



# Highlander Environmental Corp.

Midland, Texas

June 21, 2006

Mr. Larry Johnson  
Environmental Engineer Specialist  
Oil Conservation Division- District I  
1625 N. French Drive  
Hobbs, New Mexico 88240

RPT# 1000

**RE: Assessment and Closure Report for a Spill at the Pogo Producing Company, Cotton Draw Unit Tank Battery #2, Located in Unit Letter K, Section 15, Township 25 South, Range 32 East, Lea County, New Mexico.**

Dear Mr. Johnson:

Highlander Environmental Corp. (Highlander) was contacted by Pogo Producing Company (Pogo) to assess a spill on the Cotton Draw Unit Tank Battery #2, located in Unit Letter K, Section 15, Township 25 South, Range 32 East, Lea County, New Mexico (Site). The site coordinates are N 32° 07' 06.1", W 103° 41' 03.2". The State of New Mexico C-141 (Initial) is included in Appendix C. The Site is shown on Figure 1.

## Background

According to the State of New Mexico C-141 report, the spill occurred on February 18, 2006, when a valve plugged up and ran a tank over. The spill released 35 barrels of produced water and 5 barrels of oil, with 18 barrels of water and ½ barrel of oil recovered. The spill ran off the pad in two directions, north and west. The spill location is shown on Figure 2. The spill area to the north extended off the pad approximately 60' north and turned west for an additional 170'. The spill area to the west extended off the pad 65' and split into two spill areas approximately 185' long. The spill then joined back up for an additional 140' west and turned south for an additional 720' onto a pipeline right-of-way operated by Duke. Both the north and the west spills were approximately 2'-3' wide.

## Groundwater and Regulatory

Neither the New Mexico State Engineer Office's database nor USGS database show wells in Section 15, however, one well in Section 32 had reported a depth of 290' below ground surface. In the surrounding Townships and Ranges, most of the wells showed depths to groundwater greater than 200' below surface. The New Mexico State Engineer and USGS well reports are shown in Appendix B. A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a

risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

### **Assessment and Corrective Action**

On February 21, 2006, Highlander personnel inspected the facility. A total of fifteen (15) auger holes were installed in the spill areas to depths ranging from 1.5' to 5.5' below ground surface (bgs). The sample locations are shown on Figure 2. Twelve (12) auger holes (AH-1 through AH-11, and AH-15) were placed in the west spill area, and three (3) auger holes (AH-12 through AH-14) were placed in the north spill area. Additional confirmation and delineation samples for chlorides were taken on March 3 and March 9, 2006 with a hand auger at AH-4 and AH-5, and backhoe trenches at AH-1 (T-1) and AH-12 (T-2). Soil samples were collected for analysis of TPH by EPA method 8015 modified, BTEX by EPA method 8021B and chloride by EPA method 300.0. The laboratory report and chain of custody are included in Appendix B. The results of the sampling are shown in Table 1.

Referring to Table 1, there were no BTEX concentrations exceeding the RRAL. Soil samples from 0-1' did exceed the RRAL for TPH in AH-2, AH-4, AH-5, AH-6, AH-8, AH-9 and AH-15. The deepest hydrocarbon impact was in AH-2, AH-4, AH-5 and AH-15, however, TPH concentrations declined below the RRAL at 2.0' to 3.0' below surface in these areas. The remaining auger holes AH-6, AH-8 and AH-9 were defined at 1.0' below surface.

The chloride impact at the Site was vertically defined in all of the auger holes. The majority of the auger holes showed a shallow impact at a depth of 1.0 to 2.0' below surface, with the deepest chloride impact observed in AH-2, AH-12 and AH-15 ranging from 3.0' to 5.0'. Auger holes AH-5, AH-6, AH-8, AH-10, and AH-14 did not exhibit elevated chloride concentrations in the 0-1' samples.

From February 28 and March 6, 2006, Highlander supervised the excavation of the spill areas by hand or backhoe. All soils which exceeded the RRAL for TPH were excavated, with depths ranging from 1.5' to 3.0'. This excavation also removed a significant amount of the highest chloride impacted soils. The area of AH-2 was excavated to a depth of 3.0' below surface. The areas of AH-1, AH-12 and AH-13 were also excavated to a depth of 2.0' to 2.5' below surface to remove elevated chloride concentrations. The spill and excavated areas are shown on Figure 2. The excavated soils were transported to Sundance Services, Inc. for disposal.

### **Conclusions and Closure Request**

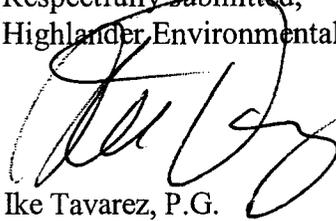
Chloride impact to subsurface soils was defined, and is limited to a depth of 5.0' or less below ground surface. All TPH impacted soils above the RRAL have been excavated and hauled to disposal. This excavation also removed a significant amount of the highest chloride impacted soils. A search of available groundwater in the vicinity of this site revealed depths to groundwater in excess of 200' below the surface. As such, the residual chloride impact does not appear to be an imminent threat to groundwater. Considering the limited areal extent and depth of impact, the depth to groundwater and the remediation performed at this facility, Pogo requests



closure of this site. The State of New Mexico Form C-141 (Final) is included in Appendix C.

If you require any additional information or have any questions or comments concerning the assessment report, please call at (432) 682-4559.

Respectfully submitted,  
Highlander Environmental Corp.



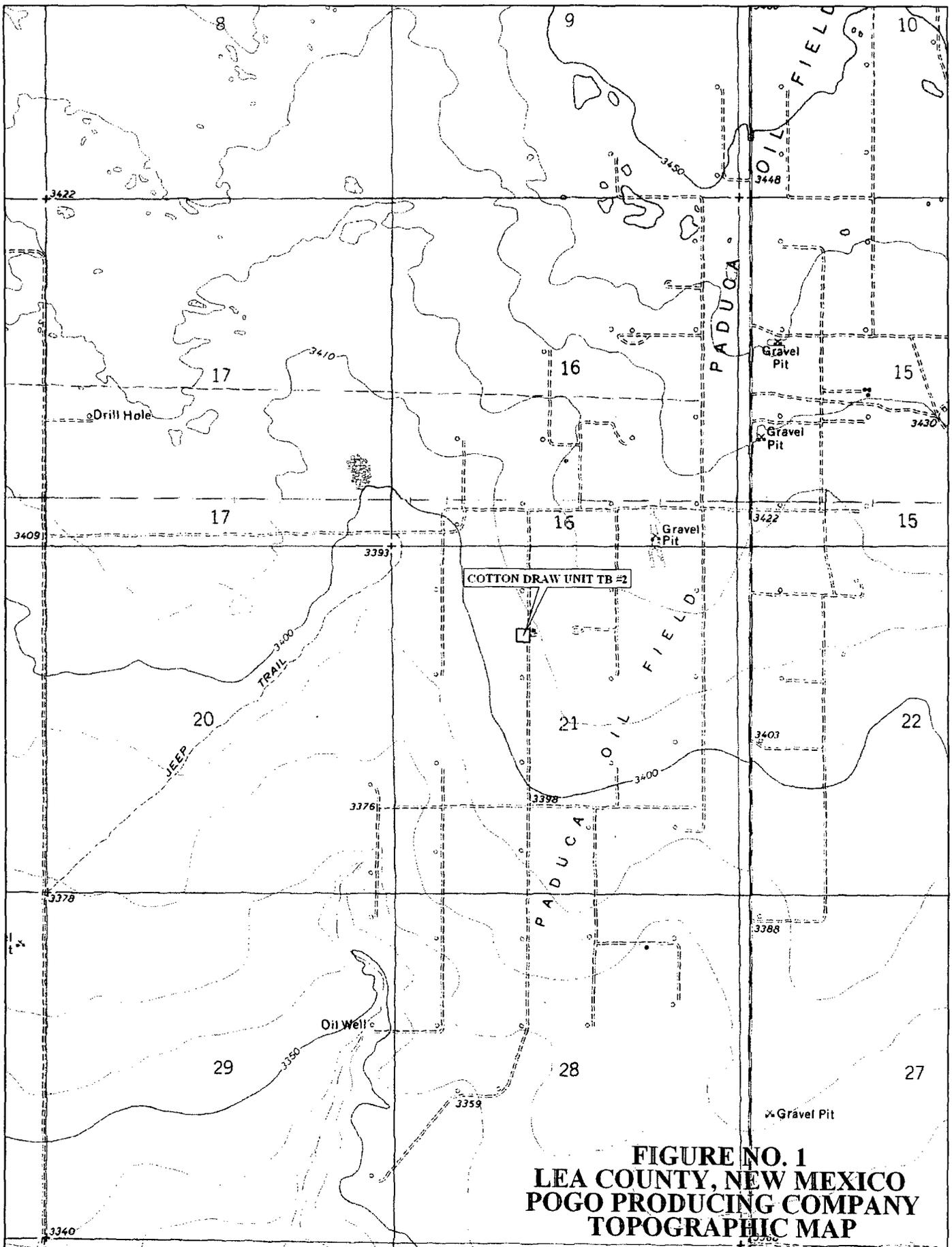
Ike Tavarez, P.G.  
Project Manager/Senior Geologist

cc: Don Riggs - Pogo  
Pat Ellis - Pogo





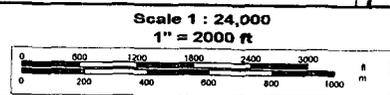


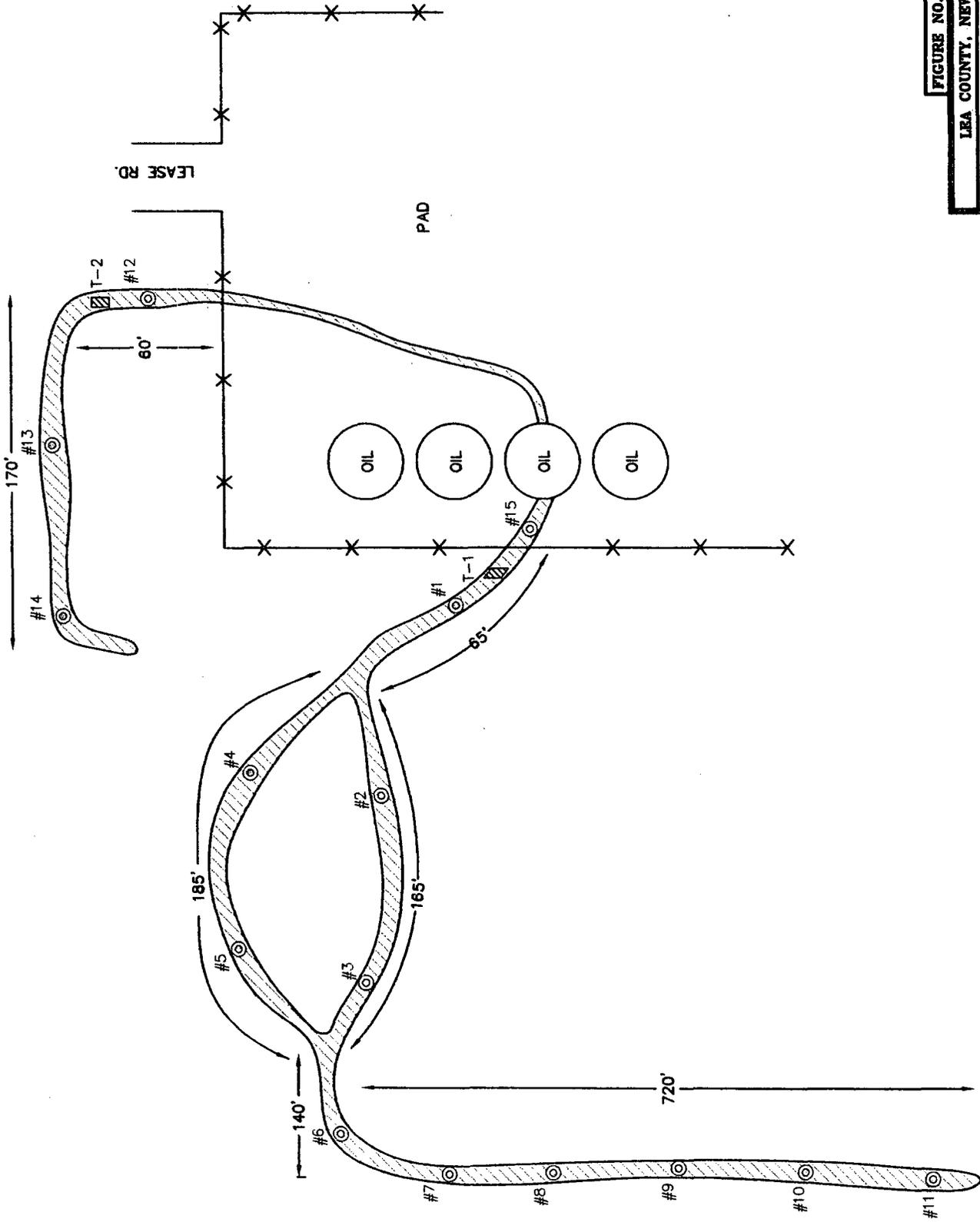


**FIGURE NO. 1  
LEA COUNTY, NEW MEXICO  
POGO PRODUCING COMPANY  
TOPOGRAPHIC MAP**



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**FIGURE NO. 2**

LEA COUNTY, NEW MEXICO

POGO PRODUCING COMPANY  
COTTON DRAW TB #2

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS

DATE:	6/2/06
DRAWN BY:	JJ
FILE:	C:\pogo\user\cotton draw

NOT TO SCALE

- TRENCHED LOCATIONS
- SPILL & EXCAVATED AREAS
- AUGER HOLE LOCATIONS

**APPENDIX A**

**Average Depth of Water Report**

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township: 25S Range: 32E Sections: [ ]

NAD27 X: [ ] Y: [ ] Zone: [ ] Search Radius: [ ]

County: [ ] Basin: [ ] Number: [ ] Suffix: [ ]

Owner Name: (First) [ ] (Last) [ ]  Non-Domestic  Domestic  
 All

AVERAGE DEPTH OF WATER REPORT 06/15/2006

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet)		
								Min	Max	Avg
L	25S	32E	32				1	290	290	290

Record Count: 1

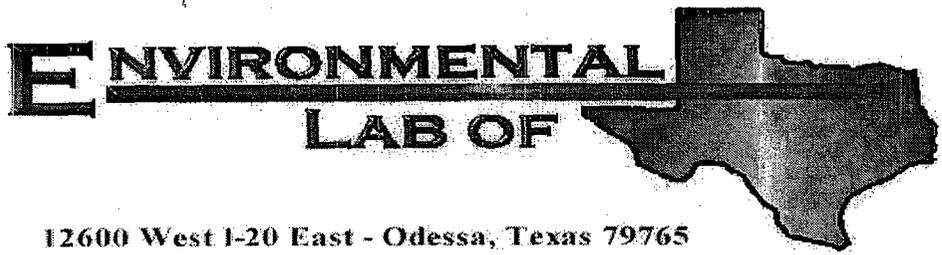
**APPENDIX B**

**Analytical Reports**



**Analytical Report**

**3/7/2006**



12600 West I-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:**

Ike Tavarez

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ Cotton Draw TB #2

Project Number: 2589

Location: Lea County, NM

Lab Order Number: 6B23027

Report Date: 03/07/06

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/07/06 13:24

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-1 0.-1.0'	6B23027-01	Soil	02/21/06 00:00	02/23/06 15:40
AH-1 1.0-1.5'	6B23027-02	Soil	02/21/06 00:00	02/23/06 15:40
AH-2 0-1.0'	6B23027-03	Soil	02/21/06 00:00	02/23/06 15:40
AH-2 1.0-1.5'	6B23027-04	Soil	02/21/06 00:00	02/23/06 15:40
AH-2 2.0-2.5'	6B23027-05	Soil	02/21/06 00:00	02/23/06 15:40
AH-2 3.0-3.5'	6B23027-06	Soil	02/21/06 00:00	02/23/06 15:40
AH-2 4.0-4.5'	6B23027-07	Soil	02/21/06 00:00	02/23/06 15:40
AH-2 5.0-5.5'	6B23027-08	Soil	02/21/06 00:00	02/23/06 15:40
AH-3 0-1.0'	6B23027-09	Soil	02/21/06 00:00	02/23/06 15:40
AH-3 1.0-1.5'	6B23027-10	Soil	02/21/06 00:00	02/23/06 15:40
AH-4 0-1.0'	6B23027-12	Soil	02/21/06 00:00	02/23/06 15:40
AH-4 1.0-1.5'	6B23027-13	Soil	02/21/06 00:00	02/23/06 15:40
AH-5 0.-1.0'	6B23027-14	Soil	02/21/06 00:00	02/23/06 15:40
AH-5 1.0-1.5'	6B23027-15	Soil	02/21/06 00:00	02/23/06 15:40
AH-6 0-1.0'	6B23027-17	Soil	02/21/06 00:00	02/23/06 15:40
AH-6 1.0-1.5'	6B23027-18	Soil	02/21/06 00:00	02/23/06 15:40
AH-7 0-1.0'	6B23027-20	Soil	02/21/06 00:00	02/23/06 15:40
AH-7 1.0-1.5'	6B23027-21	Soil	02/21/06 00:00	02/23/06 15:40
AH-7 2.0-2.5'	6B23027-22	Soil	02/21/06 00:00	02/23/06 15:40
AH-8 0-1.0'	6B23027-23	Soil	02/21/06 00:00	02/23/06 15:40
AH-8 1.0-1.5'	6B23027-24	Soil	02/21/06 00:00	02/23/06 15:40
AH-9 0-1.0'	6B23027-25	Soil	02/21/06 00:00	02/23/06 15:40
AH-9 1.0-1.5'	6B23027-26	Soil	02/21/06 00:00	02/23/06 15:40
AH-10 0-1.0'	6B23027-28	Soil	02/21/06 00:00	02/23/06 15:40
AH-10 1.0-1.5'	6B23027-29	Soil	02/21/06 00:00	02/23/06 15:40
AH-11 0-1.0'	6B23027-30	Soil	02/21/06 00:00	02/23/06 15:40
AH-11 1.0-1.5'	6B23027-31	Soil	02/21/06 00:00	02/23/06 15:40
AH-12 0-1.0'	6B23027-32	Soil	02/21/06 00:00	02/23/06 15:40
AH-13 0-1.0'	6B23027-33	Soil	02/21/06 00:00	02/23/06 15:40
AH-13 1.0-1.5'	6B23027-34	Soil	02/21/06 00:00	02/23/06 15:40
AH-14 0-1.0'	6B23027-36	Soil	02/21/06 00:00	02/23/06 15:40
AH-14 1.0-1.5'	6B23027-37	Soil	02/21/06 00:00	02/23/06 15:40
AH-15 0-1.0'	6B23027-39	Soil	02/21/06 00:00	02/23/06 15:40
AH-15 1.0-1.5'	6B23027-40	Soil	02/21/06 00:00	02/23/06 15:40

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/07/06 13:24

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-15 2.0-2.5'	6B23027-41	Soil	02/21/06 00:00	02/23/06 15:40
AH-15 3.0-3.5'	6B23027-42	Soil	02/21/06 00:00	02/23/06 15:40

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Reported:  
03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-1 0.-1.0' (6B23027-01) Soil</b>									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB62414	02/24/06	03/01/06	EPA 8015M	
Carbon Ranges C12-C28	102	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	82.9	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	185	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		104 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		104 %	70-130		"	"	"	"	
<b>AH-2 0-1.0' (6B23027-03) Soil</b>									
Carbon Ranges C6-C12	10100	20.0	mg/kg dry	2	EB62414	02/24/06	03/01/06	EPA 8015M	
Carbon Ranges C12-C28	20800	20.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	1570	20.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	32500	20.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		87.8 %	70-130		"	"	"	"	S-04
Surrogate: 1-Chlorooctadecane		49.6 %	70-130		"	"	"	"	S-06
<b>AH-2 2.0-2.5' (6B23027-05) Soil</b>									
Benzene	0.403	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	1.39	0.0250	"	"	"	"	"	"	
Ethylbenzene	1.19	0.0250	"	"	"	"	"	"	
Xylene (p/m)	4.93	0.0250	"	"	"	"	"	"	
Xylene (o)	1.29	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		113 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		272 %	80-120		"	"	"	"	S-04
Carbon Ranges C6-C12	2420	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	7580	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	756	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	10800	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		123 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		113 %	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 3 of 23

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

Project: Pogo/ Cotton Draw TB #2  
 Project Number: 2589  
 Project Manager: Ike Tavaraz

Fax: (432) 682-3946

Reported:  
 03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-2 3.0-3.5' (6B23027-06) Soil</b>									
Benzene	0.294	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	1.04	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.605	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.978	0.0250	"	"	"	"	"	"	
Xylene (o)	0.543	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		250 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		176 %	80-120		"	"	"	"	S-04
Carbon Ranges C6-C12	810	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	1700	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	317	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	2830	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		109 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		114 %	70-130		"	"	"	"	
<b>AH-2 5.0-5.5' (6B23027-08) Soil</b>									
Benzene	0.303	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	1.56	0.0250	"	"	"	"	"	"	
Ethylbenzene	1.18	0.0250	"	"	"	"	"	"	
Xylene (p/m)	5.28	0.0250	"	"	"	"	"	"	
Xylene (o)	0.955	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		290 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		247 %	80-120		"	"	"	"	S-04
Carbon Ranges C6-C12	941	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	1880	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	345	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	3170	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		129 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		137 %	70-130		"	"	"	"	S-04

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Reported:  
 03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-3 0-1.0' (6B23027-09) Soil</b>									
Carbon Ranges C6-C12	1950	10.0	mg/kg dry	1	EB62414	02/24/06	03/01/06	EPA 8015M	
Carbon Ranges C12-C28	4190	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	643	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	6780	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		108 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		104 %	70-130		"	"	"	"	
<b>AH-3 1.0-1.5' (6B23027-10) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	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		91.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	12.1	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	186	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	117	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	315	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		128 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		126 %	70-130		"	"	"	"	
<b>AH-4 0-1.0' (6B23027-12) Soil</b>									
Carbon Ranges C6-C12	5940	20.0	mg/kg dry	2	EB62414	02/24/06	03/01/06	EPA 8015M	
Carbon Ranges C12-C28	22500	20.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	1450	20.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	29900	20.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		63.2 %	70-130		"	"	"	"	S-06
Surrogate: 1-Chlorooctadecane		58.0 %	70-130		"	"	"	"	S-06

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Project Manager: Ike Tavarez

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Reported:  
03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-4 1.0-1.5' (6B23027-13) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.165	0.0250	"	"	"	"	"	"	
Xylene (o)	0.119	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		84.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	540	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	9590	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	760	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	10900	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		114 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		127 %	70-130		"	"	"	"	
<b>AH-5 0.-1.0' (6B23027-14) Soil</b>									
Carbon Ranges C6-C12	87.2	20.0	mg/kg dry	2	EB62414	02/24/06	03/01/06	EPA 8015M	
Carbon Ranges C12-C28	5880	20.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	1520	20.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	7490	20.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		56.2 %	70-130		"	"	"	"	S-06
Surrogate: 1-Chlorooctadecane		64.6 %	70-130		"	"	"	"	S-06
<b>AH-5 1.0-1.5' (6B23027-15) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	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		89.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.0 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	24.0	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	4660	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	808	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	5490	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		112 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		141 %	70-130		"	"	"	"	S-04

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

Project: Pogo/ Cotton Draw TB #2  
 Project Number: 2589  
 Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
 03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-6 0-1.0' (6B23027-17) Soil</b>									
Carbon Ranges C6-C12	1060	10.0	mg/kg dry	1	EB62414	02/24/06	03/01/06	EPA 8015M	
Carbon Ranges C12-C28	8630	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	807	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	10500	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		110 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		121 %	70-130		"	"	"	"	
<b>AH-6 1.0-1.5' (6B23027-18) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	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		90.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	74.4	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	59.3	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	134	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		111 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		113 %	70-130		"	"	"	"	
<b>AH-7 0-1.0' (6B23027-20) Soil</b>									
Carbon Ranges C6-C12	143	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	570	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	220	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	933	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		106 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		114 %	70-130		"	"	"	"	

Highlander Environmental Corp.  
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Reported:  
03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-8 0-1.0' (6B23027-23) Soil</b>									
Carbon Ranges C6-C12	184	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	3870	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	772	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	4830	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		127 %		70-130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		152 %		70-130	"	"	"	"	S-04
<b>AH-9 0-1.0' (6B23027-25) Soil</b>									
Carbon Ranges C6-C12	2980	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	7410	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	779	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	11200	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		113 %		70-130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		108 %		70-130	"	"	"	"	
<b>AH-9 1.0-1.5' (6B23027-26) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	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		92.5 %		80-120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		80-120	"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	137	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	142	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	279	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		110 %		70-130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		112 %		70-130	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-10 0-1.0' (6B23027-28) Soil</b>									
Carbon Ranges C6-C12	66.2	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	896	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	330	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon C6-C35</b>	<b>1290</b>	<b>10.0</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: 1-Chlorooctane		105 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		121 %	70-130		"	"	"	"	
<b>AH-11 0-1.0' (6B23027-30) Soil</b>									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	100	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	91.8	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon C6-C35</b>	<b>192</b>	<b>10.0</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: 1-Chlorooctane		118 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		123 %	70-130		"	"	"	"	
<b>AH-12 0-1.0' (6B23027-32) Soil</b>									
Carbon Ranges C6-C12	76.4	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	665	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	218	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon C6-C35</b>	<b>959</b>	<b>10.0</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: 1-Chlorooctane		95.2 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		101 %	70-130		"	"	"	"	
<b>AH-13 0-1.0' (6B23027-33) Soil</b>									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	43.3	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	26.9	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon C6-C35</b>	<b>70.2</b>	<b>10.0</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Surrogate: 1-Chlorooctane		106 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		106 %	70-130		"	"	"	"	

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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-14 0-1.0' (6B23027-36) Soil</b>									
Carbon Ranges C6-C12	95.1	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	4040	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	743	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	4880	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		93.0 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		107 %	70-130		"	"	"	"	
<b>AH-15 0-1.0' (6B23027-39) Soil</b>									
Carbon Ranges C6-C12	1390	10.0	mg/kg dry	1	EB62414	02/24/06	03/02/06	EPA 8015M	
Carbon Ranges C12-C28	8960	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	841	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	11200	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		86.6 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		85.6 %	70-130		"	"	"	"	
<b>AH-15 1.0-1.5' (6B23027-40) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.218	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.513	0.0250	"	"	"	"	"	"	
Xylene (o)	0.289	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		94.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		152 %	80-120		"	"	"	"	S-04
Carbon Ranges C6-C12	612	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	6060	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	814	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	7490	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		122 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		133 %	70-130		"	"	"	"	S-04

Highlander Environmental Corp.  
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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-15 2.0-2.5' (6B23027-41) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	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		89.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.0 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	75.6	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	80.6	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon C6-C35</b>	<b>156</b>	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		116 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		118 %	70-130		"	"	"	"	

<b>AH-15 3.0-3.5' (6B23027-42) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	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		91.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	80-120		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EC60311	03/06/06	03/06/06	EPA 8015M	
Carbon Ranges C12-C28	32.9	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	40.6	10.0	"	"	"	"	"	"	
<b>Total Hydrocarbon C6-C35</b>	<b>73.5</b>	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		92.6 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		94.2 %	70-130		"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-1 0.-1.0' (6B23027-01) Soil</b>									
Chloride	7060	100	mg/kg	200	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	5.6	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-1 1.0-1.5' (6B23027-02) Soil</b>									
Chloride	9360	100	mg/kg	200	EB62812	02/24/06	02/28/06	EPA 300.0	
<b>AH-2 0-1.0' (6B23027-03) Soil</b>									
Chloride	7540	100	mg/kg	200	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	7.1	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-2 1.0-1.5' (6B23027-04) Soil</b>									
Chloride	8630	200	mg/kg	400	EB62812	02/24/06	02/28/06	EPA 300.0	
<b>AH-2 2.0-2.5' (6B23027-05) Soil</b>									
Chloride	13400	200	mg/kg	400	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	12.7	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-2 3.0-3.5' (6B23027-06) Soil</b>									
Chloride	3800	50.0	mg/kg	100	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	12.7	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-2 4.0-4.5' (6B23027-07) Soil</b>									
Chloride	395	10.0	mg/kg	20	EB62812	02/24/06	02/28/06	EPA 300.0	
<b>AH-2 5.0-5.5' (6B23027-08) Soil</b>									
Chloride	70.2	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	12.0	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-3 0-1.0' (6B23027-09) Soil</b>									
Chloride	2290	50.0	mg/kg	100	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	3.0	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-3 1.0-1.5' (6B23027-10) Soil</b>									
Chloride	122	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	1.5	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-4 0-1.0' (6B23027-12) Soil</b>									
Chloride	3480	50.0	mg/kg	100	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	5.1	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-4 1.0-1.5' (6B23027-13) Soil</b>									
Chloride	83.2	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	7.1	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-5 0-1.0' (6B23027-14) Soil</b>									
Chloride	75.1	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	3.7	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-5 1.0-1.5' (6B23027-15) Soil</b>									
Chloride	56.1	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	3.3	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-6 0-1.0' (6B23027-17) Soil</b>									
Chloride	211	10.0	mg/kg	20	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	6.1	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-6 1.0-1.5' (6B23027-18) Soil</b>									
Chloride	152	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	6.7	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-7 0-1.0' (6B23027-20) Soil</b>									
Chloride	3040	50.0	mg/kg	100	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	4.8	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	

Environmental Lab of Texas

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-7 1.0-1.5' (6B23027-21) Soil</b>									
Chloride	2860	50.0	mg/kg	100	EB62812	02/24/06	02/28/06	EPA 300.0	
<b>AH-7 2.0-2.5' (6B23027-22) Soil</b>									
Chloride	31.2	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
<b>AH-8 0-1.0' (6B23027-23) Soil</b>									
Chloride	91.7	5.00	mg/kg	10	EB62812	02/24/06	02/28/06	EPA 300.0	
% Moisture	2.4	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-8 1.0-1.5' (6B23027-24) Soil</b>									
Chloride	6.30	5.00	mg/kg	10	EB62813	02/24/06	02/28/06	EPA 300.0	
<b>AH-9 0-1.0' (6B23027-25) Soil</b>									
Chloride	4360	50.0	mg/kg	100	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	4.0	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-9 1.0-1.5' (6B23027-26) Soil</b>									
Chloride	66.5	5.00	mg/kg	10	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	3.1	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-10 0-1.0' (6B23027-28) Soil</b>									
Chloride	11.3	5.00	mg/kg	10	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	1.6	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-10 1.0-1.5' (6B23027-29) Soil</b>									
Chloride	7.12	5.00	mg/kg	10	EB62813	02/24/06	02/28/06	EPA 300.0	
<b>AH-11 0-1.0' (6B23027-30) Soil</b>									
Chloride	1890	25.0	mg/kg	50	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	2.5	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	

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

Project: Pogo/ Cotton Draw TB #2  
 Project Number: 2589  
 Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
 03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-11 1.0-1.5' (6B23027-31) Soil</b>									
Chloride	19.7	5.00	mg/kg	10	EB62813	02/24/06	02/28/06	EPA 300.0	
<b>AH-12 0-1.0' (6B23027-32) Soil</b>									
Chloride	14600	200	mg/kg	400	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	10.7	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-13 0-1.0' (6B23027-33) Soil</b>									
Chloride	9300	200	mg/kg	400	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	8.3	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-13 1.0-1.5' (6B23027-34) Soil</b>									
Chloride	1400	25.0	mg/kg	50	EB62813	02/24/06	02/28/06	EPA 300.0	
<b>AH-14 0-1.0' (6B23027-36) Soil</b>									
Chloride	272	10.0	mg/kg	20	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	4.9	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-14 1.0-1.5' (6B23027-37) Soil</b>									
Chloride	53.7	5.00	mg/kg	10	EB62813	02/24/06	02/28/06	EPA 300.0	
<b>AH-15 0-1.0' (6B23027-39) Soil</b>									
Chloride	6930	100	mg/kg	200	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	10.9	0.1	%	1	EB62703	02/24/06	02/27/06	% calculation	
<b>AH-15 1.0-1.5' (6B23027-40) Soil</b>									
Chloride	4120	50.0	mg/kg	100	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	5.7	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	
<b>AH-15 2.0-2.5' (6B23027-41) Soil</b>									
Chloride	2360	50.0	mg/kg	100	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	4.1	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/07/06 13:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-15 3.0-3.5' (6B23027-42) Soil</b>									
Chloride	598	10.0	mg/kg	20	EB62813	02/24/06	02/28/06	EPA 300.0	
% Moisture	2.0	0.1	%	1	EC60601	03/03/06	03/06/06	% calculation	

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Project Manager: Ike Tavaraz

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Reported:  
03/07/06 13:24

**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 EB62414 - Solvent Extraction (GC)**

**Blank (EB62414-BLK1)**

Prepared: 02/24/06 Analyzed: 03/01/06

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 Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	47.6		mg/kg	50.0		95.2	70-130			
Surrogate: 1-Chlorooctadecane	45.9		"	50.0		91.8	70-130			

**LCS (EB62414-BS1)**

Prepared: 02/24/06 Analyzed: 03/01/06

Carbon Ranges C6-C12	514	10.0	mg/kg wet	500		103	75-125			
Carbon Ranges C12-C28	496	10.0	"	500		99.2	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	59.7		mg/kg	50.0		119	70-130			
Surrogate: 1-Chlorooctadecane	56.5		"	50.0		113	70-130			

**Calibration Check (EB62414-CCV1)**

Prepared: 02/24/06 Analyzed: 03/02/06

Carbon Ranges C6-C12	233		mg/kg	250		93.2	80-120			
Carbon Ranges C12-C28	265		"	250		106	80-120			
Total Hydrocarbon C6-C35	498		"	500		99.6	80-120			
Surrogate: 1-Chlorooctane	53.6		"	50.0		107	70-130			
Surrogate: 1-Chlorooctadecane	54.2		"	50.0		108	70-130			

**Matrix Spike (EB62414-MS1)**

Source: 6B23027-01

Prepared: 02/24/06 Analyzed: 03/02/06

Carbon Ranges C6-C12	594	10.0	mg/kg dry	530	ND	112	75-125			
Carbon Ranges C12-C28	636	10.0	"	530	102	101	75-125			
Carbon Ranges C28-C35	38.6	10.0	"	0.00	82.9		75-125			
Total Hydrocarbon C6-C35	1270	10.0	"	1060	185	102	75-125			
Surrogate: 1-Chlorooctane	60.7		mg/kg	50.0		121	70-130			
Surrogate: 1-Chlorooctadecane	59.0		"	50.0		118	70-130			

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**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 EB62414 - Solvent Extraction (GC)**

<b>Matrix Spike Dup (EB62414-MSD1)</b>		<b>Source: 6B23027-01</b>		<b>Prepared: 02/24/06</b>		<b>Analyzed: 03/02/06</b>				
Carbon Ranges C6-C12	591	10.0	mg/kg dry	530	ND	112	75-125	0.506	20	
Carbon Ranges C12-C28	628	10.0	"	530	102	99.2	75-125	1.27	20	
Carbon Ranges C28-C35	44.8	10.0	"	0.00	82.9		75-125	14.9	20	
Total Hydrocarbon C6-C35	1260	10.0	"	1060	185	101	75-125	0.791	20	
Surrogate: 1-Chlorooctane	60.6		mg/kg	50.0		121	70-130			
Surrogate: 1-Chlorooctadecane	58.0		"	50.0		116	70-130			

**Batch EC60311 - Solvent Extraction (GC)**

<b>Blank (EC60311-BLK1)</b>				<b>Prepared: 03/03/06</b>		<b>Analyzed: 03/06/06</b>				
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 Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	52.2		mg/kg	50.0		104	70-130			
Surrogate: 1-Chlorooctadecane	44.5		"	50.0		89.0	70-130			

<b>LCS (EC60311-BS1)</b>				<b>Prepared: 03/03/06</b>		<b>Analyzed: 03/06/06</b>				
Carbon Ranges C6-C12	543	10.0	mg/kg wet	500		109	75-125			
Carbon Ranges C12-C28	509	10.0	"	500		102	75-125			
Total Hydrocarbon C6-C35	1050	10.0	"	1000		105	75-125			
Surrogate: 1-Chlorooctane	63.7		mg/kg	50.0		127	70-130			
Surrogate: 1-Chlorooctadecane	48.9		"	50.0		97.8	70-130			

<b>Calibration Check (EC60311-CCV1)</b>				<b>Prepared: 03/03/06</b>		<b>Analyzed: 03/06/06</b>				
Carbon Ranges C6-C12	262		mg/kg	250		105	80-120			
Carbon Ranges C12-C28	298		"	250		119	80-120			
Total Hydrocarbon C6-C35	560		"	500		112	80-120			
Surrogate: 1-Chlorooctane	61.7		"	50.0		123	70-130			
Surrogate: 1-Chlorooctadecane	57.3		"	50.0		115	70-130			

Highlander Environmental Corp.  
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Project: Pogo/ Cotton Draw TB #2  
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Reported:  
03/07/06 13:24

**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 EC60311 - Solvent Extraction (GC)**

**Matrix Spike (EC60311-MS1)** Source: 6C03004-01 Prepared: 03/03/06 Analyzed: 03/06/06

Carbon Ranges C6-C12	682	10.0	mg/kg dry	621	ND	110	75-125			
Carbon Ranges C12-C28	631	10.0	"	621	60.9	91.8	75-125			
Total Hydrocarbon C6-C35	1310	10.0	"	1240	89.0	98.5	75-125			
Surrogate: 1-Chlorooctane	38.1		mg/kg	50.0		76.2	70-130			
Surrogate: 1-Chlorooctadecane	35.3		"	50.0		70.6	70-130			

**Matrix Spike Dup (EC60311-MSD1)** Source: 6C03004-01 Prepared: 03/03/06 Analyzed: 03/06/06

Carbon Ranges C6-C12	684	10.0	mg/kg dry	621	ND	110	75-125	0.293	20	
Carbon Ranges C12-C28	640	10.0	"	621	60.9	93.3	75-125	1.42	20	
Total Hydrocarbon C6-C35	1320	10.0	"	1240	89.0	99.3	75-125	0.760	20	
Surrogate: 1-Chlorooctane	38.2		mg/kg	50.0		76.4	70-130			
Surrogate: 1-Chlorooctadecane	35.2		"	50.0		70.4	70-130			

**Batch EC60604 - EPA 5030C (GC)**

**Blank (EC60604-BLK1)**

Prepared & Analyzed: 03/06/06

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	32.1		ug/kg	40.0		80.2	80-120			
Surrogate: 4-Bromofluorobenzene	41.0		"	40.0		102	80-120			

**LCS (EC60604-BS1)**

Prepared & Analyzed: 03/06/06

Benzene	0.0405	0.00100	mg/kg wet	0.0500		81.0	80-120			
Toluene	0.0464	0.00100	"	0.0500		92.8	80-120			
Ethylbenzene	0.0555	0.00100	"	0.0500		111	80-120			
Xylene (p/m)	0.117	0.00100	"	0.100		117	80-120			
Xylene (o)	0.0579	0.00100	"	0.0500		116	80-120			
Surrogate: a,a,a-Trifluorotoluene	37.7		ug/kg	40.0		94.2	80-120			
Surrogate: 4-Bromofluorobenzene	42.9		"	40.0		107	80-120			

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/07/06 13:24

**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 EC60604 - EPA 5030C (GC)**

**Calibration Check (EC60604-CCV1)**

Prepared & Analyzed: 03/06/06

Benzene	40.3		ug/kg	50.0		80.6	80-120			
Toluene	42.0		"	50.0		84.0	80-120			
Ethylbenzene	47.3		"	50.0		94.6	80-120			
Xylene (p/m)	99.5		"	100		99.5	80-120			
Xylene (o)	50.2		"	50.0		100	80-120			
Surrogate: a,a,a-Trifluorotoluene	33.6		"	40.0		84.0	80-120			
Surrogate: 4-Bromofluorobenzene	33.3		"	40.0		83.2	80-120			

**Matrix Spike (EC60604-MS1)**

Source: 6C03004-01

Prepared & Analyzed: 03/06/06

Benzene	1.25	0.0250	mg/kg dry	1.55	ND	80.6	80-120			
Toluene	1.40	0.0250	"	1.55	ND	90.3	80-120			
Ethylbenzene	1.73	0.0250	"	1.55	ND	112	80-120			
Xylene (p/m)	3.64	0.0250	"	3.11	ND	117	80-120			
Xylene (o)	1.82	0.0250	"	1.55	ND	117	80-120			
Surrogate: a,a,a-Trifluorotoluene	34.0		ug/kg	40.0		85.0	80-120			
Surrogate: 4-Bromofluorobenzene	47.1		"	40.0		118	80-120			

**Matrix Spike Dup (EC60604-MSD1)**

Source: 6C03004-01

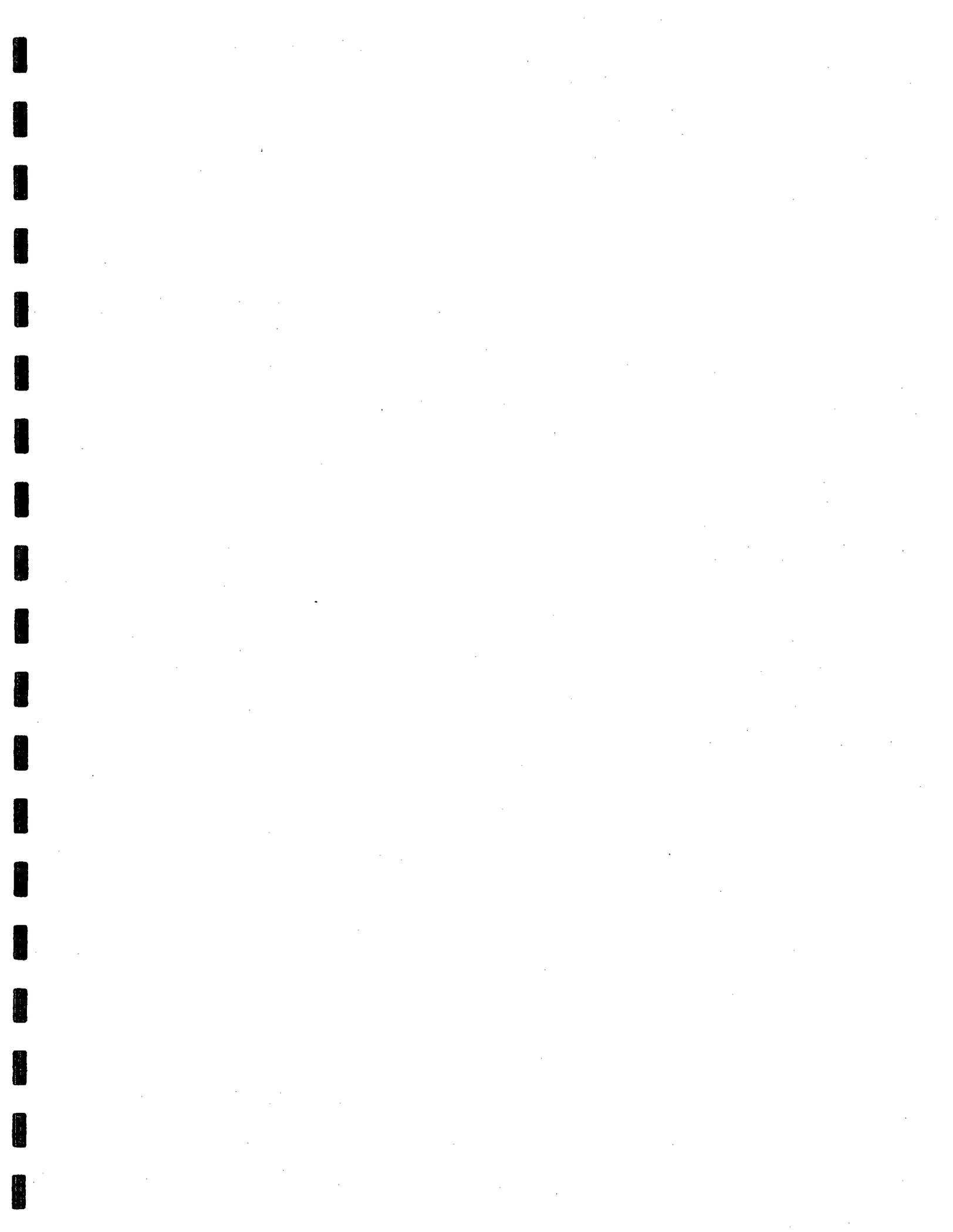
Prepared & Analyzed: 03/06/06

Benzene	1.26	0.0250	mg/kg dry	1.55	ND	81.3	80-120	0.865	20	
Toluene	1.40	0.0250	"	1.55	ND	90.3	80-120	0.00	20	
Ethylbenzene	1.69	0.0250	"	1.55	ND	109	80-120	2.71	20	
Xylene (p/m)	3.58	0.0250	"	3.11	ND	115	80-120	1.72	20	
Xylene (o)	1.79	0.0250	"	1.55	ND	115	80-120	1.72	20	
Surrogate: a,a,a-Trifluorotoluene	34.1		ug/kg	40.0		85.2	80-120			
Surrogate: 4-Bromofluorobenzene	44.3		"	40.0		111	80-120			

Environmental Lab of Texas

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

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**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 EB62703 - General Preparation (Prep)**

<b>Blank (EB62703-BLK1)</b>		Prepared: 02/24/06 Analyzed: 02/27/06								
% Solids	100		%							
<b>Duplicate (EB62703-DUP1)</b>		Source: 6B23028-01 Prepared: 02/24/06 Analyzed: 02/27/06								
% Solids	98.4		%		98.4			0.00	20	
<b>Duplicate (EB62703-DUP2)</b>		Source: 6B23027-20 Prepared: 02/24/06 Analyzed: 02/27/06								
% Solids	95.2		%		95.2			0.00	20	
<b>Duplicate (EB62703-DUP3)</b>		Source: 6B24003-01 Prepared: 02/24/06 Analyzed: 02/27/06								
% Solids	89.0		%		89.3			0.337	20	
<b>Duplicate (EB62703-DUP4)</b>		Source: 6B24009-15 Prepared: 02/24/06 Analyzed: 02/27/06								
% Solids	93.4		%		93.0			0.429	20	
<b>Duplicate (EB62703-DUP5)</b>		Source: 6B24010-14 Prepared: 02/24/06 Analyzed: 02/27/06								
% Solids	93.2		%		93.6			0.428	20	

**Batch EB62812 - Water Extraction**

<b>Blank (EB62812-BLK1)</b>		Prepared: 02/24/06 Analyzed: 02/28/06								
Chloride	ND	0.500	mg/kg							
<b>LCS (EB62812-BS1)</b>		Prepared: 02/24/06 Analyzed: 02/28/06								
Chloride	9.67	0.500	mg/kg	10.0		96.7	80-120			
<b>Calibration Check (EB62812-CCV1)</b>		Prepared: 02/24/06 Analyzed: 02/28/06								
Chloride	9.44		mg/L	10.0		94.4	80-120			

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Reported:  
 03/07/06 13:24

**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 EB62812 - Water Extraction**

<b>Duplicate (EB62812-DUP1)</b>		<b>Source: 6B23027-01</b>		Prepared: 02/24/06		Analyzed: 02/28/06				
Chloride	7120	0.500	mg/kg		7060			0.846	20	

**Batch EB62813 - Water Extraction**

<b>Blank (EB62813-BLK1)</b>				Prepared: 02/24/06		Analyzed: 02/28/06				
Chloride	ND	0.500	mg/kg							

<b>LCS (EB62813-BS1)</b>				Prepared: 02/24/06		Analyzed: 02/28/06				
Chloride	9.39	0.500	mg/kg	10.0		93.9	80-120			

<b>Calibration Check (EB62813-CCV1)</b>				Prepared: 02/24/06		Analyzed: 02/28/06				
Chloride	9.19		mg/L	10.0		91.9	80-120			

<b>Duplicate (EB62813-DUP1)</b>		<b>Source: 6B23027-25</b>		Prepared: 02/24/06		Analyzed: 02/28/06				
Chloride	4390	50.0	mg/kg		4360			0.686	20	

**Batch EC60601 - General Preparation (Prep)**

<b>Blank (EC60601-BLK1)</b>				Prepared: 03/03/06		Analyzed: 03/06/06				
% Solids	100		%							

<b>Duplicate (EC60601-DUP1)</b>		<b>Source: 6C03001-01</b>		Prepared: 03/03/06		Analyzed: 03/06/06				
% Solids	96.0		%		96.7			0.727	20	

<b>Duplicate (EC60601-DUP2)</b>		<b>Source: 6B23027-26</b>		Prepared: 03/03/06		Analyzed: 03/06/06				
% Solids	97.0		%		96.9			0.103	20	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/07/06 13:24

### Notes and Definitions

S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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:

3-07-06

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.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

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

**Environmental Lab of Texas**  
**Variance / Corrective Action Report – Sample Log-In**

Client: Highlander

Date/Time: 2/23/06 3:40

Order #: WB23027

Initials: CK

**Sample Receipt Checklist**

Temperature of container/cooler?	Yes	No	30 C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/>	No	
Custody Seals intact on shipping container/cooler?	Yes	No	<del>Not present</del>
Custody Seals intact on sample bottles?	Yes	No	<del>Not present</del>
Chain of custody present?	<input checked="" type="checkbox"/>	No	
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/>	No	
Chain of custody agrees with sample label(s)	Yes	No	ID on ICB
Container labels legible and intact?	Yes	No	N/A
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/>	No	
Samples in proper container/bottle?	<input checked="" type="checkbox"/>	No	
Samples properly preserved?	<input checked="" type="checkbox"/>	No	
Sample bottles intact?	<input checked="" type="checkbox"/>	No	
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/>	No	
All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	No	
VOC samples have zero headspace?	<input checked="" type="checkbox"/>	No	Not Applicable

Other observations:

\_\_\_\_\_

\_\_\_\_\_

**Variance Documentation:**

Contact Person: - \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_  
 Regarding: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Corrective Action Taken:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Jeanne McMurrey**

---

**From:** "Ike T" <itavarez@hec-enviro.com>  
**To:** "Jeanne - Enviro Lab" <jeanne@elabtexas.com>  
**Sent:** Friday, March 03, 2006 1:18 PM  
**Subject:** Pogo Producing - Additional Analysis for the Cotton Draw Project

**Pogo Producing Company – Cotton Draw Tank Battery #2, Lea County, New Mexico**  
**Lab Order # 6B23027**  
**Project #2589**

Jeanne, please additional analysis on samples below. Call me if you have any questions, thanks.

AH-2 (2-2.5) – TPH, BTEX  
AH-2 (3-3.5) - TPH, BTEX  
AH-2 (5-5.5) – TPH, BTEX

AH-3 (1-1.5') – TPH, BTEX

AH-4 (1-1.5) - TPH, BTEX

AH-5 (1-1.5) – TPH, BTEX

AH-6 (1-1.5) – TPH, BTEX

AH-9 (1-1.5) – TPH, BTEX

AH-15 (1-1.5) – TPH, BTEX  
      (2-2.5) – TPH, BTEX  
      (3-3.5) – TPH, BTEX

--

This message has been scanned for viruses and dangerous content by BasinBroadband, and is believed to be clean.







# 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: **P060** SITE MANAGER: **Ike Tavaréz**

PROJECT NO.: **2589** PROJECT NAME: **P060 / Cotton Draw TB#2**

LAB I.D. NUMBER: **31** DATE: **2/21/06** TIME: **11:00 AM**

COMP. GRAB MATRIX: **S** SAMPLE IDENTIFICATION: **AH-11 (1.0' - 1.5')**

**32** **S** **AH-12 (0 - 1.0')**

**33** **S** **AH-13 (0 - 1.0')**

**34** **S** **AH-13 (1.0' - 1.5')**

**35** **S** **AH-13 (2.0' - 2.5')**

**36** **S** **AH-14 (0 - 1.0')**

**37** **S** **AH-14 (1.0' - 1.5')**

**38** **S** **AH-14 (2.0' - 2.5')**

**39** **S** **AH-15 (0 - 1.0')**

**40** **S** **AH-15 (1.0' - 1.5')**

RELINQUISHED BY: (Signature) **[Signature]** Date: **2/23/06** Time: **3:40**

RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RECEIVING LABORATORY: **ELT**

ADDRESS: **68155** STATE: **TX** ZIP: \_\_\_\_\_

CONTACT: \_\_\_\_\_ PHONE: \_\_\_\_\_

RECEIVED BY: (Signature) \_\_\_\_\_ Date: **2/23/06** Time: **3:40**

RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RECEIVED BY: (Signature) **[Signature]** Date: **2/23/06** Time: **3:40**

MATRIX: **W-Water S-Solids A-Air SL-Sludge O-Other**

REMARKS: **3.0 for glass new labels**

PROJECT MANAGER CONTACT PERSON: **Ike Tavaréz**

DATE: **2/23/06** TIME: **3:40**

REMARKS: **3.0 for glass new labels**

ANALYSIS REQUEST (Circle or Specify Method No.)	DATE	TIME
STEX 8080/808		
MTBE 8080/808		
TPH 418.1 (8015 MOD) 7X1005		
PAH 8270		
RCRA Metals Ag As Ba Cd Cr Pb Hg Se		
TCF Metals Ag As Ba Cd Cr Pb Hg Se		
TCF Volatiles		
TCF Semi Volatiles		
RCI		
GC/MS Vol. 8240/8280/824		
GC/MS Sampl. Vol. 8270/825		
PCB# 8080/808		
Post. 808/808		
BOD, TSS, pH, TDS, Chloride		
Gamma Spec.		
Alpha Beta (Air)		
PLM (Asbestos)		

SAMPLED BY: (Print & Sign) **Key Taylor / Ike Tavaréz** Date: **2/23/06**  
 TIME: **1:30**

SAMPLE SHIPPED BY: (Circle) **BUS**  
 FEDEX **UPS**

HAND DELIVERED

REMARKS BY: \_\_\_\_\_

HIGHLANDER CONTACT PERSON: **Ike Tavaréz**

RUSH Charges Authorized: **Yes** No

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: **P060** SITE MANAGER: **Ike Tavaraz**

PROJECT NO.: **2589** PROJECT NAME: **P060 Cotton Draw TBH2**

LAB I.D. NUMBER: **0B13027** TIME: **2/21/06** SAMPLE IDENTIFICATION: **Leg County, NM**

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	NUMBER OF CONTAINERS	FLTERED (Y/N)	HCL	HNO3	ICE	NONE	PRESERVATIVE METHOD
-41	2/21/06		S	X	X	1		X	X	X		
-42	2/21/06		S	X	X	1		X	X	X		
-43	2/21/06		S	X	X	1		X	X	X		

ANALYSIS REQUEST  
(Circle or Specify Method No.)

<input checked="" type="checkbox"/>	MTRE 8020/808	<input checked="" type="checkbox"/>	PAH 8870	<input checked="" type="checkbox"/>	TCR Volatiles	<input checked="" type="checkbox"/>	TCR Semi Volatiles	<input checked="" type="checkbox"/>	TCR Metals Ag As Ba Cd Cr Pb Hg Se	<input checked="" type="checkbox"/>	TCR Metals Ag As Ba Cd Cr Pb Hg Se	<input checked="" type="checkbox"/>	RCMA Metals Ag As Ba Cd Cr Pb Hg Se	<input checked="" type="checkbox"/>	TCR Volatiles	<input checked="" type="checkbox"/>	TCR Semi Volatiles	<input checked="" type="checkbox"/>	RCI	<input checked="" type="checkbox"/>	GCMS Vol. 8240/8280/824	<input checked="" type="checkbox"/>	GCMS 3cmL Vol. 8270/825	<input checked="" type="checkbox"/>	PCB's 8080/808	<input checked="" type="checkbox"/>	PCB's 808/808	<input checked="" type="checkbox"/>	Post. 808/808	<input checked="" type="checkbox"/>	BOD, TSS, pH, TDS, Chloride	<input checked="" type="checkbox"/>	Gamma Spec.	<input checked="" type="checkbox"/>	Alpha Beta (Alr)	<input checked="" type="checkbox"/>	PLM (Asbestos)
-------------------------------------	---------------	-------------------------------------	----------	-------------------------------------	---------------	-------------------------------------	--------------------	-------------------------------------	------------------------------------	-------------------------------------	------------------------------------	-------------------------------------	-------------------------------------	-------------------------------------	---------------	-------------------------------------	--------------------	-------------------------------------	-----	-------------------------------------	-------------------------	-------------------------------------	-------------------------	-------------------------------------	----------------	-------------------------------------	---------------	-------------------------------------	---------------	-------------------------------------	-----------------------------	-------------------------------------	-------------	-------------------------------------	------------------	-------------------------------------	----------------

RECEIVED BY: (Signature) **[Signature]** Date: **2/27/06** Time: **3:40**

RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RECEIVED BY: (Signature) **[Signature]** Date: **2/23/06** Time: **3:40**

RECEIVING LABORATORY: **ELT** ADDRESS: **04754** STATE: **TX** ZIP: \_\_\_\_\_

CONTACT: \_\_\_\_\_ PHONE: \_\_\_\_\_

MATRIX:  W-Water  A-Air  SD-Solid  SI-Sludge  O-Other

SAMPLE CONDITION WHEN RECEIVED: \_\_\_\_\_

REMARKS: **402 glass 3.0 yr label/lead none**

HIGHLANDER CONTACT PERSON: **Ike Tavaraz**

RESULTS BY: **Ike Tavaraz**

RUSH CHARGES AUTHORIZED: **Yes**

OTHER: **FEDEX HAND DELIVERED**

AIRBILL # \_\_\_\_\_

SAMPLE SHIPPED BY: (Circle) **BUS**

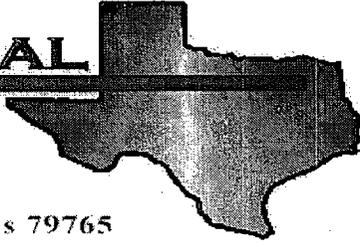
SAMPLED BY: (Print & Sign) **Ike Tavaraz** Date: **2/21/06** Time: **1:30**

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.

**Analytical Report**

**3/13/2006**

**E** NVIRONMENTAL  
LAB OF



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Ike Tavaréz

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ Cotton Draw TB #2

Project Number: 2589

Location: Lea County, NM

Lab Order Number: 6C07003

Report Date: 03/13/06

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/13/06 09:04

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-1 T-1 2.0' BEB	6C07003-01	Soil	03/03/06 00:00	03/07/06 14:00
AH-12 T-2 2.0'	6C07003-03	Soil	03/03/06 00:00	03/07/06 14:00
AH-12 T-2 3.5'	6C07003-04	Soil	03/03/06 00:00	03/07/06 14:00
AH-12 T-2 5.0'	6C07003-05	Soil	03/03/06 00:00	03/07/06 14:00

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/13/06 09:04

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-1 T-1 2.0' BEB (6C07003-01) Soil</b>									
Chloride	232	10.0	mg/kg	20	EC60910	03/09/06	03/09/06	EPA 300.0	
<b>AH-12 T-2 2.0' (6C07003-03) Soil</b>									
Chloride	16600	200	mg/kg	400	EC60910	03/09/06	03/09/06	EPA 300.0	
<b>AH-12 T-2 3.5' (6C07003-04) Soil</b>									
Chloride	17700	200	mg/kg	400	EC60910	03/09/06	03/09/06	EPA 300.0	
<b>AH-12 T-2 5.0' (6C07003-05) Soil</b>									
Chloride	112	5.00	mg/kg	10	EC60910	03/09/06	03/09/06	EPA 300.0	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/13/06 09:04

**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
<b>Batch EC60910 - Water Extraction</b>										
<b>Blank (EC60910-BLK1)</b>										
Prepared & Analyzed: 03/09/06										
Chloride	ND	0.500	mg/kg							
<b>LCS (EC60910-BS1)</b>										
Prepared & Analyzed: 03/09/06										
Chloride	9.17		mg/L	10.0		91.7	80-120			
<b>Calibration Check (EC60910-CCV1)</b>										
Prepared & Analyzed: 03/09/06										
Chloride	9.39		mg/L	10.0		93.9	80-120			
<b>Duplicate (EC60910-DUP1)</b>										
Source: 6C08016-01 Prepared & Analyzed: 03/09/06										
Chloride	1770	50.0	mg/kg		1760			0.567	20	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/13/06 09:04

### Notes and Definitions

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:

*3-13-06*

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.

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

**Environmental Lab of Texas**  
**Variance / Corrective Action Report – Sample Log-In**

Client: Highlander  
 Date/Time: 3/7/06 2:00  
 Order #: 6107003  
 Initials: ck

**Sample Receipt Checklist**

	Yes	No	
Temperature of container/cooler?			610 C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/>	No	
Custody Seals intact on shipping container/cooler?	<input checked="" type="checkbox"/>	No	<u>Not present</u>
Custody Seals intact on sample bottles?	<input checked="" type="checkbox"/>	No	<u>Not present</u>
Chain of custody present?	<input checked="" type="checkbox"/>	No	
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/>	No	
Chain of custody agrees with sample label(s)	<input checked="" type="checkbox"/>	No	
Container labels legible and intact?	<input checked="" type="checkbox"/>	No	
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/>	No	
Samples in proper container/bottle?	<input checked="" type="checkbox"/>	No	
Samples properly preserved?	<input checked="" type="checkbox"/>	No	
Sample bottles intact?	<input checked="" type="checkbox"/>	No	
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/>	No	
All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	No	
VOC samples have zero headspace?	<input checked="" type="checkbox"/>	No	Not Applicable

Other observations:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Variance Documentation:**

Contact Person: - \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_  
 Regarding: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Corrective Action Taken:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

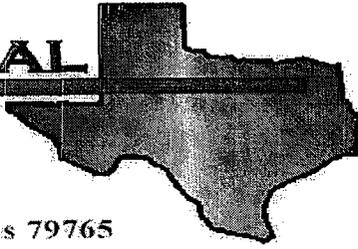
\_\_\_\_\_



**Analytical Report**

**3/13/2006**

**E** NVIRONMENTAL  
LAB OF



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Ike Tavarez

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ Cotton Draw TB #2

Project Number: 2589

Location: Lea County, NM

Lab Order Number: 6C09012

Report Date: 03/13/06

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/13/06 10:49

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-13 (2.0'-2.5')	6C09012-01	Soil	02/21/06 00:00	02/23/06 15:40

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:  
03/13/06 10:49

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-13 (2.0'-2.5') (6C09012-01) Soil</b>									
Chloride	39.1	5.00	mg/kg	10	EC61305	03/10/06	03/13/06	EPA 300.0	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/13/06 10:49

**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
<b>Batch EC61305 - Water Extraction</b>										
<b>Blank (EC61305-BLK1)</b> Prepared: 03/10/06 Analyzed: 03/13/06										
Chloride	ND	0.500	mg/kg							
<b>LCS (EC61305-BS1)</b> Prepared: 03/10/06 Analyzed: 03/13/06										
Chloride	8.69		mg/L	10.0		86.9	80-120			
<b>Calibration Check (EC61305-CCV1)</b> Prepared: 03/10/06 Analyzed: 03/13/06										
Chloride	8.99		mg/L	10.0		89.9	80-120			
<b>Duplicate (EC61305-DUP1)</b> Source: 6C09004-02 Prepared: 03/10/06 Analyzed: 03/13/06										
Chloride	516	10.0	mg/kg		509			1.37	20	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/13/06 10:49

### Notes and Definitions

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:

03-13-06

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.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

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 4 of 4

# Analysis Request and Chain of Custody Record

## HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.  
Midland, Texas 79705

**COPY**  
Fax (432) 682-3946

(432) 682-4559

CLIENT NAME: **P060**

SITE MANAGER: **Ike Tavaroz**

PROJECT NO.: **2589**

PROJECT NAME: **P060 / Cotton Draw TBH2**

submit# **09012**

LAB I.D. NUMBER **1001**

SAMPLE IDENTIFICATION

DATE	TIME	MATRIX	COMP.	GRAB	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD
7/2/04		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
		S	X	X	1		HNOS
		S	X	X	1		HCL
		S	X	X	1		NONE
		S	X	X	1		ICE
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		S	X	X	1		HCL
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Environmental Lab of Texas  
Variance / Corrective Action Report – Sample Log-In

Client: Highlander

Date/Time: 2/23/06 3:40

Order #: 6B23027 / 6C09012 resubmit #

**COPY**

Initials: ck

**Sample Receipt Checklist**

Temperature of container/cooler?	Yes	No	30 C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/>	No	
Custody Seals intact on shipping container/cooler?	Yes	No	<del>Not present</del>
Custody Seals intact on sample bottles?	Yes	No	<del>Not present</del>
Chain of custody present?	<input checked="" type="checkbox"/>	No	
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/>	No	
Chain of custody agrees with sample label(s)	Yes	No	ED on 1105
Container labels legible and intact?	Yes	No	N/A
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/>	No	
Samples in proper container/bottle?	<input checked="" type="checkbox"/>	No	
Samples properly preserved?	<input checked="" type="checkbox"/>	No	
Sample bottles intact?	<input checked="" type="checkbox"/>	No	
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/>	No	
All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	No	
VOC samples have zero headspace?	<input checked="" type="checkbox"/>	No	Not Applicable

Other observations:

\_\_\_\_\_

\_\_\_\_\_

**Variance Documentation:**

Contact Person: - \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_  
Regarding: \_\_\_\_\_

\_\_\_\_\_

Corrective Action Taken:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Jeanne McMurrey**

---

**From:** "Ike T" <itavarez@hec-enviro.com>  
**To:** "Jeanne - Enviro Lab" <jeanne@elabtxas.com>  
**Sent:** Thursday, March 09, 2006 1:45 PM  
**Subject:** FW: Pogo Producing - Additional Analysis for the Cotton Draw Project

**Pogo Producing Company – Cotton Draw Tank Battery #2, Lea County, New Mexico**  
**Lab Order # 6B23027**  
**Project #2589**

Jeanne, please run additional analysis on the sample below. Call me if you have any questions, thanks.

AH-13 (2-2.5') - Chloride

-----Original Message-----

**From:** Jeanne McMurrey [mailto:jeanne@elabtxas.com]  
**Sent:** Friday, March 03, 2006 2:30 PM  
**To:** Ike T  
**Subject:** Re: Pogo Producing - Additional Analysis for the Cotton Draw Project

Thanks Ike. I will add your analysis request.  
~Jeanne

Jeanne McMurrey  
Environmental Lab of Texas I, Ltd.  
12600 West I-20 East  
Odessa, Texas 79765  
432-563-1800

----- Original Message -----

**From:** Ike T  
**To:** Jeanne - Enviro Lab  
**Sent:** Friday, March 03, 2006 1:18 PM  
**Subject:** Pogo Producing - Additional Analysis for the Cotton Draw Project

**Pogo Producing Company – Cotton Draw Tank Battery #2, Lea County, New Mexico**  
**Lab Order # 6B23027**  
**Project #2589**

Jeanne, please additional analysis on samples below. Call me if you have any questions, thanks.

- AH-2 (2-2.5) – TPH, BTEX
- AH-2 (3-3.5) - TPH, BTEX
- AH-2 (5-5.5) – TPH, BTEX
  
- AH-3 (1-1.5') – TPH, BTEX
  
- AH-4 (1-1.5) - TPH, BTEX
  
- AH-5 (1-1.5) – TPH, BTEX

AH-6 (1-1.5) – TPH, BTEX

AH-9 (1-1.5) – TPH, BTEX

AH-15 (1-1.5) – TPH, BTEX  
(2-2.5) – TPH, BTEX  
(3-3.5) – TPH, BTEX

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This message has been scanned for viruses and dangerous content by BasinBroadband, and is believed to be clean.

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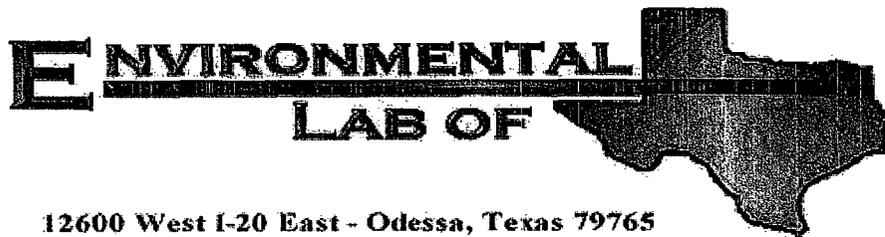
This message has been scanned for viruses and dangerous content by BasinBroadband, and is believed to be clean.

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This message has been scanned for viruses and dangerous content by BasinBroadband, and is believed to be clean.

**Analytical Report**

**3/17/2006**



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Ike Tavarez

Highlander Environmental Corp.

1910 N. Big Spring St.

Midland, TX 79705

Project: Pogo/ Cotton Draw TB #2

Project Number: 2589

Location: Lea County, NM

Lab Order Number: 6C13019

Report Date: 03/17/06

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavaréz

Fax: (432) 682-3946  
Reported:  
03/17/06 10:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-4 (0-1.0') BEB	6C13019-01	Soil	03/09/06 00:00	03/13/06 16:00
AH-5 (0-1.0') BEB	6C13019-02	Soil	03/09/06 00:00	03/13/06 16:00

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

Project: Pogo/ Cotton Draw TB #2  
 Project Number: 2589  
 Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:  
 03/17/06 10:28

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-4 (0-1.0') BEB (6C13019-01) Soil</b>									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EC61406	03/14/06	03/15/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		105 %		70-130	"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		103 %		70-130	"	"	"	"	
<b>AH-5 (0-1.0') BEB (6C13019-02) Soil</b>									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EC61406	03/14/06	03/15/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		111 %		70-130	"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>		110 %		70-130	"	"	"	"	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavarez

Fax: (432) 682-3946

Reported:  
03/17/06 10:28

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AH-4 (0-1.0') BEB (6C13019-01) Soil</b>									
% Moisture	5.4	0.1	%	1	EC61506	03/14/06	03/15/06	% calculation	
<b>AH-5 (0-1.0') BEB (6C13019-02) Soil</b>									
% Moisture	3.3	0.1	%	1	EC61506	03/14/06	03/15/06	% calculation	

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 3 of 7

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:  
03/17/06 10:28

**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 EC61406 - Solvent Extraction (GC)**

**Blank (EC61406-BLK1)**

Prepared & Analyzed: 03/14/06

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 Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	50.2		mg/kg	50.0		100	70-130			
Surrogate: 1-Chlorooctadecane	42.2		"	50.0		84.4	70-130			

**LCS (EC61406-BS1)**

Prepared & Analyzed: 03/14/06

Carbon Ranges C6-C12	494	10.0	mg/kg wet	500		98.8	75-125			
Carbon Ranges C12-C28	434	10.0	"	500		86.8	75-125			
Total Hydrocarbon C6-C35	928	10.0	"	1000		92.8	75-125			
Surrogate: 1-Chlorooctane	53.4		mg/kg	50.0		107	70-130			
Surrogate: 1-Chlorooctadecane	44.3		"	50.0		88.6	70-130			

**Calibration Check (EC61406-CCV1)**

Prepared: 03/14/06 Analyzed: 03/15/06

Carbon Ranges C6-C12	231		mg/kg	250		92.4	80-120			
Carbon Ranges C12-C28	258		"	250		103	80-120			
Total Hydrocarbon C6-C35	489		"	500		97.8	80-120			
Surrogate: 1-Chlorooctane	50.5		"	50.0		101	70-130			
Surrogate: 1-Chlorooctadecane	52.8		"	50.0		106	70-130			

**Matrix Spike (EC61406-MS1)**

Source: 6C13017-17

Prepared & Analyzed: 03/14/06

Carbon Ranges C6-C12	569	10.0	mg/kg dry	534	ND	107	75-125			
Carbon Ranges C12-C28	511	10.0	"	534	8.14	94.2	75-125			
Total Hydrocarbon C6-C35	1080	10.0	"	1070	ND	101	75-125			
Surrogate: 1-Chlorooctane	59.1		mg/kg	50.0		118	70-130			
Surrogate: 1-Chlorooctadecane	50.0		"	50.0		100	70-130			

Environmental Lab of Texas

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Page 4 of 7

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

Project: Pogo/ Cotton Draw TB #2  
 Project Number: 2589  
 Project Manager: Ike Tavaréz

Fax: (432) 682-3946

Reported:  
 03/17/06 10:28

**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 EC61406 - Solvent Extraction (GC)**

**Matrix Spike Dup (EC61406-MSD1)**

Source: 6C13017-17

Prepared & Analyzed: 03/14/06

Carbon Ranges C6-C12	565	10.0	mg/kg dry	534	ND	106	75-125	0.705	20	
Carbon Ranges C12-C28	506	10.0	"	534	8.14	93.2	75-125	0.983	20	
Total Hydrocarbon C6-C35	1070	10.0	"	1070	ND	100	75-125	0.930	20	
Surrogate: 1-Chlorooctane	58.6		mg/kg	50.0		117	70-130			
Surrogate: 1-Chlorooctadecane	49.7		"	50.0		99.4	70-130			

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

Project: Pogo/ Cotton Draw TB #2  
 Project Number: 2589  
 Project Manager: Ike Tavarez

Fax: (432) 682-3946  
 Reported:  
 03/17/06 10:28

**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
<b>Batch EC61506 - General Preparation (Prep)</b>										
<b>Blank (EC61506-BLK1)</b> Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	100		%							
<b>Duplicate (EC61506-DUP1)</b> Source: 6C13017-01 Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	93.5		%		93.6			0.107	20	
<b>Duplicate (EC61506-DUP2)</b> Source: 6C13016-02 Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	95.9		%		97.2			1.35	20	
<b>Duplicate (EC61506-DUP3)</b> Source: 6C13016-22 Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	83.1		%		83.6			0.600	20	
<b>Duplicate (EC61506-DUP4)</b> Source: 6C13016-42 Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	95.4		%		95.7			0.314	20	
<b>Duplicate (EC61506-DUP5)</b> Source: 6C13016-62 Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	81.3		%		80.2			1.36	20	
<b>Duplicate (EC61506-DUP6)</b> Source: 6C13016-82 Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	85.6		%		86.7			1.28	20	
<b>Duplicate (EC61506-DUP7)</b> Source: 6C14004-03 Prepared: 03/14/06 Analyzed: 03/15/06										
% Solids	98.8		%		99.0			0.202	20	

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

Project: Pogo/ Cotton Draw TB #2  
Project Number: 2589  
Project Manager: Ike Tavaraz

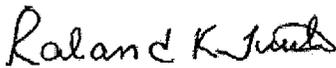
Fax: (432) 682-3946

Reported:  
03/17/06 10:28

### Notes and Definitions

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:



Date:

3/17/2006

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.

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Environmental Lab of Texas

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# 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: **POGO** SITE MANAGER: **Ike Tavaraz**

PROJECT NO.: **2589** PROJECT NAME: **#060 / Cotton draw TD #2**

LAB I.D. NUMBER: **613019** DATE: **3/19/06** TIME: **5** MATRIX: **S** COMP: **X** GRAB: **X** SAMPLE IDENTIFICATION: **LA9 county - NM**

LAB I.D. NUMBER: **-01** DATE: **3/19/06** TIME: **5** MATRIX: **S** COMP: **X** GRAB: **X** SAMPLE IDENTIFICATION: **AH-4 (0-1.0') BED**

LAB I.D. NUMBER: **-02** DATE: **3/19/06** TIME: **5** MATRIX: **S** COMP: **X** GRAB: **X** SAMPLE IDENTIFICATION: **AH-5 (0-1.0') BED**

ANALYSIS REQUEST (Circle or Specify Method No.)	DATE	TIME	RECEIVED BY: (Signature)									
PCB's 8080/808												
GCMS Vol. 8240/8260/824												
GCMS Semi. Vol. 8270/826												
PCB's 8080/808												
Post. 808/808												
BOD, TSS, pH, TDS, Chloride												
Gamma Spec.												
Alpha Beta (Air)												
PbM (Asbestos)												

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Post. 808/808												
BOD, TSS, pH, TDS, Chloride												
Gamma Spec.												
Alpha Beta (Air)												
PbM (Asbestos)												

DATE: **3/19/06** TIME: **4:00** RECEIVED BY: **Ike Tavaraz**

REMARKS: **402 glass 4.0°C w/ labels**

PROJECT MANAGER REMAINS YELLOW COPY - RETURN ORIGINAL COPY TO HIGHLANDER ENVIRONMENTAL CORP. - ACCOUNTING RECEIVES GOLD COPY.

**Environmental Lab of Texas**  
**Variance / Corrective Action Report – Sample Log-In**

Client: Highlander  
 Date/Time: 3/13/04 4:00  
 Order #: 6C13019  
 Initials: ck

**Sample Receipt Checklist**

	Yes	No	
Temperature of container/cooler?			4.0 C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Custody Seals intact on shipping container/cooler?	<input type="checkbox"/>	<input type="checkbox"/>	<del>Not present</del>
Custody Seals intact on sample bottles?	<input type="checkbox"/>	<input type="checkbox"/>	<del>Not present</del>
Chain of custody present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Chain of custody agrees with sample label(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Container labels legible and intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Samples in proper container/bottle?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Samples properly preserved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample bottles intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VOC samples have zero headspace?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable

Other observations:

\_\_\_\_\_

\_\_\_\_\_

**Variance Documentation:**

Contact Person: - \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_  
 Regarding: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Corrective Action Taken:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**APPENDIX C**

**State of New Mexico Oil Conservation Division**

**C-141 Forms**

District I - (505) 393-6161  
 P. O. Box 1980  
 Hobbs, NM 88241-1980  
 District II - (505) 748-1283  
 811 South First  
 Artesia, NM 88210  
 District III - (505) 334-6178  
 1000 Rio Brazos Road  
 Aztec, NM 87410  
 District IV - (505) 827-7131

*PAT ELLIS*  
**State of New Mexico**  
**Energy Minerals and Natural Resources Department**  
**Oil Conservation Division**  
 2040 South Pacheco Street  
 Santa Fe, New Mexico 87505  
 (505) 827-7131

Form C-141  
 Originated 2/13/97

Submit 2 copies to  
 Appropriate District  
 Office in accordance  
 with Rule 116 on  
 back side of form

**Release Notification and Corrective Action**  
**OPERATOR**

Initial Report  Final Report

Name <i>Pogo Producing Company</i>		Contact <i>PAT ELLIS</i>
Address <i>P.O. Box 10340 Midland TX 79702</i>		Telephone No. <i>432-685-8100</i>
Facility Name <i>Cotton Draw unit Tank Battery #2</i>		Facility Type <i>TANK BATTERY #2</i>
Surface Owner <i>BLM</i>	Mineral Owner <i>BLM</i>	Lease No. <i>91-005247</i>

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	<i>15</i>	<i>255</i>	<i>32E</i>					<i>LEA</i>

*NE 1/4 of SW 1/4*

**NATURE OF RELEASE**

Type of Release <i>Water &amp; Oil</i>	Volume of Release <i>35 Water 5 Oil</i>	Volume Recovered <i>18 Water 1/2 Oil</i>
Source of Release <i>TANK</i>	Date and Hour of Occurrence <i>2/18/06 2:00 PM</i>	Date and Hour of Discovery <i>2/18/06 2:00 PM</i>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <i>ON CALL PERSON</i>	
By Whom? <i>CLAY OSBORN</i>	Date and Hour <i>2/18/06 2:40 PM</i>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impinging the Watercourse	

If a Watercourse was Impacted, Describe Fully (Attach Additional Sheets If Necessary)

Describe Cause of Problem and Remedial Action Taken (Attach Additional Sheets If Necessary)

*VAIVE Plug & set up. RAN TANK OVER. Pump & valve Replaced.  
 Called BLM-Kathy Houston @ 2:40 PM.*

Describe Area Affected and Cleanup Action Taken (Attach Additional Sheets If Necessary)

*one TRUCK Pick up Tank Fluid. Cleanup is on going.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature <i>Clay Osborn</i>	Approved by District Supervisor		
Printed Name <i>CLAY OSBORN</i>	Approval Date:	Expiration Date:	
Title <i>FIELD FOREMAN</i>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: <i>2/18/06</i>	Phone: <i>505-671-0129</i>		

## SITE INFORMATION

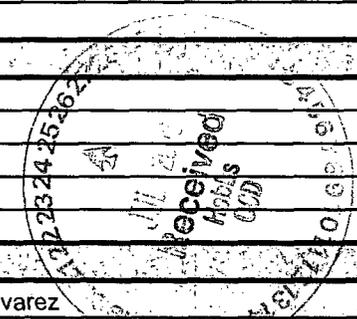
### ASSESSMENT & CLOSURE REPORT

**General Site Information:**

Site:	Cotton Draw Unit Tank Battery #2
Company:	Pogo Producing Company
Section, Township and Range	Section 15, Township 25S, Range 32E
Unit Letter:	K
Lease Number:	91-005247
County:	Lea
GPS:	32-07-06.1 N / 103-41-03.2 W
Surface Owner:	BLM
Mineral Owner:	BLM
Directions:	From Jal, take Highway 128 west for 30 miles. Turn left on CR1 and travel south for 6.2 miles. Turn right and travel west for 0.6 miles. Turn left and travel south 0.3 miles to facility

**Release Data:**

Date Released:	2/18/2006
Type Release:	Oil & Water
Source of Contamination:	Valve plugged up, and tank ran over
Fluid Released:	5 barrels oil / 35 barrels water
Fluids Recovered:	1/2 barrel oil / 18 barrels water


**Official Communication:**

Name:	Pat Ellis	Don Riggs	Ike Tavarez
Company:	Pogo Producing Company	Pogo Producing Company	Highlander Environmental Corp.
Address:	300 N. Marienfeld St.	5 Greenway Plaza, Suite 2700	1910 N. Big Spring
P.O. Box	Box 10340		
City:	Midland Texas, 79701-7340	Houston, Texas 77046	Midland, Texas
Phone number:	(432) 685-8100	(713) 297-5045	(432) 682- 4559
Email:	EllisP@pogoproducing.com	riggsd@pogoproducing.com	itavarez@hec-enviro.com

**Ranking Criteria**

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	0
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
<b>Total Ranking Score:</b>	<b>0</b>	

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised June 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company: Pogo Producing Company	Contact: Pat Ellis
Address: 300 North Marienfeld, Suite 600, Midland TX 79701	Telephone No. (432) 685-8100
Facility Name: Cotton Draw Unit Tank Battery #2	Facility Type: Tank Battery
Surface Owner BLM	Mineral Owner BLM
Lease No. 91-005247	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North Line	Feet from the	East Line	County
K	15	25S	32E					Lea

300'

**NATURE OF RELEASE**

Type of Release Oil and produced water	Volume of Release 5 bbl oil, 35 bbl water	Volume Recovered 1/2 BO, 18 BW
Source of Release: Valve plugged up and tank ran over.	Date and Hour of Occurrence 2:00 pm, 2/18/06	Date and Hour of Discovery 2:00 pm, 2/18/06
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? On call pager	
By Whom? Clay Osborn	Date and Hour 2:40 pm, 2/18/06	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* A valve plugged up causing a tank to overflow. A vacuum truck was called in to pick up fluids. The valve and pump were replaced.		
Describe Area Affected and Cleanup Action Taken.* A vacuum truck picked up the fluids, and the valve and pump were replaced. The site was assessed by Highlander Environmental Corp. Impacted soils were removed by hand digging and with a backhoe. Excavated soils were hauled to Sundance Services for disposal. Grab-type confirmation samples were collected.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

**OIL CONSERVATION DIVISION**

Signature: <i>Pat Ellis</i>	Approved by District Supervisor:	
Printed Name: Pat Ellis	Approval Date:	Expiration Date:
Title: Division Environmental Safety & Health Supervisor	Conditions of Approval:	
E-mail Address: <a href="mailto:EllisP@pogoproducing.com">EllisP@pogoproducing.com</a>	Attached <input type="checkbox"/>	
Date: 6-15-06 Phone: (432) 685-8100		

\* Attach Additional Sheets If Necessary

facility - pPACO628634694  
incident - nPACO628634780  
application - pPACO628637018

IRP-1000