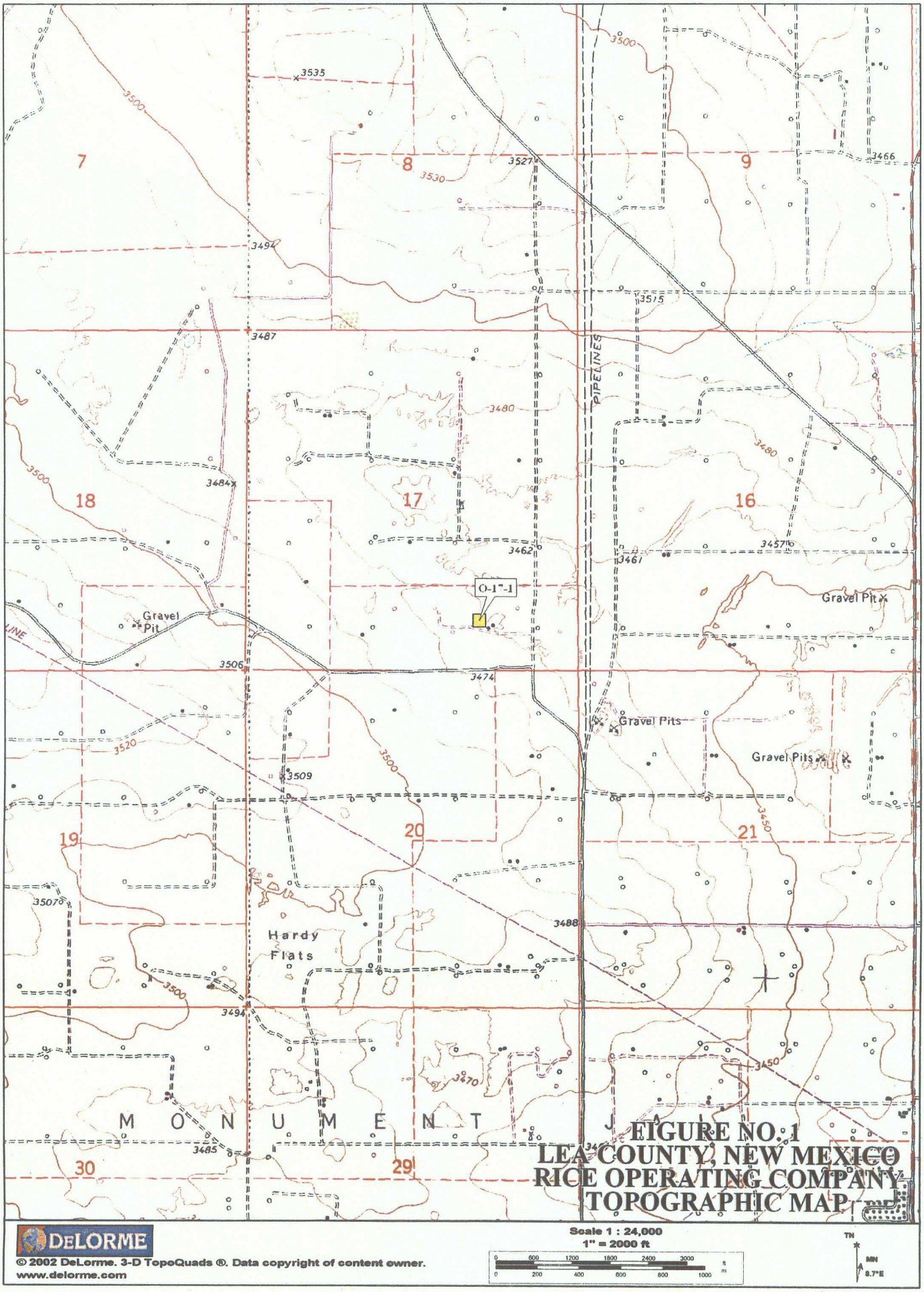


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP

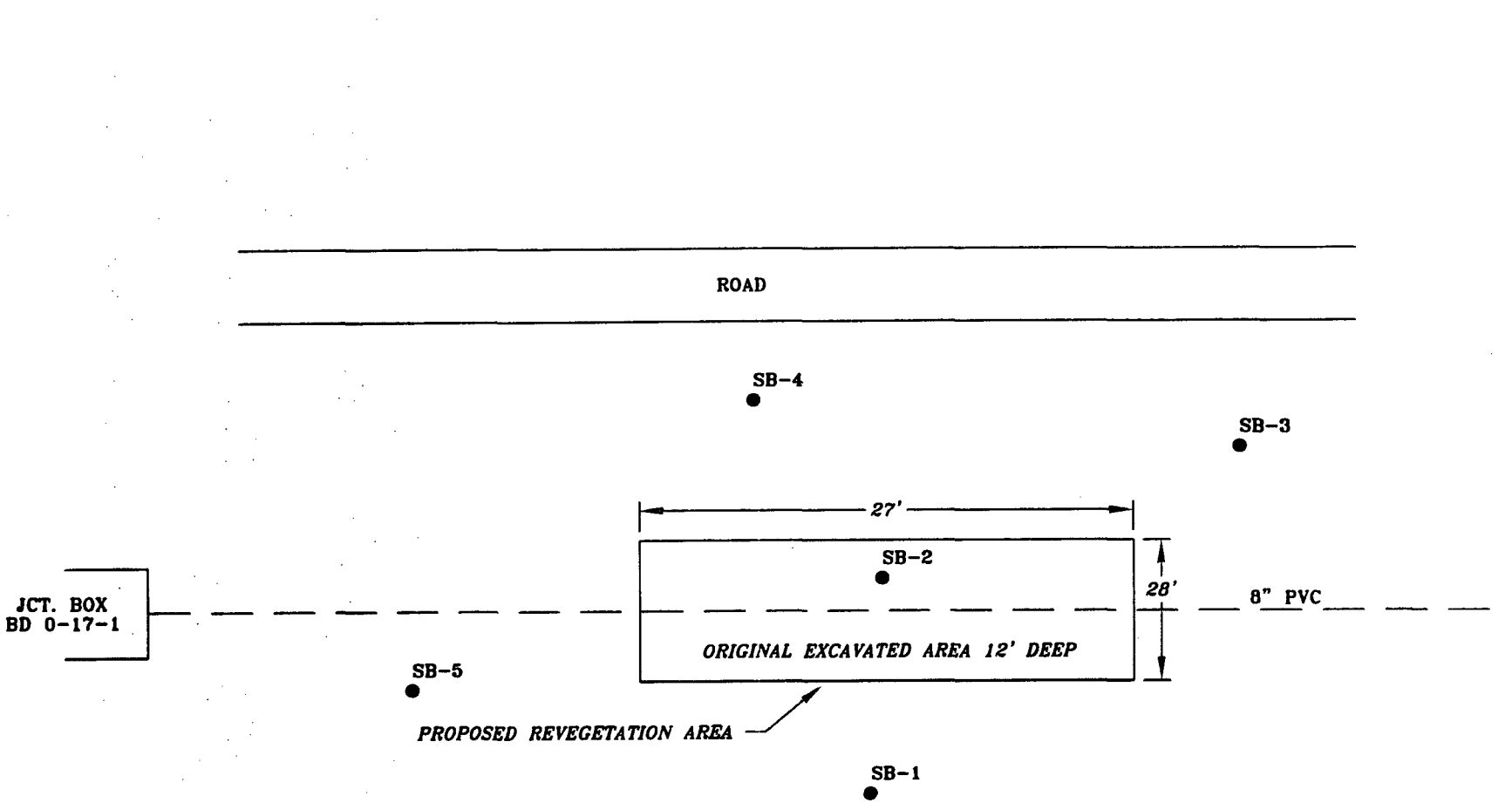
DeLORME

www.delorme.com

Scale 1 : 24,000
1" = 2000 ft

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

TN
MN
8.7°E



● SOIL BORING LOCATIONS

NOT TO SCALE

FIGURE NO. 2

LEA COUNTY, NEW MEXICO

RICE OPERATING COMPANY
BD 0-17-1
SOIL BORING LOCATIONS

DATE: 8/14/06
DWN. BY: JJ
FILE: C:\RICE\2644 SITE MAP

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

Tables

Table 1

Rice Operating

BD O-17-1

Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Chlorides Field (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg)			
					C6-C12	C12-C28	C28-C35	Total
SB-1	10/09/06	13-15'	895	**978**	<10.0	314	56.7	371
SB-1	10/09/06	18-20'	571	213	NA	NA	NA	NA
SB-1	10/09/06	23-25'	212	**255**	NA	NA	NA	NA
SB-1	10/09/06	28-30'	169	NA	NA	NA	NA	NA
SB-1	10/09/06	33-35'	226	**298**	NA	NA	NA	NA
SB-2	10/09/06	13-15'	1,293	**638**	30.4	553	94.4	678
SB-2	10/09/06	18-20'	995	**1,360**	<10.0	80	<10.0	80
SB-2	10/09/06	23-25'	210	**681**	NA	NA	NA	NA
SB-2	10/09/06	28-30'	930	**638**	NA	NA	NA	NA
SB-2	10/09/06	33-35'	411	**362**	NA	NA	NA	NA
SB-2	10/09/06	38-40'	621	181	NA	NA	NA	NA
SB-2	10/09/06	43-45'	374	128	NA	NA	NA	NA
SB-2	10/09/06	48-50'	270	95.7	NA	NA	NA	NA
SB-2	10/09/06	53-55'	266	21.3	NA	NA	NA	NA
SB-2	10/09/06	58-60'	239	31.9	NA	NA	NA	NA
SB-3	10/09/06	3-5'	274	106	<10.0	13.2	<10.0	13.2
SB-3	10/09/06	8-10'	470	**425**	NA	NA	NA	NA
SB-3	10/09/06	13-15'	615	**596**	NA	NA	NA	NA
SB-3	10/09/06	18-20'	488	**638**	NA	NA	NA	NA
SB-3	10/09/06	23-25'	682	**596**	NA	NA	NA	NA
SB-3	10/09/06	28-30'	441	**383**	NA	NA	NA	NA
SB-3	10/09/06	33-35'	276	53.2	NA	NA	NA	NA
SB-3	10/09/06	38-40'	234	42.5	NA	NA	NA	NA
SB-4	10/09/06	3-5'	348	128	<10.0	<10.0	<10.0	<10.0
SB-4	10/09/06	8-10'	556	**596**	NA	NA	NA	NA
SB-4	10/09/06	13-15'	255	213	NA	NA	NA	NA
SB-4	10/09/06	18-20'	235	42.5	NA	NA	NA	NA
SB-4	10/09/06	23-25'	149	63.8	NA	NA	NA	NA
SB-5	10/09/06	13-15'	834	**1,110**	<10.0	<10.0	<10.0	<10.0
SB-5	10/09/06	18-20'	406	**468**	NA	NA	NA	NA
SB-5	10/09/06	23-25'	300	234	NA	NA	NA	NA
SB-5	10/09/06	28-30'	236	128	NA	NA	NA	NA
SB-5	10/09/06	33-35'	160	31.9	NA	NA	NA	NA

Appendix A

RICE OPERATING COMPANY
JUNCTION BOX DISCLOSURE* REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
Blinebry-Drinkard	O-17-1 vent	O	17	21S	37E	Lea	No Box		

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

Depth to Groundwater 70 feet NMOCD SITE ASSESSMENT RANKING SCORE: 10

Date Started 3/7/2003 Date Completed 8/29/2003 OCD Witness No

Soil Excavated 240 cubic yards Excavation Length 30 Width 18 Depth 12 feet

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

FINAL ANALYTICAL RESULTS: **Sample Date** 3/17/2003 **Sample Depth** 12 ft bgs

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

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chloride mg/kg
SIDEWALLS	<0.025	<0.025	0.051	0.281	126	1290	1810
BOTTOM	<0.100	0.972	4.44	19.42	1420	5280	1740

General Description of Remedial Action: This junction box once contained a vent but the junction has been eliminated and the site re-plumbed straight through with new poly pipeline. The 30 x 18 x 12 ft deep excavation yielded TPH impact to at least 12 ft deep. Vertically, the 8 ft and 12 ft samples were field-tested for chlorides, yielding 1000 and 400 ppm respectively. However, there was not a lateral decline in chloride concentrations on the excavation walls. The color change in the titration of the chloride test was difficult to detect due to the TPH concentration and the color of the soil sample, which may account for the discrepancy with the lab results. The excavation has been backfilled and the location identified for further consideration at a later date.

ADDITIONAL EVALUATION IS *HIGH* PRIORITY.

cc: lab results, photos

LOCATION	DEPTH (ft)	ppm

CHLORIDE FIELD TESTS

Vertical	8	1000
Vertical	12	400

TPH FIELD TESTS

Vertical	4	28220
Vertical	8	49220
Vertical	12	35070

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

DATE 9/16/2003 PRINTED NAME Kristin Farris

SIGNATURE Kristin Farris TITLE Project Scientist

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

Appendix B

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Tim Reed

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Rice/ 0-17-1

Project Number: 2644

Location: None Given

Lab Order Number: 6J13017

Report Date: 10/23/06

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1 13-15'	6J13017-01	Soil	10/09/06 00:00	10-13-2006 16:20
SB-1 18-20'	6J13017-02	Soil	10/09/06 00:00	10-13-2006 16:20
SB-1 23-25'	6J13017-03	Soil	10/09/06 00:00	10-13-2006 16:20
SB-1 33-35'	6J13017-04	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 13-15'	6J13017-05	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 18-20'	6J13017-06	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 23-25'	6J13017-07	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 28-30'	6J13017-08	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 33-35'	6J13017-09	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 38-40'	6J13017-10	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 43-45'	6J13017-11	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 48-50'	6J13017-12	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 53-55'	6J13017-13	Soil	10/09/06 00:00	10-13-2006 16:20
SB-2 58-60'	6J13017-14	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 3-5'	6J13017-15	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 8-10'	6J13017-16	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 13-15'	6J13017-17	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 18-20'	6J13017-18	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 23-25'	6J13017-19	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 28-30'	6J13017-20	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 33-35'	6J13017-21	Soil	10/09/06 00:00	10-13-2006 16:20
SB-3 38-40'	6J13017-22	Soil	10/09/06 00:00	10-13-2006 16:20
SB-4 3-5'	6J13017-23	Soil	10/09/06 00:00	10-13-2006 16:20
SB-4 8-10'	6J13017-24	Soil	10/09/06 00:00	10-13-2006 16:20
SB-4 13-15'	6J13017-25	Soil	10/09/06 00:00	10-13-2006 16:20
SB-4 18-20'	6J13017-26	Soil	10/09/06 00:00	10-13-2006 16:20
SB-4 23-25'	6J13017-27	Soil	10/09/06 00:00	10-13-2006 16:20
SB-5 13-15'	6J13017-28	Soil	10/09/06 00:00	10-13-2006 16:20
SB-5 18-20'	6J13017-29	Soil	10/09/06 00:00	10-13-2006 16:20
SB-5 23-25'	6J13017-30	Soil	10/09/06 00:00	10-13-2006 16:20
SB-5 28-30'	6J13017-31	Soil	10/09/06 00:00	10-13-2006 16:20
SB-5 32-35'	6J13017-32	Soil	10/09/06 00:00	10-13-2006 16:20

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-1 13-15' (6J13017-01) Soil									
Carbon Ranges C6-C12	**J [7.69]**	10.0	mg/kg dry	1	EJ61502	10/15/06	10/15/06	EPA 8015M	J
Carbon Ranges C12-C28	**314**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**56.7**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**371**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*89.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*79.4 %*	*70-130*		"	"	"	"	
SB-2 13-15' (6J13017-05) Soil									
Carbon Ranges C6-C12	**30.4**	10.0	mg/kg dry	1	EJ61502	10/15/06	10/15/06	EPA 8015M	
Carbon Ranges C12-C28	**553**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**94.4**	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**678**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*90.8 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*80.2 %*	*70-130*		"	"	"	"	
SB-2 18-20' (6J13017-06) Soil									
Carbon Ranges C6-C12	**J [9.93]**	10.0	mg/kg dry	1	EJ61502	10/15/06	10/16/06	EPA 8015M	J
Carbon Ranges C12-C28	**80.0**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	**J [9.44]**	10.0	"	"	"	"	"	"	J
Total Hydrocarbons	**80.0**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*91.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*80.2 %*	*70-130*		"	"	"	"	
SB-3 3-5' (6J13017-15) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EJ61502	10/15/06	10/16/06	EPA 8015M	
Carbon Ranges C12-C28	**13.2**	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbons	**13.2**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*87.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*80.6 %*	*70-130*		"	"	"	"	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-4 3-5' (6J13017-23) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EJ61609	10/16/06	10/17/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*87.8 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*79.8 %*	*70-130*		"	"	"	"	
SB-5 13-15' (6J13017-28) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EJ61502	10/15/06	10/16/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*89.4 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*78.8 %*	*70-130*		"	"	"	"	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-1 13-15' (6J13017-01) Soil									
Chloride	978	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
% Moisture	7.2	0.1	%	1	EJ61601	10/13/06	10/16/06	% calculation	
SB-1 18-20' (6J13017-02) Soil									
Chloride	213	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-1 23-25' (6J13017-03) Soil									
Chloride	255	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-1 33-35' (6J13017-04) Soil									
Chloride	298	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-2 13-15' (6J13017-05) Soil									
Chloride	638	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
% Moisture	10.9	0.1	%	1	EJ61601	10/13/06	10/16/06	% calculation	
SB-2 18-20' (6J13017-06) Soil									
Chloride	1360	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
% Moisture	10.1	0.1	%	1	EJ61601	10/13/06	10/16/06	% calculation	
SB-2 23-25' (6J13017-07) Soil									
Chloride	681	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-2 28-30' (6J13017-08) Soil									
Chloride	638	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-2 33-35' (6J13017-09) Soil									
Chloride	362	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-2 38-40' (6J13017-10) Soil									
Chloride	181	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-2 43-45' (6J13017-11) Soil									
Chloride	**128**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-2 48-50' (6J13017-12) Soil									
Chloride	**95.7**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-2 53-55' (6J13017-13) Soil									
Chloride	**21.3**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-2 58-60' (6J13017-14) Soil									
Chloride	**31.9**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-3 3-5' (6J13017-15) Soil									
Chloride	**106**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
% Moisture	**3.8**	0.1	%	1	EJ61601	10/13/06	10/16/06	% calculation	
SB-3 8-10' (6J13017-16) Soil									
Chloride	**425**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-3 13-15' (6J13017-17) Soil									
Chloride	**596**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-3 18-20' (6J13017-18) Soil									
Chloride	**638**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-3 23-25' (6J13017-19) Soil									
Chloride	**596**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	
SB-3 28-30' (6J13017-20) Soil									
Chloride	**383**	20.0	mg/kg Wet	2	EJ62014	10/20/06	10/22/06	SW 846 9253	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-3 33-35' (6J13017-21) Soil									
Chloride	**53.2**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-3 38-40' (6J13017-22) Soil									
Chloride	**42.5**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-4 3-5' (6J13017-23) Soil									
Chloride	**128**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
% Moisture	**12.0**	0.1	%	1	EJ61601	10/13/06	10/16/06	% calculation	
SB-4 8-10' (6J13017-24) Soil									
Chloride	**596**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-4 13-15' (6J13017-25) Soil									
Chloride	**213**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-4 18-20' (6J13017-26) Soil									
Chloride	**42.5**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-4 23-25' (6J13017-27) Soil									
Chloride	**63.8**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-5 13-15' (6J13017-28) Soil									
Chloride	**1110**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
% Moisture	**12.1**	0.1	%	1	EJ61601	10/13/06	10/16/06	% calculation	
SB-5 18-20' (6J13017-29) Soil									
Chloride	**468**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-5 23-25' (6J13017-30) Soil									
Chloride	**234**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-5 28-30' (6J13017-31) Soil									
Chloride	**128**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	
SB-5 32-35' (6J13017-32) Soil									
Chloride	**31.9**	20.0	mg/kg Wet	2	EJ62015	10/20/06	10/22/06	SW 846 9253	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.
1910 N. Big Spring St.
Midland TX, 79705

Project: Rice/ 0-17-1
Project Number: 2644
Project Manager: Tim Reed

Fax: (432) 682-3946

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 EJ61502 - Solvent Extraction (GC)										
Blank (EJ61502-BLK1)				Prepared & Analyzed: 10/15/06						
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	"							
Carbon Ranges C28-C35	ND	10.0	"							
Total Hydrocarbons	ND	10.0	"							
Surrogate: 1-Chlorooctane	*45.3*		*mg/kg*	*50.0*		*90.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*41.1*		*"*	*50.0*		*82.2*	*70-130*			
LCS (EJ61502-BS1)				Prepared & Analyzed: 10/15/06						
Carbon Ranges C6-C12	486	10.0	mg/kg wet	500		97.2	75-125			
Carbon Ranges C12-C28	474	10.0	"	500		94.8	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125			
Total Hydrocarbons	960	10.0	"	1000		96.0	75-125			
Surrogate: 1-Chlorooctane	*58.0*		*mg/kg*	*50.0*		*116*	*70-130*			
Surrogate: 1-Chlorooctadecane	*43.7*		*"*	*50.0*		*87.4*	*70-130*			
Calibration Check (EJ61502-CCV1)				Prepared: 10/15/06 Analyzed: 10/16/06						
Carbon Ranges C6-C12	203		mg/kg	250		81.2	80-120			
Carbon Ranges C12-C28	237		"	250		94.8	80-120			
Total Hydrocarbons	440		"	500		88.0	80-120			
Surrogate: 1-Chlorooctane	*47.8*		*"*	*50.0*		*95.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*38.4*		*"*	*50.0*		*76.8*	*70-130*			
Matrix Spike (EJ61502-MS1)	**Source: 6J13015-01**			Prepared: 10/15/06 Analyzed: 10/16/06						
Carbon Ranges C6-C12	527	10.0	mg/kg dry	567	ND	92.9	75-125			
Carbon Ranges C12-C28	507	10.0	"	567	ND	89.4	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125			
Total Hydrocarbons	1030	10.0	"	1130	ND	91.2	75-125			
Surrogate: 1-Chlorooctane	*56.9*		*mg/kg*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*43.3*		*"*	*50.0*		*86.6*	*70-130*			

Highlander Environmental Corp.
1910 N. Big Spring St.
Midland TX, 79705

Project: Rice/ 0-17-1
Project Number: 2644
Project Manager: Tim Reed

Fax: (432) 682-3946

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 EJ61502 - Solvent Extraction (GC)										
Matrix Spike Dup (EJ61502-MSD1)	**Source: 6J13015-01**			Prepared: 10/15/06 Analyzed: 10/16/06						
Carbon Ranges C6-C12	525	10.0	mg/kg dry	567	ND	92.6	75-125	0.380	20	
Carbon Ranges C12-C28	513	10.0	"	567	ND	90.5	75-125	1.18	20	
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125		20	
Total Hydrocarbons	1040	10.0	"	1130	ND	92.0	75-125	0.966	20	
Surrogate: 1-Chlorooctane	*57.1*		*mg/kg*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*42.8*		*"*	*50.0*		*85.6*	*70-130*			
Batch EJ61609 - Solvent Extraction (GC)										
Blank (EJ61609-BLK1)				Prepared: 10/16/06 Analyzed: 10/17/06						
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	"							
Carbon Ranges C28-C35	ND	10.0	"							
Total Hydrocarbons	ND	10.0	"							
Surrogate: 1-Chlorooctane	*48.3*		*mg/kg*	*50.0*		*96.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*45.0*		*"*	*50.0*		*90.0*	*70-130*			
LCS (EJ61609-BS1)				Prepared: 10/16/06 Analyzed: 10/17/06						
Carbon Ranges C6-C12	469	10.0	mg/kg wet	500		93.8	75-125			
Carbon Ranges C12-C28	452	10.0	"	500		90.4	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125			
Total Hydrocarbons	921	10.0	"	1000		92.1	75-125			
Surrogate: 1-Chlorooctane	*60.5*		*mg/kg*	*50.0*		*121*	*70-130*			
Surrogate: 1-Chlorooctadecane	*46.4*		*"*	*50.0*		*92.8*	*70-130*			
Calibration Check (EJ61609-CCV1)				Prepared: 10/16/06 Analyzed: 10/18/06						
Carbon Ranges C6-C12	216		mg/kg	250		86.4	80-120			
Carbon Ranges C12-C28	248		"	250		99.2	80-120			
Total Hydrocarbons	464		"	500		92.8	80-120			
Surrogate: 1-Chlorooctane	*64.5*		*"*	*50.0*		*129*	*70-130*			
Surrogate: 1-Chlorooctadecane	*62.7*		*"*	*50.0*		*125*	*70-130*			

Highlander Environmental Corp.
1910 N. Big Spring St.
Midland TX, 79705

Project: Rice/ 0-17-1
Project Number: 2644
Project Manager: Tim Reed

Fax: (432) 682-3946

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 EJ61609 - Solvent Extraction (GC)										
Matrix Spike (EJ61609-MS1)	**Source: 6J16003-03**			Prepared: 10/16/06 Analyzed: 10/17/06						
Carbon Ranges C6-C12	511	10.0	mg/kg dry	572	ND	89.3	75-125			
Carbon Ranges C12-C28	504	10.0	"	572	ND	88.1	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125			
Total Hydrocarbons	1020	10.0	"	1140	ND	89.5	75-125			
Surrogate: 1-Chlorooctane	*56.5*		*mg/kg*	*50.0*		*113*	*70-130*			
Surrogate: 1-Chlorooctadecane	*43.8*		"	*50.0*		*87.6*	*70-130*			
Matrix Spike Dup (EJ61609-MSD1)	**Source: 6J16003-03**			Prepared: 10/16/06 Analyzed: 10/17/06						
Carbon Ranges C6-C12	511	10.0	mg/kg dry	572	ND	89.3	75-125	0.00	20	
Carbon Ranges C12-C28	500	10.0	"	572	ND	87.4	75-125	0.797	20	
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125		20	
Total Hydrocarbons	1010	10.0	"	1140	ND	88.6	75-125	0.985	20	
Surrogate: 1-Chlorooctane	*55.2*		*mg/kg*	*50.0*		*110*	*70-130*			
Surrogate: 1-Chlorooctadecane	*41.0*		"	*50.0*		*82.0*	*70-130*			

Highlander Environmental Corp.
1910 N. Big Spring St.
Midland TX, 79705

Project: Rice/ 0-17-1
Project Number: 2644
Project Manager: Tim Reed

Fax: (432) 682-3946

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
Batch EJ61601 - General Preparation (Prep)										
Blank (EJ61601-BLK1)				Prepared: 10/13/06 Analyzed: 10/16/06						
% Solids	100		%							
Duplicate (EJ61601-DUP1)	Source: 6J13004-01			Prepared: 10/13/06 Analyzed: 10/16/06						
% Solids	74.4		%		74.5			0.134	20	
Duplicate (EJ61601-DUP2)	Source: 6J13017-06			Prepared: 10/13/06 Analyzed: 10/16/06						
% Solids	90.4		%		89.9			0.555	20	
Duplicate (EJ61601-DUP3)	Source: 6J13021-05			Prepared: 10/13/06 Analyzed: 10/16/06						
% Solids	89.8		%		90.8			1.11	20	
Duplicate (EJ61601-DUP4)	Source: 6J14001-02			Prepared: 10/13/06 Analyzed: 10/16/06						
% Solids	85.1		%		85.1			0.00	20	
Batch EJ62014 - Water Extraction										
Blank (EJ62014-BLK1)				Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	ND	20.0	mg/kg Wet							
LCS (EJ62014-BS1)				Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	92.5	5.00	mg/kg Wet	100		92.5	80-120			
Matrix Spike (EJ62014-MS1)	Source: 6J13017-13			Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	521	20.0	mg/kg Wet	500	21.3	99.9	80-120			
Matrix Spike Dup (EJ62014-MSD1)	Source: 6J13017-13			Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	532	20.0	mg/kg Wet	500	21.3	102	80-120	2.09	20	

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

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
Batch EJ62014 - Water Extraction										
Reference (EJ62014-SRM1)				Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	51.0		mg/kg	50.0		102	80-120			
Batch EJ62015 - Water Extraction										
Blank (EJ62015-BLK1)				Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	ND	20.0	mg/kg Wet							
LCS (EJ62015-BS1)				Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	91.5	5.00	mg/kg Wet	100		91.5	80-120			
Matrix Spike (EJ62015-MS1)		**Source: 6J13017-23**		Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	638	20.0	mg/kg Wet	500	128	102	80-120			
Matrix Spike Dup (EJ62015-MSD1)		**Source: 6J13017-23**		Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	649	20.0	mg/kg Wet	500	128	104	80-120	1.71	20	
Reference (EJ62015-SRM1)				Prepared: 10/20/06 Analyzed: 10/22/06						
Chloride	52.1		mg/kg	50.0		104	80-120			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Highlander Environmental Corp.	Project: Rice/ 0-17-1	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2644	
Midland TX, 79705	Project Manager: Tim Reed	

Notes and Definitions

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: 10/23/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

32 total

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 Fax (432) 682-3946

CLIENT NAME: Rio Engineering
SITE MANAGER: Tim Reed
PROJECT NO.: 2644
PROJECT NAME: O-17-1

ANALYSIS REQUEST (Circle or Specify Method No.)

PRESERVATIVE METHOD: HCL, HNO3, ICE, NONE

LAB I.D. NUMBER 13011	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 (8015 MOD.) TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, (Chloride)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
01	10/09/06		S			SB-1 (13-15')	1				✓	✓			✓											✓			
02	10/09/06		S			SB-1 (18-20')	1				✓	✓														✓			
03	10/09/06		S			SB-1 (23-25)	1				✓	✓														✓			
~~—~~	~~10/09/06~~		~~S~~			~~SB-1 (28-30')~~ No sample	~~1~~				~~✓~~	~~✓~~														~~✓~~			
04	10/09/06		S			SB-1 (33-35')	1				✓	✓														✓			
05	10/09/06		S			SB-2 (13-15)	1				✓	✓			✓											✓			
06	10/09/06		S			SB-2 (18-20')	1				✓	✓			✓											✓			
07	10/09/06		S			SB-2 (23-25)	1				✓	✓														✓			
08	10/09/06		S			SB-2 (28-30)	1				✓	✓														✓			
09	10/09/06		S			SB-2 (33-35)	1				✓	✓														✓			

RELINQUISHED BY: (Signature) [signature] Date: 10/13/06 Time: 4:20
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Environmental Labs of TX
ADDRESS:
CITY: Odessa STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) [signature]
DATE: 10/13/06 TIME: 4:20

SAMPLE CONDITION WHEN RECEIVED: Ice glass 3.0 w/ label

MATRIX: W-Water A-Air SD-Solid (S-Soil) SL-Sludge O-Other

REMARKS:

SAMPLED BY: (Print & Sign) J. Kindle [signature] Date: 10/09/06 Time: 1800

SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL #: (HAND DELIVERED) UPS OTHER:

HIGHLANDER CONTACT PERSON: Tim Reed

Results by:

RUSH Charges Authorized: Yes No

Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Enviromental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(432) 682-4559 Fax (432) 682-3946

CLIENT NAME: Rice Engineering

SITE MANAGER: Tim Read

PROJECT NO.: 2644

PROJECT NAME: D-17-1

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 / 8015 MOD. / TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
0513019																													
-10	10/04/06		S			SB-2 (38-50)	1				✓	✓														✓			
-11	10/04/06		S			SB-2 (43-45)	1				✓	✓														✓			
-12	10/04/06		S			SB-2 (48-50)	1				✓	✓														✓			
-13	10/04/06		S			SB-2 (53-55)	1				✓	✓														✓			
-14	10/04/06		S			SB-2 (58-60)	1				✓	✓														✓			
-15	10/04/06		S			SB-3 (3-5)	1				✓	✓			✓											✓			
-16	10/04/06		S			SB-3 (8-10)	1				✓	✓														✓			
-17	10/04/06		S			SB-3 (13-15)	1				✓	✓														✓			
-18	10/04/06		S			SB-3 (18-20)	1				✓	✓														✓			
-19	10/04/06		S			SB-3 (23-25)	1				✓	✓														✓			

RELINQUISHED BY: (Signature) Date: 10/13/06 Time: 4:20

RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Environmental Lab of TX

ADDRESS:

CITY: Odessa STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature) Date: 10/13/06 Time: 4:20

SAMPLED BY: (Print & Sign) Jeffrey Kindle Date: 10/04/06 Time: 1900

SAMPLE SHIPPED BY: (circle)

FEDEX BUS AIRBILL #

HAND DELIVERED UPS OTHER:

HIGHLANDER CONTACT PERSON: Tim Read

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W–Water A–Air SD–Solid S–Soil SL–Sludge O–Other

REMARKS:

Please Fill out all copies – Laboratory retains yellow copy – Return original copy to Highlander Environmental Corp. – Project Manager retains pink copy – Accounting receives Gold copy.

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(432) 682-4559 Fax (432) 682-3946

PAGE: 3 OF: 4

CLIENT NAME: Rice Engineering
SITE MANAGER: Tim Reed
PROJECT NO.: 2644
PROJECT NAME: O-17-1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	ANALYSIS REQUEST (Circle or Specify Method No.): BTEX 8020/602	MTBE 8020/602	TPH 418.1 / 8015 MOD / TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
(-10) 17019																													
-10	10/9/06		S			SB-3 (28-30)	1				✓	✓															✓			
-11	10/10/06		S			SB-3 (33-35)	1				✓	✓															✓			
-12	10/10/06		S			SB-3 (38-40)	1				✓	✓															✓			
-13	10/9/06		S			SB-4 (3-5)	1				✓	✓			✓												✓			
-14	10/10/06		S			SB-4 (8-10)	1				✓	✓															✓			
-15	10/10/06		S			SB-4 (13-15)	1				✓	✓															✓			
-16	10/10/06		S			SB-4 (18-20)	1				✓	✓															✓			
-17	10/10/06		S			SB-4 (23-25)	1				✓	✓															✓			
-18	10/10/06		S			SB-5 (13-15)	1				✓	✓			✓												✓			
-19	10/10/06		S			SB-5 (18-20)	1				✓	✓															✓			

RELINQUISHED BY: (Signature) Date: 10/13/06 Time: 4:20
RECEIVED BY: (Signature) Date: Time:
SAMPLED BY: (Print & Sign) Jeffrey Kindley Date: 10/10/06 Time: 1800

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL #
HAND DELIVERED UPS OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Environmental Lab of Tx
ADDRESS:
CITY: Odessa STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) Cerie Kolb
DATE: 10/13/06 TIME: 4:20

HIGHLANDER CONTACT PERSON: Tim Reed
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W-Water A-Air SD-Solid S-Soil SL-Sludge O-Other

REMARKS:

Please Fill out all copies – Laboratory retains yellow copy – Return original copy to Highlander Environmental Corp. – Project Manager retains pink copy – Accounting receives Gold copy.

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(432) 682-4559 Fax (432) 682-3946

CLIENT NAME: Rice Engineering

SITE MANAGER: Tim Reed

PROJECT NO.: 2644

PROJECT NAME: O-17-1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 8015 MOD. TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	PCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
130	10/10/06		S			SB-5 (23-25)	1				✓	✓														✓			
31	10/10/06		S			SB-5 (28-30)	1				✓	✓														✓			
32	10/10/06		S			SB-5 (33-35)	1				✓	✓														✓			

RELINQUISHED BY: (Signature) Date: 10/13/06 Time: 4:20

RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Environmental Lab of TX

ADDRESS:

CITY: Odessa STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: 10/13/06 TIME: 4:20

SAMPLED BY: (Print & Sign) Jeffrey Kindle Jeffrey Kindle Date: 10/10/06 Time: 1200

SAMPLE SHIPPED BY: (Circle)

FEDEX BUS AIRBILL #

HAND DELIVERED UPS OTHER:

HIGHLANDER CONTACT PERSON: Tim Reed

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W—Water A—Air SD—Solid (S—Soil) SL—Sludge O—Other

REMARKS:

Please Fill out all copies – Laboratory retains yellow copy – Return original copy to Highlander Environmental Corp. – Project Manager retains pink copy – Accounting receives Gold copy.

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Highlander

Date/ Time: 10/3/08 4:20

Lab ID # : 105130

Initials: CK

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	3.0 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Appendix C

SAMPLE LOG

Boring/Well: SB-1
Project Number: 2644
Client: Rice Engineering
Site Location: BD 0-17-1
Location: Lea County, New Mexico
Total Depth 35
Date Installed: 10/09/06

DEPTH (in feet)	OVM	CHLORIDES (in mg/Kg)	SAMPLE DESCRIPTION
13-15	25	895	Tan calcareous sand with slight hydrocarbon odor
18-20	0	571	Tan calcareous fine grain sand
23-25	0	212	Tan calcareous fine grain sand
28-30	0	169	Tan calcareous fine grain sand
33-35	0	226	Tan calcareous fine grain sand

Boring completed at 35 feet bgs

SAMPLE LOG

Boring/Well: SB-2
Project Number: 2644
Client: Rice Engineering
Site Location: BD 0-17-1
Location: Lea County, New Mexico
Total Depth 60
Date Installed: 10/09/06

DEPTH (in feet)	OVM	CHLORIDES (in mg/Kg)	SAMPLE DESCRIPTION
13-15	28	1293	Tan calcareous sand with slight hydrocarbon odor
18-20	25	995	Tan calcareous fine grain sand
23-25	10	210	Tan calcareous fine grain sand
28-30	2	930	Tan calcareous fine grain sand
33-35	0	411	Tan calcareous fine grain sand
38-40	0	621	Tan calcareous fine grain sand
43-45	0	374	Tan calcareous fine grain sand
48-50	0	270	Tan calcareous fine grain sand
53-55	0	266	Tan calcareous fine grain sand
58-60	0	239	Tan calcareous fine grain sand

Boring completed at 60 feet bgs

SAMPLE LOG

Boring/Well: SB-3
Project Number: 2644
Client: Rice Engineering
Site Location: BD 0-17-1
Location: Lea County, New Mexico
Total Depth 40
Date Installed: 10/09/06

DEPTH (in feet)	OVM	CHLORIDES (in mg/Kg)	SAMPLE DESCRIPTION
3-5	2	274	Brown fine grain sand
8-10	0	470	Dark brown clayey sand
13-15	0	615	Dark brown clayey sand
18-20	0	488	Dark brown clayey sand
23-25	0	682	Tan calcareous fine grain sand
28-30	0	441	Tan calcareous fine grain sand
33-35	0	276	Tan calcareous fine grain sand
38-40	0	234	Tan calcareous fine grain sand

Boring completed at 40 feet bgs

SAMPLE LOG

Boring/Well: SB-4
Project Number: 2644
Client: Rice Engineering
Site Location: BD 0-17-1
Location: Lea County, New Mexico
Total Depth 25
Date Installed: 10/10/06

DEPTH (in feet)	OVM	CHLORIDES (in mg/Kg)	SAMPLE DESCRIPTION
3-5	2	348	Tan clayey fine grain sand with no odor or staining
8-10	2	556	Tan calcareous fine grain sand with no odor or staining
13-15	2	255	Tan calcareous fine grain sand with no odor or staining
18-20	2	235	Tan calcareous fine grain sand with no odor or staining
23-25	0	149	Tan calcareous fine grain sand with no odor or staining

Boring completed at 25 feet bgs

SAMPLE LOG

Boring/Well: SB-5
Project Number: 2644
Client: Rice Engineering
Site Location: BD 0-17-1
Location: Lea County, New Mexico
Total Depth 35
Date Installed: 10/10/06

DEPTH (in feet)	OVM	CHLORIDES (in mg/Kg)	SAMPLE DESCRIPTION
13-15	2	834	Tan/brown calcareous fine grain sand with no odor or staining
18-20	2	406	Tan calcareous fine grain sand with no odor or staining
23-25	0	300	Tan calcareous fine grain sand with no odor or staining
28-30	0	236	Tan calcareous fine grain sand with no odor or staining
33-35	0	149	Tan calcareous fine grain sand with no odor or staining

Boring completed at 35 feet bgs