1R - 462

WORKPLAN

07 / 11 / 2005

IR-462

Highlander Environmental Corp.

Midland, Texas

July 11, 2005

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

Re: Addendum To "Subsurface Investigation and Work Plan for the Pogo Producing Company, E.C. Hill "A, B and C" Tank Battery, Located in Section 27, Township 23 South, Range 37 East, Lea County New Mexico", dated February 8, 2005.

Dear Mr. Price:

Subsequent to our telephone conferences on July 1, July 5, and July 6, 2005, the following addendum is submitted to address certain concerns the New Mexico Oil Conservation Division (NMOCD) had with the current workplan for capping the site. The concerns were as follows:

1. There is a concern that the footprint for the 40 mil liner may not be sufficient to adequately cover all soils in areas where TPH values exceed 1000 mg/kg. In particular, the areas northwest of the excavated areas (BH-7) and the area north of BH-1 require further delineation.

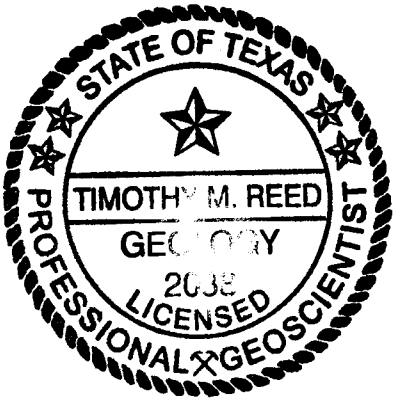
   Highlander supervised the placement of one additional soil boring labeled BH-12 (MW-2) on May 24, 2005. TPH concentrations were not detected at or above laboratory reporting limits of 10 mg/kg for any sample, with the exception of the 10'-12' sample, which had a TPH concentration of 18.4 mg/kg. An additional soil boring is proposed north of BH-1 to further delineate the north.

2. There is a concern that there are excessive residual BTEX concentrations in the deep subsurface soils (BH-1 and BH-4), which, if exposed to groundwater fluctuations, (smear zone) could be a continued source for groundwater impact.

   In order to adequately address residual BTEX concentrations in the soil and capillary fringe above the water table, Highlander proposes to install and operate, as part of the groundwater remediation system, a limited Soil Vapor Extraction (SVE) system or equivalent type of treatment. This system will be installed after the 40 mil cap has been installed. The cap should serve to enhance the soil

remediation system. At some time prior to closure of the Site, Highlander will demonstrate that residual BTEX concentrations in the smear zone meet or exceed regulatory guidelines.

If you have any question or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

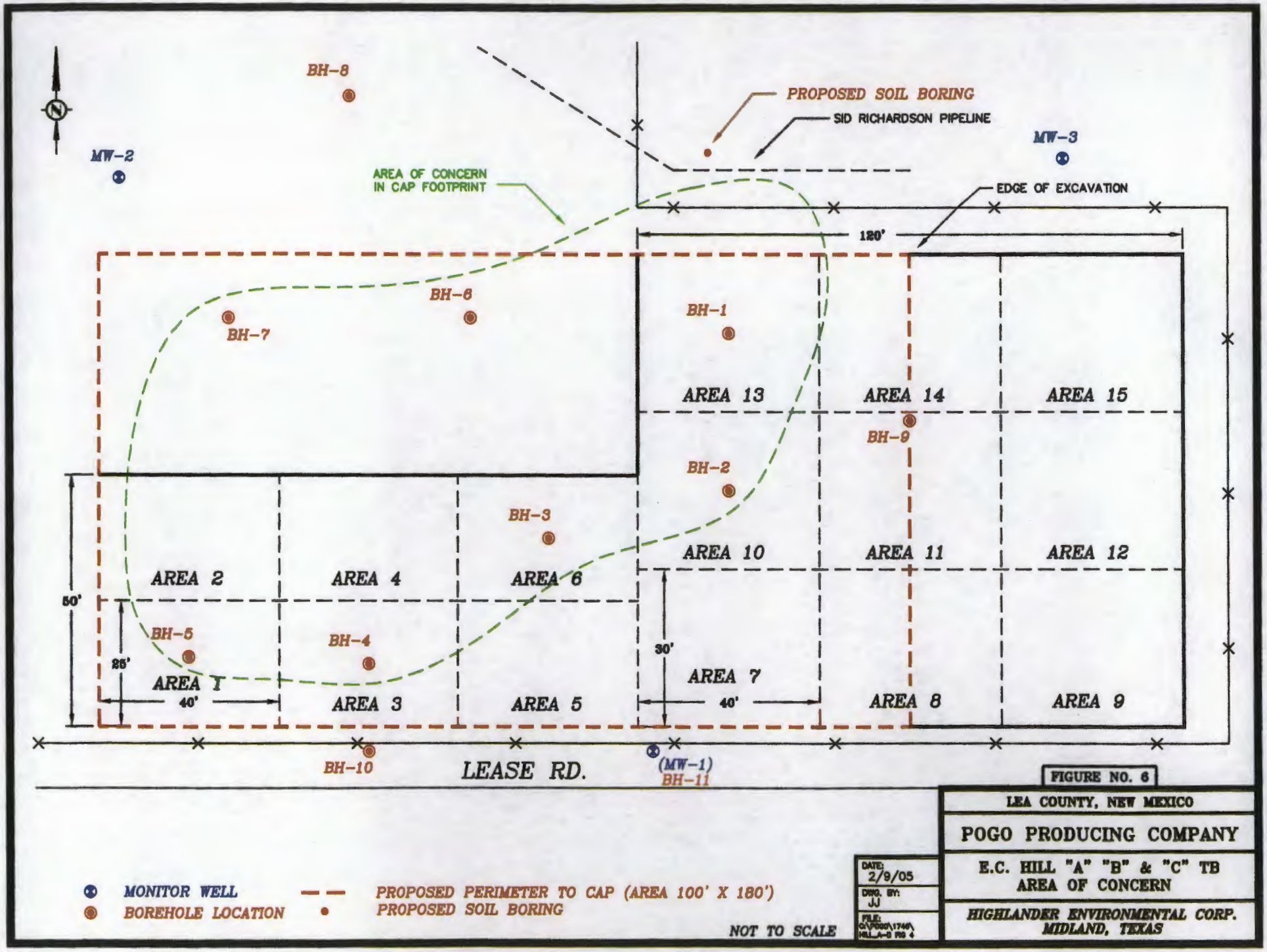


Respectfully submitted,
Highlander Environmental Corp.

Timothy M. Reed, P.G.
Vice President

cc: Rex Jasper –Pogo
Don Riggs – Pogo

FIGURES


BH-8
MW-2
PROPOSED SOIL BORING
SID RICHARDSON PIPELINE
MW-3
AREA OF CONCERN
IN CAP FOOTPRINT
EDGE OF EXCAVATION
120'
BH-6
BH-7
BH-1
AREA 13
AREA 14
AREA 15
BH-9
BH-2
BH-3
AREA 10
AREA 11
AREA 12
AREA 2
AREA 4
AREA 6
50'
BH-5
BH-4
25'
30'
AREA 1
AREA 7
40'
AREA 3
AREA 5
40'
AREA 8
AREA 9
BH-10
LEASE RD.
(MW-1)
BH-11
MONITOR WELL
BOREHOLE LOCATION
PROPOSED PERIMETER TO CAP (AREA 100' X 180')
PROPOSED SOIL BORING
NOT TO SCALE
FIGURE NO. 6
LEA COUNTY, NEW MEXICO
POGO PRODUCING COMPANY
E.C. HILL "A" "B" & "C" TB
AREA OF CONCERN
HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS
DATE: 2/9/05
DRG. BY: JJ

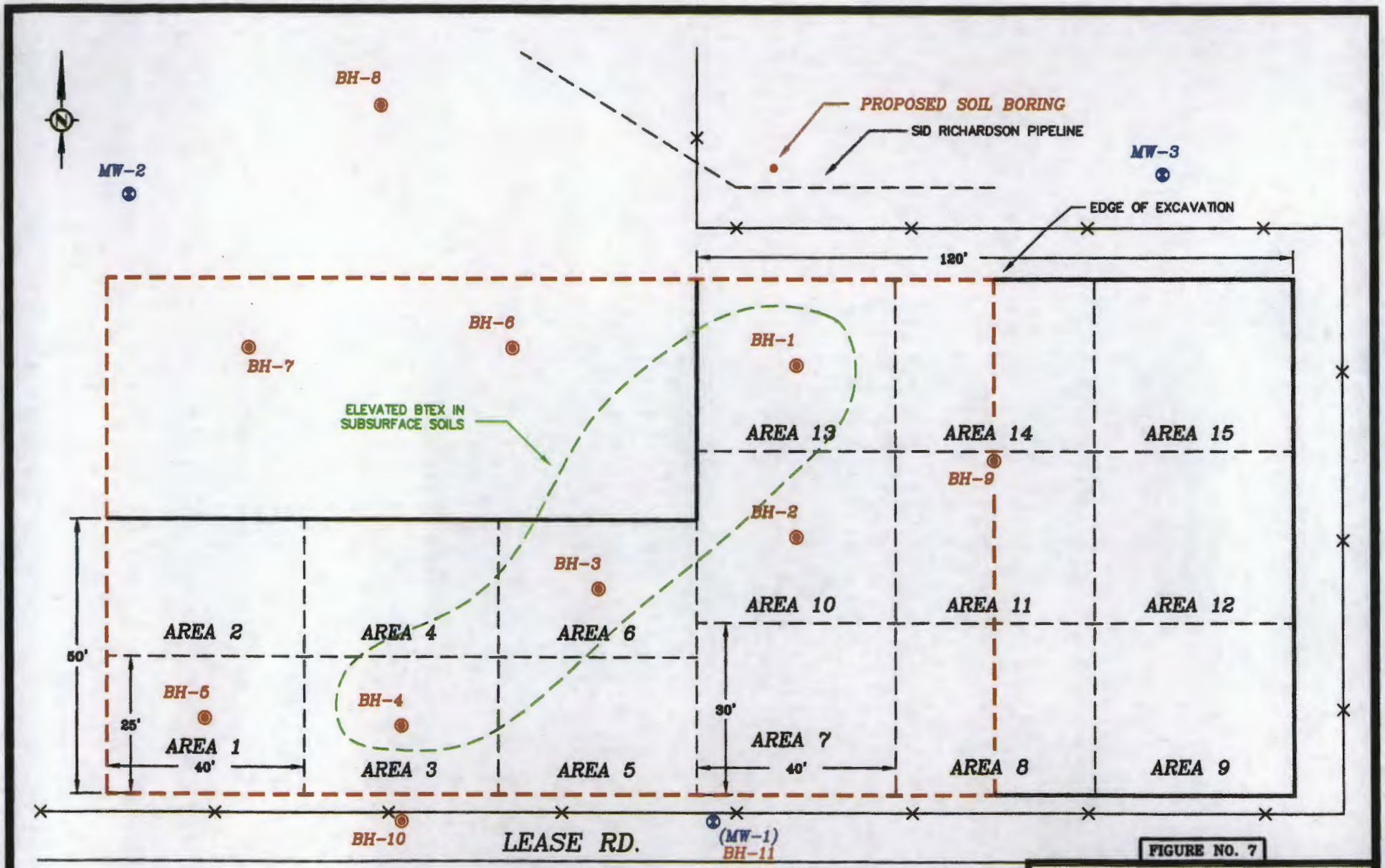


FIGURE NO. 7

LEA COUNTY, NEW MEXICO

POGO PRODUCING COMPANY

E.C. HILL "A" "B" & "C" TB
ELEVATED BTEX

DATE: 2/9/05
DRG. BY: JJ
FILE: C:\POGO\1740\HILL_A-0 FIG 4

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

APPENDIX A

Analytical Data

ENVIRONMENTAL 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/ Arch E.C. Hill TB

Project Number: 1746

Location: Lea County, NM

Lab Order Number: 5E27003

Report Date: 06/01/05

Highlander Environmental Corp.	Project: Pogo/ Arch E.C. Hill TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 1746	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	06/01/05 08:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-12 (10-11)	5E27003-02	Soil	05/24/05 00:00	05/26/05 17:20
BH-12 (20-21)	5E27003-03	Soil	05/24/05 00:00	05/26/05 17:20
BH-12 (35-36)	5E27003-04	Soil	05/24/05 00:00	05/26/05 17:20

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

Highlander Environmental Corp.	Project: Pogo/ Arch E.C. Hill TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 1746	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	06/01/05 08:34

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BH-12 (10-11) (5E27003-02) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EE52514	05/27/05	05/31/05	EPA 8015M	
Diesel Range Organics >C12-C35	**18.4**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**18.4**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*86.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*104 %*	*70-130*		"	"	"	"	
BH-12 (20-21) (5E27003-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EE52705	05/27/05	05/27/05	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		*94.3 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.5 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EE52514	05/27/05	05/28/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*78.8 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*74.0 %*	*70-130*		"	"	"	"	
BH-12 (35-36) (5E27003-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EE52705	05/27/05	05/27/05	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		*84.9 %*	*80-120*		"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EE52514	05/27/05	05/28/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*84.4 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*83.8 %*	*70-130*		"	"	"	"	

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1910 N. Big Spring St.	Project Number: 1746	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	06/01/05 08:34

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BH-12 (10-11) (5E27003-02) Soil									
% Moisture	**5.4**	0.1	%	1	EE53106	05/27/05	05/31/05	% calculation	
BH-12 (20-21) (5E27003-03) Soil									
% Moisture	**4.2**	0.1	%	1	EE53106	05/27/05	05/31/05	% calculation	
BH-12 (35-36) (5E27003-04) Soil									
% Moisture	**2.3**	0.1	%	1	EE53106	05/27/05	05/31/05	% calculation	

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Highlander Environmental Corp.	Project: Pogo/ Arch E.C. Hill TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 1746	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	06/01/05 08:34

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE52514 - Solvent Extraction (GC)										
Blank (EE52514-BLK1)				Prepared: 05/25/05 Analyzed: 05/28/05						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*38.8*		*mg kg*	*50.0*		*77.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*41.9*		"	*50.0*		*83.8*	*70-130*			
LCS (EE52514-BS1)				Prepared: 05/25/05 Analyzed: 05/28/05						
Gasoline Range Organics C6-C12	423	10.0	mg/kg wet	500		84.6	75-125			
Diesel Range Organics >C12-C35	596	10.0	"	500		119	75-125			
Total Hydrocarbon C6-C35	1020	10.0	"	1000		102	75-125			
Surrogate: 1-Chlorooctane	*41.2*		*mg kg*	*50.0*		*82.4*	*70-130*			
Surrogate: 1-Chlorooctadecane	*40.1*		"	*50.0*		*80.2*	*70-130*			
Calibration Check (EE52514-CCV1)				Prepared: 05/25/05 Analyzed: 05/27/05						
Gasoline Range Organics C6-C12	490		mg/kg	500		98.0	80-120			
Diesel Range Organics >C12-C35	575		"	500		115	80-120			
Total Hydrocarbon C6-C35	1070		"	1000		107	80-120			
Surrogate: 1-Chlorooctane	*46.2*		"	*50.0*		*92.4*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.6*		"	*50.0*		*97.2*	*70-130*			
Matrix Spike (EE52514-MS1)	**Source: 5E27003-02**			Prepared: 05/27/05 Analyzed: 05/28/05						
Gasoline Range Organics C6-C12	443	10.0	mg/kg dry	529	ND	83.7	75-125			
Diesel Range Organics >C12-C35	532	10.0	"	529	18.4	97.1	75-125			
Total Hydrocarbon C6-C35	976	10.0	"	1060	18.4	90.3	75-125			
Surrogate: 1-Chlorooctane	*47.1*		*mg kg*	*50.0*		*94.2*	*70-130*			
Surrogate: 1-Chlorooctadecane	*42.5*		"	*50.0*		*85.0*	*70-130*			
Matrix Spike Dup (EE52514-MSD1)	**Source: 5E27003-02**			Prepared: 05/27/05 Analyzed: 05/28/05						
Gasoline Range Organics C6-C12	450	10.0	mg/kg dry	529	ND	85.1	75-125	1.57	20	
Diesel Range Organics >C12-C35	545	10.0	"	529	18.4	99.5	75-125	2.41	20	
Total Hydrocarbon C6-C35	995	10.0	"	1060	18.4	92.1	75-125	1.93	20	
Surrogate: 1-Chlorooctane	*48.4*		*mg kg*	*50.0*		*96.8*	*70-130*			
Surrogate: 1-Chlorooctadecane	*44.6*		"	*50.0*		*89.2*	*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
Batch EE52705 - EPA 5030C (GC)										
Blank (EE52705-BLK1)				Prepared & Analyzed: 05/27/05						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*91.1*		*ug kg*	*100*		*91.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*87.3*		"	*100*		*87.3*	*80-120*			
LCS (EE52705-BS1)				Prepared & Analyzed: 05/27/05						
Benzene	99.8		ug/kg	100		99.8	80-120			
Toluene	92.5		"	100		92.5	80-120			
Ethylbenzene	92.9		"	100		92.9	80-120			
Xylene (p/m)	205		"	200		102	80-120			
Xylene (o)	101		"	100		101	80-120			
Surrogate: a,a,a-Trifluorotoluene	*111*		"	*100*		*111*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*120*		"	*100*		*120*	*80-120*			
Calibration Check (EE52705-CCV1)				Prepared & Analyzed: 05/27/05						
Benzene	97.9		ug/kg	100		97.9	80-120			
Toluene	88.0		"	100		88.0	80-120			
Ethylbenzene	83.3		"	100		83.3	80-120			
Xylene (p/m)	180		"	200		90.0	80-120			
Xylene (o)	84.1		"	100		84.1	80-120			
Surrogate: a,a,a-Trifluorotoluene	*106*		"	*100*		*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*87.3*		"	*100*		*87.3*	*80-120*			
Matrix Spike (EE52705-MS1)	**Source: 5E27003-04**			Prepared & Analyzed: 05/27/05						
Benzene	97.1		ug/kg	100	ND	97.1	80-120			
Toluene	90.9		"	100	ND	90.9	80-120			
Ethylbenzene	89.6		"	100	ND	89.6	80-120			
Xylene (p/m)	196		"	200	ND	98.0	80-120			
Xylene (o)	91.3		"	100	ND	91.3	80-120			
Surrogate: a,a,a-Trifluorotoluene	*104*		"	*100*		*104*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*101*		"	*100*		*101*	*80-120*			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE52705 - EPA 5030C (GC)										
Matrix Spike Dup (EE52705-MSD1)	**Source: 5E27003-04**			Prepared & Analyzed: 05/27/05						
Benzene	100		ug/kg	100	ND	100	80-120	2.94	20	
Toluene	93.1		"	100	ND	93.1	80-120	2.39	20	
Ethylbenzene	92.8		"	100	ND	92.8	80-120	3.51	20	
Xylene (p/m)	205		"	200	ND	102	80-120	4.00	20	
Xylene (o)	96.4		"	100	ND	96.4	80-120	5.43	20	
Surrogate: a,a,a-Trifluorotoluene	*104*		"	*100*		*104*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*104*		"	*100*		*104*	*80-120*			

Highlander Environmental Corp.	Project: Pogo/ Arch E.C. Hill TB	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 1746	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	06/01/05 08:34

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE53106 - General Preparation (Prep)										
Blank (EE53106-BLK1)				Prepared: 05/27/05 Analyzed: 05/31/05						
% Moisture	ND	0.1	%							
Duplicate (EE53106-DUP1)	**Source: 5E27001-01**			Prepared: 05/27/05 Analyzed: 05/31/05						
% Moisture	1.2	0.1	%		1.1			8.70	20	

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1910 N. Big Spring St.	Project Number: 1746	**Reported:**
Midland TX, 79705	Project Manager: Ike Tavarez	06/01/05 08:34

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: 6/1/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

Analysis Request and Chain of Custody Record

PAGE: 1 OF: 1

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

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

CLIENT NAME: Pogo Producing. SITE MANAGER: Mike Tavarez

PROJECT NO.: 1746 PROJECT NAME: Pogo / Arch-E.C. Hill TB Loco. NM.

SEQ 7003

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	8021 MTBE 8020/602	8021 BTEX 8020/602	TPH TX1005 (Ext) 418.1 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	PCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
001	5/24/05		S		G	BH-12 (5-6)	1				X				X	X													
002	5/24/05		S		G	BH-12 (10-11)	1				X				X														
003	5/24/05		S		G	BH-12 (20-21)	1				X			X	X														
004	5/24/05		S		G	BH-12 (35-36')	1				X			X	X														

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 5/26/05 Time: 5:00 RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Sign) Mike Tavarez Date: Time:

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

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

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

RECEIVING LABORATORY: ECT ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:

RECEIVED BY: (Signature) DATE: 5-26-05 TIME: 1720

HIGHLANDER CONTACT PERSON: Mike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: Ice 3.5°C

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

REMARKS: 4oz label/seal

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

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

Client: Highlander

Date/Time: 5/27/05 8:20

Order #: 5E27003

Initials: CK

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	3.5 C
Shipping container/cooler in good condition?	Yes	No	
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	Yes	No	Not present
Chain of custody present?	Yes	No	
Sample Instructions complete on Chain of Custody?	Yes	No	
Chain of Custody signed when relinquished and received?	Yes	No	
Chain of custody agrees with sample label(s)	Yes	No	
Container labels legible and intact?	Yes	No	
Sample Matrix and properties same as on chain of custody?	Yes	No	
Samples in proper container/bottle?	Yes	No	
Samples properly preserved?	Yes	No	
Sample bottles intact?	Yes	No	
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	Yes	No	
Sufficient sample amount for indicated test?	Yes	No	
All samples received within sufficient hold time?	Yes	No	
VOC samples have zero headspace?	Yes	No	Not Applicable

Other observations:

_____

_____

_____

Variance Documentation:

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

Regarding:

_____

_____

_____

Corrective Action Taken:

_____

_____

_____

_____

_____

_____

_____

_____