



Highlander Environmental Corp.

Midland, Texas

May 24, 2007

JUN 18 2007
OCD-ARTESIA

Mr. Mike Bratcher
Environmental Bureau
Oil Conservation Division- District 2
1301 W. Grand Avenue
Artesia, New Mexico 88210

RE: Assessment and Closure Plan for a Spill at the Pogo Producing Company, Marine 19 Federal #1 Well, Located in Unit Letter E, Section 19, Township 25 South, Range 27 East, Eddy County, New Mexico.

Dear Mr. Bratcher:

Highlander Environmental Corp. (Highlander) was contacted by Pogo Producing Company (Pogo) to assess a spill at the Marine 19 Federal #1 Well, located in Unit Letter E Section 19, Township 25 South, Range 27 East, Eddy County, New Mexico (Site). The spill location coordinates are N 32° 07' 06" W 104° 14' 01". The State of New Mexico C-141 (Initial) is shown 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 March 21, 2007, when lightning struck a fiberglass water tank. The tank exploded releasing approximately 200 barrels of produced water inside a line tank battery facility. A portion of the berm washed out in the ensuing heavy rainfall allowing a produced water rainwater mixture to spill out onto the well pad. All free fluid was picked up with a vacuum truck. Due to the heavy volume of rainwater, a total of 780 barrels of fluid was picked up. The spill was confined to the well pad in a 200' x 270' area.

Groundwater and Regulatory

The New Mexico State Engineer's Office database does not show any wells in the vicinity of this facility. In order to evaluate the depth of water at this site, Highlander previously supervised the installation of a temporary well to a total depth of 80' below ground surface. After allowing the well to stand for approximately 8 days, the well was checked and found to be dry. 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). As the depth to water is greater than 80', but may be less than 100', the proposed RRAL for TPH is 1000 mg/kg.


Assessment and Results

On April 2, 2007, Highlander personnel inspected and sampled the spill area. A total of five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils. Soil samples were collected at 1 foot intervals and submitted for analysis of TPH by EPA method 8015 modified and chloride by EPA method 300.0. Selected samples were analyzed for BTEX by EPA method 8021B. Laboratory results indicated no TPH or BTEX impact at or above the RRAL and chloride was only found above 250 mg/kg in AH-2 at 0-1.0' (283 mg/kg) and 1.0'-1.5' (1050 mg/kg). Chloride concentrations declined to 236 mg/kg in the 2.0'-2.5' sample. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix B. The auger hole locations are shown on Figure 2. The laboratory results of the sampling are summarized in Table 2.

Based on the sample data, it appears that there is a relatively small area of residual chloride impact, confined to the well pad, which does not pose a potential future threat to groundwater. As such, Pogo requests closure of this site. A copy of 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, please call.

Highlander Environmental Corp.


Timothy M. Reed, P.G.
Vice President

cc: Don Riggs – Pogo Producing
Pat Ellis – Pogo Producing



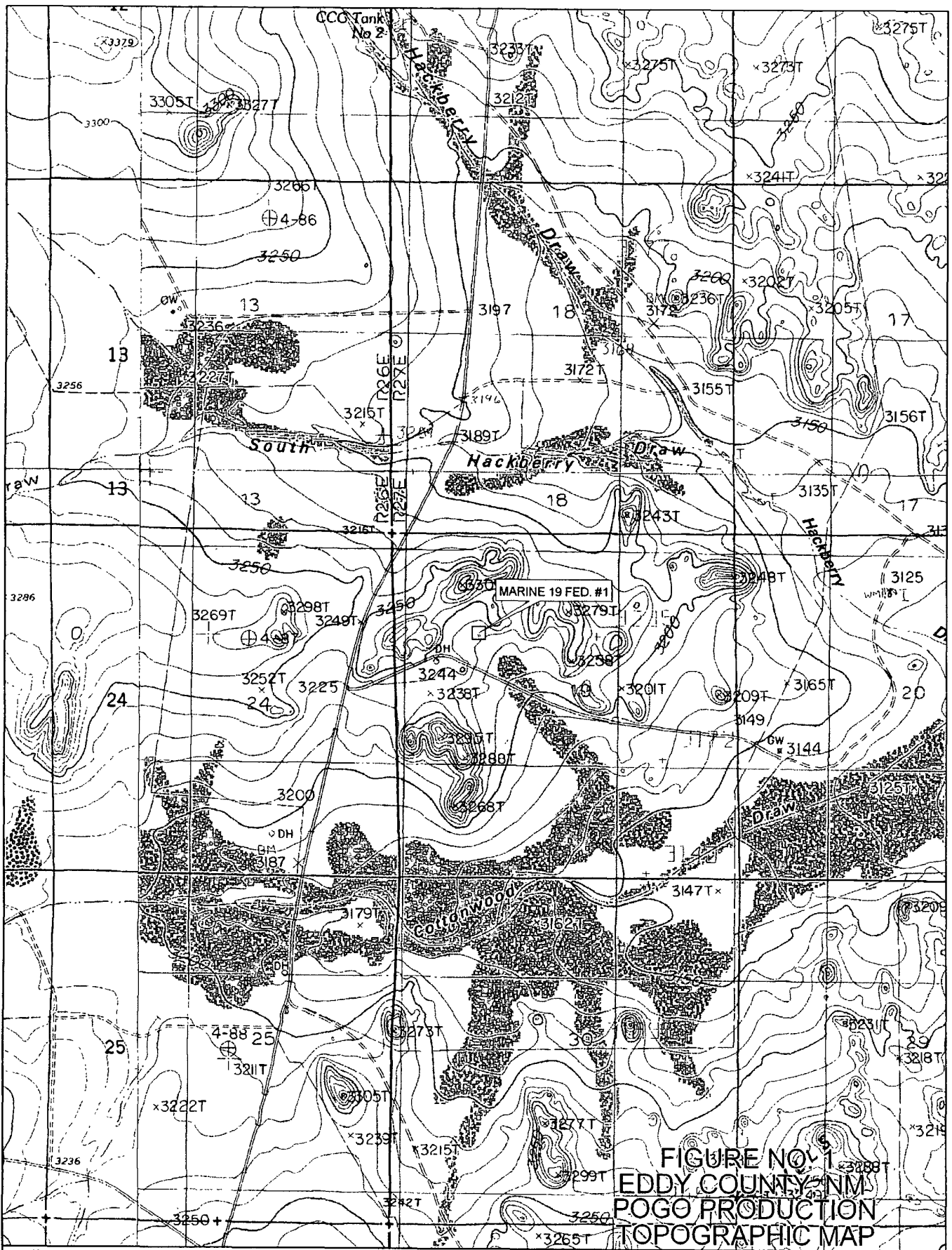
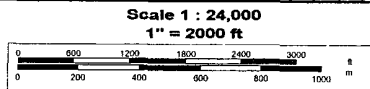


FIGURE NO. 1
 EDDY COUNTY, NM
 POGO PRODUCTION
 TOPOGRAPHIC MAP



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 www.delorme.com



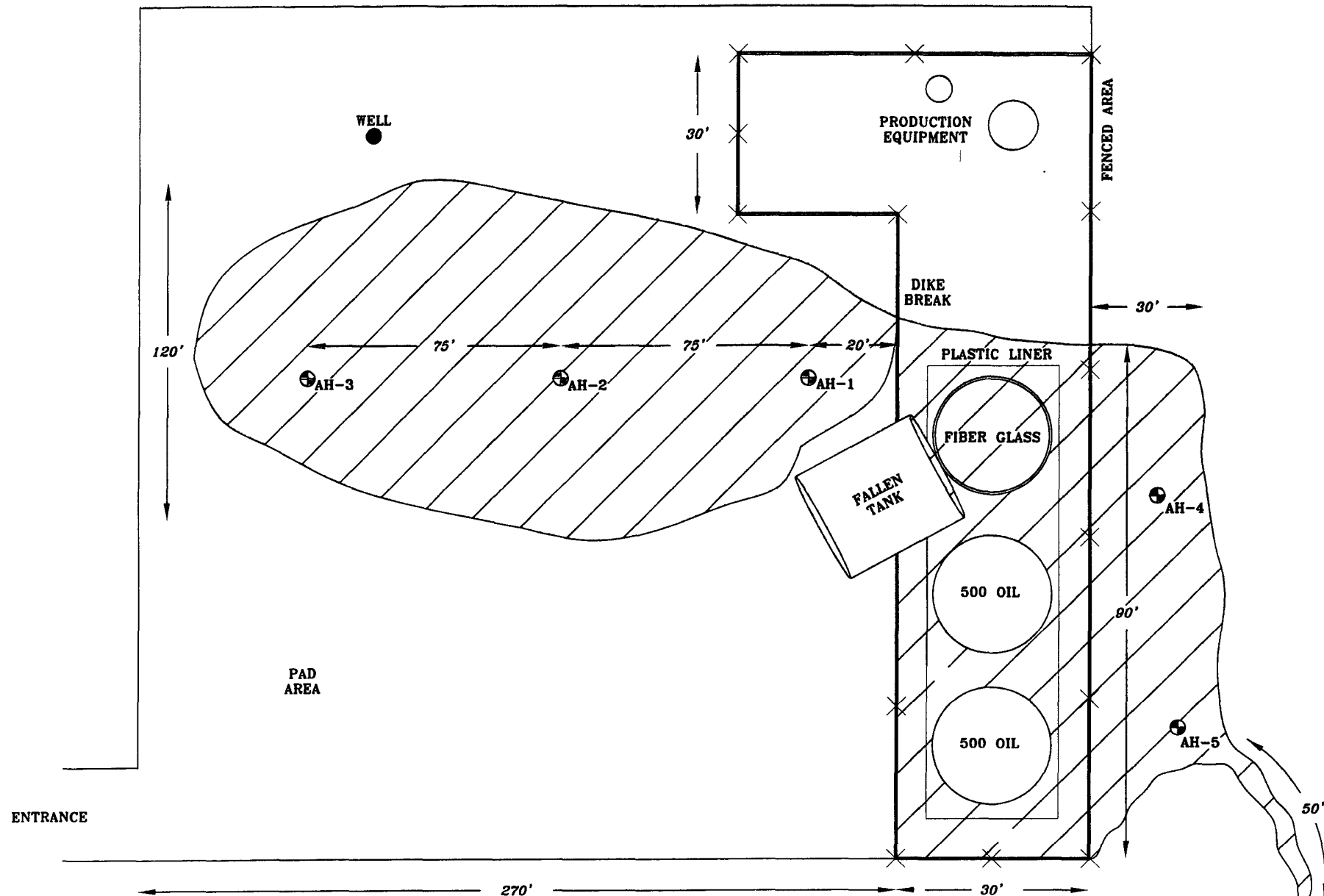


FIGURE NO. 2

EDDY COUNTY, NEW MEXICO

POGO PRODUCING COMPANY
MARINE 19 FED. #1 TB

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE:
5/4/07
OWN. BY:
RC
FILE:
C:\P000\ MARINE 19 FED #1

NOT TO SCALE

POGO PRODUCING COMPANY

Marine 19 Fed. #1

Eddy County, NM

Sample ID	Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			C6-C12	C12-C35	Total					
#1	4/2/2007	0-1	<1.00	<50.0	<50.0					221
	4/2/2007	1-1.5	-	-	-					184
#2	4/2/2007	0-1	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	283
	4/2/2007	1-1.5	-	-	-					1,050
		2-2.5	-	-	-					236
#3	4/2/2007	0-1	<1.00	<50.0	<50.0					188
	4/2/2007	1-1.5	-	-	-					214
#4	4/2/2007	0-1	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	236.0
	4/2/2007	1-1.5	-	-	-					<50.0
#5	4/2/2007	0-1	<1.00	<50.0	<50.0					78
	4/2/2007	1-1.5	-	-	-					<50.0

(-) not analyzed

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1364 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

Form C-144
June 1, 2004

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

For drilling and production facilities, submit to
appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe
office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: **Latigo Petroleum, Inc.** Telephone: **(432) 685-8100** e-mail address: **Pat Ellis (EllisP@pogoproducing.com)**

Address: **300 N. Marienfeld St., Box 103040, Midland Texas, 79701-7340**

Facility or well name: **Marine 19 Federal #1** API #: **30-01533981** U/L or Qtr/Qtr Lot 2 Sec 19, T25S, R27E

County: **Eddy Co.** Latitude **32°07'06"** Longitude **104°14'01"** NAD: 1927 ☐ 1983 ☐

Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit

Type: Drilling ☒ Production ☐ Disposal ☐

Workover ☐ Emergency ☐

Lined ☒ Unlined ☐

Liner type: **Synthetic** ☒ Thickness **12 mil** Clay ☐

Pit Volume **18M** bbl

Below-grade tank

Volume: _____ bbl Type of fluid: _____

Construction material: _____

Double-walled, with leak detection? Yes ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)

Less than 50 feet

50 feet or more, but less than 100 feet ☒

100 feet or more

(20 points)

(10 points) 10 points

(0 points)

Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)

Yes

No ☒

(20 points)

(0 points)

Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)

Less than 200 feet

200 feet or more, but less than 1000 feet

1000 feet or more ☒

(20 points)

(10 points)

(0 points)

CORRONWOOD DRAW 1 MILE SOUTHEAST

Ranking Score (Total Points)

10

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☒ offsite ☐ If offsite, name of facility _____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered. No ☒ Yes ☐ If yes, show depth below ground surface _____ ft. and attach sample results.

(5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

On April 2, 2007, Highlander Environmental Corp. supervised the installation of (1) temporary monitor well on the well pad. The temporary well was installed to a total depth of 80.0' below surface. The construction log is attached. No groundwater was encountered during the installation of the well.

On April 10, 2007, Highlander was onsite to measure the depth to groundwater in the temporary well. No groundwater was encountered in the well.

The temporary well was dry.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date

4-26-07

Printed Name/Title

PATRICK L. ELLIS

Signature

Patrick L. Ellis

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval

Printed Name/Title

Signature

Date:

APPENDIX B

Lab Analysis

Summary Report

Ike Tavarez
Highlander Environmental Services
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: April 17, 2007

Work Order: 7040533



Project Location: Eddy County, NM
Project Name: POGO-Marine 19 Fed. #1
Project Number: 2962

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
120911	#2 0-1	soil	2007-04-02	00:00	2007-04-05
120916	#4 0-1	soil	2007-04-02	00:00	2007-04-05

Sample - Field Code	BTEX				MTBE
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	MTBE (mg/Kg)
120911 - #2 0-1	<0.0100	<0.0100	<0.0100	<0.0100	
120916 - #4 0-1	<0.0100	<0.0100	<0.0100	<0.0100	

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft Worth, Texas 76132 817•201•5260
E-Mail lab@traceanalysis.com

Analytical and Quality Control Report

Ike Tavarez
Highlander Environmental Services
1910 N Big Spring Street
Midland, TX, 79705

Report Date: April 17, 2007

Work Order: 7040533




Project Location: Eddy County, NM
Project Name: POGO-Marine 19 Fed #1
Project Number: 2962

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
120911	#2 0-1	soil	2007-04-02	00:00	2007-04-05
120916	#4 0-1	soil	2007-04-02	00:00	2007-04-05

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed

This report consists of a total of 5 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.


Dr Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank

Case Narrative

Samples for project 'POGO-Marine 19 Fed. #1' were received by TraceAnalysis, Inc. on 2007-04-05 and assigned to work order 7040533. Samples for work order 7040533 were received intact without headspace and at a temperature of 4 deg C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
BTEX	S 8021B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 7040533 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 120911 - #2 0-1

Analysis: BTEX
QC Batch: 36283
Prep Batch: 31610

Analytical Method: S 8021B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-13

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.845	mg/Kg	1	1.00	84	26 - 117.8
4-Bromofluorobenzene (4-BFB)		0.956	mg/Kg	1	1.00	96	51.1 - 119.1

Sample: 120916 - #4 0-1

Analysis: BTEX
QC Batch: 36283
Prep Batch: 31610

Analytical Method: S 8021B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-13

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.841	mg/Kg	1	1.00	84	26 - 117.8
4-Bromofluorobenzene (4-BFB)		0.956	mg/Kg	1	1.00	96	51.1 - 119.1

Method Blank (1) QC Batch: 36283

QC Batch: 36283
Prep Batch: 31610

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-13

Analyzed By: ss
Prepared By: ss

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00110	mg/Kg	0.01
Toluene		<0.00150	mg/Kg	0.01
Ethylbenzene		<0.00160	mg/Kg	0.01
Xylene		<0.00410	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.819	mg/Kg	1	1.00	82	62.6 - 117.6
4-Bromofluorobenzene (4-BFB)		0.784	mg/Kg	1	1.00	78	53.9 - 125.1

Laboratory Control Spike (LCS-1)

QC Batch: 36283
Prep Batch: 31610

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-13

Analyzed By: ss
Prepared By: ss

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec	Rec. Limit
Benzene	0.912	mg/Kg	1	1.00	<0.00110	91	68.6 - 123.4
Toluene	0.938	mg/Kg	1	1.00	<0.00150	94	74.6 - 119.3
Ethylbenzene	0.953	mg/Kg	1	1.00	<0.00160	95	72.3 - 126.2
Xylene	2.90	mg/Kg	1	3.00	<0.00410	97	76.5 - 121.6

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.904	mg/Kg	1	1.00	<0.00110	90	68.6 - 123.4	1	20
Toluene	0.934	mg/Kg	1	1.00	<0.00150	93	74.6 - 119.3	0	20
Ethylbenzene	0.955	mg/Kg	1	1.00	<0.00160	96	72.3 - 126.2	0	20
Xylene	2.90	mg/Kg	1	3.00	<0.00410	97	76.5 - 121.6	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCS Result	Units	Dil	Spike Amount	LCS Rec.	LCS Rec	Rec Limit
Trifluorotoluene (TFT)	0.792	0.778	mg/Kg	1	1.00	79	78	64.1 - 118.2
4-Bromofluorobenzene (4-BFB)	0.908	0.905	mg/Kg	1	1.00	91	90	68.7 - 125.8

Matrix Spike (MS-1) Spiked Sample: 120933

QC Batch: 36283
Prep Batch: 31610

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-13

Analyzed By: ss
Prepared By: ss

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec Limit
Benzene	0.975	mg/Kg	1	1.00	<0.00110	98	64.4 - 115.7
Toluene	1.03	mg/Kg	1	1.00	<0.00150	103	57.8 - 124.4
Ethylbenzene	1.07	mg/Kg	1	1.00	<0.00160	107	64.8 - 125.8
Xylene	3.30	mg/Kg	1	3.00	<0.00410	110	65.2 - 121.8

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil	Spike Amount	Matrix Result	Rec	Rec. Limit	RPD	RPD Limit
Benzene	0.902	mg/Kg	1	1.00	<0.00110	90	64.4 - 115.7	8	20
Toluene	0.940	mg/Kg	1	1.00	<0.00150	94	57.8 - 124.4	9	20
Ethylbenzene	0.969	mg/Kg	1	1.00	<0.00160	97	64.8 - 125.8	10	20

continued ...

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Xylene	2.98	mg/Kg	1	3.00	<0.00410	99	65.2 - 121.8	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec Limit
Trifluorotoluene (TFT)	0.769	0.782	mg/Kg	1	1	77	78	52.8 - 121.7
4-Bromofluorobenzene (4-BFB)	0.962	0.956	mg/Kg	1	1	96	96	66.7 - 131.9

Standard (ICV-1)

QC Batch: 36283

Date Analyzed: 2007-04-09

Analyzed By: ss

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0919	92	85 - 115	2007-04-09
Toluene		mg/Kg	0.100	0.0955	96	85 - 115	2007-04-09
Ethylbenzene		mg/Kg	0.100	0.0984	98	85 - 115	2007-04-09
Xylene		mg/Kg	0.300	0.301	100	85 - 115	2007-04-09

Standard (CCV-1)

QC Batch: 36283

Date Analyzed: 2007-04-09

Analyzed By: ss

Param	Flag	Units	CCVs True Conc	CCVs Found Conc	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0909	91	85 - 115	2007-04-09
Toluene		mg/Kg	0.100	0.0938	94	85 - 115	2007-04-09
Ethylbenzene		mg/Kg	0.100	0.0896	90	85 - 115	2007-04-09
Xylene		mg/Kg	0.300	0.278	93	85 - 115	2007-04-09

7040533

Analysis Request and Chain of Custody Record										PAGE: 1 OF: 2	
HIGHLANDER ENVIRONMENTAL CORP.										ANALYSIS REQUEST (Circle or Specify Method No.)	
1910 N. Big Spring St. Midland, Texas 79705											
(432) 682-4559 Fax (432) 682-3946											
CLIENT NAME: <u>Pogo Producing</u>					SITE MANAGER: <u>KE Tovar</u>						
PROJECT NO.: <u>2962</u>			PROJECT NAME: <u>Pogo Marine 19 Fed. #1</u>								
LAB I.D. NUMBER			DATE			TIME			PRESERVATIVE METHOD		
			MATRIX			COMPOUND			GRAB		
			NUMBER OF CONTAINERS			FILTERED (Y/N)					
			HCL			HNO3			ICE		
			NONE								
10904	4	2-07	S	#1	0-1	1					
10			S	#1	1-1.5'	1					
11			S	#2	0-1	1					
12			S	#2	1-1.5'	1					
13			S	#2	2-2.5'	1					
14			S	#3	0-1	1					
15			S	#3	1-1.5'	1					
16			S	#4	0-1	1					
17			S	#4	1-1.5'	1					
18			S	#5	0-1	1					

RELINQUISHED BY: (Signature) <u>[Signature]</u>		Date: <u>4/05/07</u>		RECEIVED BY: (Signature) <u>[Signature]</u>		Date: <u>4-5-07</u>		SAMPLED BY: (Print & Sign) <u>[Signature]</u>		Date: _____	
RELINQUISHED BY: (Signature) _____		Time: <u>2:40</u>		RECEIVED BY: (Signature) _____		Time: _____		SAMPLE SHIPPED BY: (Circle)		AIRBILL # _____	
RELINQUISHED BY: (Signature) _____		Time: _____		RECEIVED BY: (Signature) _____		Time: _____		FEDEX		BUS	
RECEIVING LABORATORY: _____		DATE: _____		RECEIVED BY: (Signature) _____		TIME: _____		HAND DELIVERED		UPS	
ADDRESS: _____		STATE: _____		DATE: _____		TIME: _____		HIGHLANDER CONTACT PERSON: <u>[Signature]</u>		Results by: _____	
CITY: _____		PHONE: _____		DATE: _____		TIME: _____				RUSH Charges	
CONTACT: _____		PHONE: _____		DATE: _____		TIME: _____				Authorized:	
SAMPLE CONDITION WHEN RECEIVED: <u>4°</u>		MATRIX: <u>W-Water</u>		A-Air		SD-Solid		REMARKS: <u>Run (2) BTEX w/ highest TPH.</u>		Yes No	
		S-Soil		SL-Sludge		O-Other					

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.

Summary Report

Ike Tavaréz
Highlander Environmental Services
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: April 10, 2007

Work Order: 7040533



Project Location: Eddy County, NM
Project Name: POGO-Marine 19 Fed. #1
Project Number: 2962

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
120909	#1 0-1	soil	2007-04-02	00:00	2007-04-05
120910	#1 1-1.5	soil	2007-04-02	00:00	2007-04-05
120911	#2 0-1	soil	2007-04-02	00:00	2007-04-05
120912	#2 1-1.5	soil	2007-04-02	00:00	2007-04-05
120913	#2 2-2.5	soil	2007-04-02	00:00	2007-04-05
120914	#3 0-1	soil	2007-04-02	00:00	2007-04-05
120915	#3 1-1.5	soil	2007-04-02	00:00	2007-04-05
120916	#4 0-1	soil	2007-04-02	00:00	2007-04-05
120917	#4 1-1.5	soil	2007-04-02	00:00	2007-04-05
120918	#5 0-1	soil	2007-04-02	00:00	2007-04-05
120919	#5 1-1.5	soil	2007-04-02	00:00	2007-04-05

Sample - Field Code	TPH DRO DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
120909 - #1 0-1	<50.0	<1.00
120911 - #2 0-1	<50.0	<1.00
120914 - #3 0-1	<50.0	<1.00
120916 - #4 0-1	<50.0	<1.00
120918 - #5 0-1	<50.0	<1.00

Sample: 120909 - #1 0-1

Param	Flag	Result	Units	RL
Chloride		221	mg/Kg	2.00

Sample: 120910 - #1 1-1.5

Param	Flag	Result	Units	RL
Chloride		184	mg/Kg	2.00

Sample: 120911 - #2 0-1

Param	Flag	Result	Units	RL
Chloride		283	mg/Kg	2.00

Sample: 120912 - #2 1-1.5

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	2.00

Sample: 120913 - #2 2-2.5

Param	Flag	Result	Units	RL
Chloride		236	mg/Kg	2.00

Sample: 120914 - #3 0-1

Param	Flag	Result	Units	RL
Chloride		188	mg/Kg	2.00

Sample: 120915 - #3 1-1.5

Param	Flag	Result	Units	RL
Chloride		214	mg/Kg	2.00

Sample: 120916 - #4 0-1

Param	Flag	Result	Units	RL
Chloride		236	mg/Kg	2.00

Sample: 120917 - #4 1-1.5

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

Sample: 120918 - #5 0-1

Param	Flag	Result	Units	RL
Chloride		77.8	mg/Kg	2.00

Sample: 120919 - #5 1-1.5

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	2.00

TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Ike Tavaréz
Highlander Environmental Services
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: April 10, 2007

Work Order: 7040533



Project Location: Eddy County, NM
Project Name: POGO-Marine 19 Fed #1
Project Number: 2962

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
120909	#1 0-1	soil	2007-04-02	00:00	2007-04-05
120910	#1 1-1.5	soil	2007-04-02	00:00	2007-04-05
120911	#2 0-1	soil	2007-04-02	00:00	2007-04-05
120912	#2 1-1.5	soil	2007-04-02	00:00	2007-04-05
120913	#2 2-2.5	soil	2007-04-02	00:00	2007-04-05
120914	#3 0-1	soil	2007-04-02	00:00	2007-04-05
120915	#3 1-1.5	soil	2007-04-02	00:00	2007-04-05
120916	#4 0-1	soil	2007-04-02	00:00	2007-04-05
120917	#4 1-1.5	soil	2007-04-02	00:00	2007-04-05
120918	#5 0-1	soil	2007-04-02	00:00	2007-04-05
120919	#5 1-1.5	soil	2007-04-02	00:00	2007-04-05

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed

This report consists of a total of 13 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.


Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank

Case Narrative

Samples for project 'POGO-Marine 19 Fed. #1' were received by TraceAnalysis, Inc on 2007-04-05 and assigned to work order 7040533. Samples for work order 7040533 were received intact without headspace and at a temperature of 4 deg C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B
TPH DRO	Mod. 8015B
TPH GRO	S 8015B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 7040533 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 120909 - #1 0-1

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		221	mg/Kg	1	2.00

Sample: 120909 - #1 0-1

Analysis: TPH DRO
QC Batch: 36327
Prep Batch: 31488

Analytical Method: Mod. 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-09

Prep Method: N/A
Analyzed By: AG
Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		160	mg/Kg	1	150	107	32.9 - 167

Sample: 120909 - #1 0-1

Analysis: TPH GRO
QC Batch: 36282
Prep Batch: 31480

Analytical Method: S 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-07

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.824	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.04	mg/Kg	1	1.00	104	67.5 - 140.3

Sample: 120910 - #1 1-1.5

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		184	mg/Kg	1	2.00

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Sample: 120911 - #2 0-1

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		283	mg/Kg	1	2.00

Sample: 120911 - #2 0-1

Analysis: TPH DRO
QC Batch: 36327
Prep Batch: 31488

Analytical Method: Mod. 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-09

Prep Method: N/A
Analyzed By: AG
Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		185	mg/Kg	1	150	123	32.9 - 167

Sample: 120911 - #2 0-1

Analysis: TPH GRO
QC Batch: 36282
Prep Batch: 31480

Analytical Method: S 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-07

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.814	mg/Kg	1	1.00	81	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.02	mg/Kg	1	1.00	102	67.5 - 140.3

Sample: 120912 - #2 1-1.5

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1050	mg/Kg	25	2.00

Sample: 120913 - #2 2-2.5

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	36264	Date Analyzed:	2007-04-06	Analyzed By:	AR
Prep Batch:	31466	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		236	mg/Kg	25	2.00

Sample: 120914 - #3 0-1

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	36264	Date Analyzed:	2007-04-06	Analyzed By:	AR
Prep Batch:	31466	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		188	mg/Kg	25	2.00

Sample: 120914 - #3 0-1

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	36327	Date Analyzed:	2007-04-09	Analyzed By:	AG
Prep Batch:	31488	Sample Preparation:	2007-04-09	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		208	mg/Kg	1	150	139	32.9 - 167

Sample: 120914 - #3 0-1

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	36282	Date Analyzed:	2007-04-09	Analyzed By:	ss
Prep Batch:	31480	Sample Preparation:	2007-04-07	Prepared By:	ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.821	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.02	mg/Kg	1	1.00	102	67.5 - 140.3

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Sample: 120915 - #3 1-1.5

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		214	mg/Kg	25	2.00

Sample: 120916 - #4 0-1

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		236	mg/Kg	25	2.00

Sample: 120916 - #4 0-1

Analysis: TPH DRO
QC Batch: 36327
Prep Batch: 31488

Analytical Method: Mod. 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-09

Prep Method: N/A
Analyzed By: AG
Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		189	mg/Kg	1	150	126	32.9 - 167

Sample: 120916 - #4 0-1

Analysis: TPH GRO
QC Batch: 36282
Prep Batch: 31480

Analytical Method: S 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-07

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.818	mg/Kg	1	1.00	82	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.02	mg/Kg	1	1.00	102	67.5 - 140.3

Sample: 120917 - #4 1-1.5

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

Sample: 120918 - #5 0-1

Analysis: Chloride (Titration)
QC Batch: 36264
Prep Batch: 31466

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		77.8	mg/Kg	25	2.00

Sample: 120918 - #5 0-1

Analysis: TPH DRO
QC Batch: 36327
Prep Batch: 31488

Analytical Method: Mod. 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-09

Prep Method: N/A
Analyzed By: AG
Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		200	mg/Kg	1	150	133	32.9 - 167

Sample: 120918 - #5 0-1

Analysis: TPH GRO
QC Batch: 36282
Prep Batch: 31480

Analytical Method: S 8015B
Date Analyzed: 2007-04-09
Sample Preparation: 2007-04-07

Prep Method: S 5035
Analyzed By: ss
Prepared By: ss

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.826	mg/Kg	1	1.00	83	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		1.02	mg/Kg	1	1.00	102	67.5 - 140.3

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Sample: 120919 - #5 1-1.5

Analysis: Chloride (Titration)
QC Batch: 36268
Prep Batch: 31470

Analytical Method: SM 4500-Cl B
Date Analyzed: 2007-04-06
Sample Preparation:

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<50.0	mg/Kg	25	2.00

Method Blank (1) QC Batch: 36264

QC Batch: 36264
Prep Batch: 31466

Date Analyzed: 2007-04-06
QC Preparation: 2007-04-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.500	mg/Kg	2

Method Blank (1) QC Batch: 36268

QC Batch: 36268
Prep Batch: 31470

Date Analyzed: 2007-04-06
QC Preparation: 2007-04-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.500	mg/Kg	2

Method Blank (1) QC Batch: 36282

QC Batch: 36282
Prep Batch: 31480

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-09

Analyzed By: ss
Prepared By: ss

Parameter	Flag	MDL Result	Units	RL
GRO		<0.739	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.889	mg/Kg	1	1.00	89	52.4 - 123.7
4-Bromofluorobenzene (4-BFB)		0.828	mg/Kg	1	1.00	83	67.5 - 140.3

Method Blank (1) QC Batch: 36327

QC Batch: 36327
Prep Batch: 31488

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-09

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
DRO		15.5	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		138	mg/Kg	1	150	92	44.7 - 133.6

Laboratory Control Spike (LCS-1)

QC Batch: 36264
Prep Batch: 31466

Date Analyzed: 2007-04-06
QC Preparation: 2007-04-06

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec Limit
Chloride	98.9	mg/Kg	1	100	<0.500	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	97.9	mg/Kg	1	100	<0.500	98	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 36268
Prep Batch: 31470

Date Analyzed: 2007-04-06
QC Preparation: 2007-04-06

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec Limit
Chloride	97.8	mg/Kg	1	100	<0.500	98	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	98.6	mg/Kg	1	100	<0.500	98	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 36282
Prep Batch: 31480

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-09

Analyzed By: ss
Prepared By: ss

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	7.37	mg/Kg	1	10.0	<0.739	74	57.7 - 102.5

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result

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Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	7.48	mg/Kg	1	10.0	<0.739	75	57.7 - 102.5	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result

Surrogate	LCS Result	LCSD Result	Units	Dil	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.14	1.14	mg/Kg	1	1.00	114	114	36.8 - 152.5
4-Bromofluorobenzene (4-BFB)	0.948	0.952	mg/Kg	1	1.00	95	95	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 36327
Prep Batch: 31488

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-09

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	248	mg/Kg	1	250	<14.6	99	47.5 - 144.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	239	mg/Kg	1	250	<14.6	96	47.5 - 144.1	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	152	153	mg/Kg	1	150	101	102	57.3 - 131.6

Matrix Spike (MS-1) Spiked Sample: 120918

QC Batch: 36264
Prep Batch: 31466

Date Analyzed: 2007-04-06
QC Preparation: 2007-04-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	2460	mg/Kg	25	2500	77.757	95	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	2500	mg/Kg	25	2500	77.757	97	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 120928

QC Batch: 36268
Prep Batch: 31470

Date Analyzed: 2007-04-06
QC Preparation: 2007-04-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec Limit
Chloride	3690	mg/Kg	25	2500	1320.76	95	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	3750	mg/Kg	25	2500	1320.76	97	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result

Matrix Spike (MS-1) Spiked Sample:

QC Batch: 36282
Prep Batch: 31480

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-09

Analyzed By: ss
Prepared By: ss

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	6.37	mg/Kg	1	10.0	<0.739	64	10 - 141.5

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	6.56	mg/Kg	1	10.0	<0.739	66	10 - 141.5	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.746	0.750	mg/Kg	1	1	75	75	40 - 125.3
4-Bromofluorobenzene (4-BFB)	1.06	1.08	mg/Kg	1	1	106	108	86.7 - 144.5

Matrix Spike (MS-1) Spiked Sample: 120909

QC Batch: 36327
Prep Batch: 31488

Date Analyzed: 2007-04-09
QC Preparation: 2007-04-09

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	297	mg/Kg	1	250	<14.6	119	11.7 - 152.3

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	269	mg/Kg	1	250	<14.6	108	11.7 - 152.3	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	181	160	mg/Kg	1	150	121	107	17 - 163.1

Standard (ICV-1)

QC Batch: 36264

Date Analyzed: 2007-04-06

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2007-04-06

Standard (CCV-1)

QC Batch: 36264

Date Analyzed: 2007-04-06

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2007-04-06

Standard (ICV-1)

QC Batch: 36268

Date Analyzed: 2007-04-06

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2007-04-06

Standard (CCV-1)

QC Batch: 36268

Date Analyzed: 2007-04-06

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2007-04-06

Standard (ICV-1)

QC Batch: 36282

Date Analyzed: 2007-04-09

Analyzed By: ss

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.946	95	85 - 115	2007-04-09

Standard (CCV-1)

QC Batch: 36282

Date Analyzed: 2007-04-09

Analyzed By: ss

Report Date: April 10, 2007
2962

Work Order: 7040533
POGO-Marine 19 Fed. #1

Page Number: 13 of 13
Eddy County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.847	85	85 - 115	2007-04-09

Standard (ICV-1)

QC Batch: 36327

Date Analyzed: 2007-04-09

Analyzed By: AG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	269	108	85 - 115	2007-04-09

Standard (CCV-1)

QC Batch: 36327

Date Analyzed: 2007-04-09

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	263	105	85 - 115	2007-04-09

432-425-3878

7040533

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559

Fax (432) 682-3946

PAGE: 1 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

SITE MANAGER:

PROJECT NO.:

PROJECT NAME:

LAB I.D.
NUMBER

DATE

TIME

MATRIX

COMP.

GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

PRESERVATIVE
METHOD

HCL

HNO3

ICE

NONE

BTEX 8020/808

MTBE 8020/808

TPH 418.1

PAH 8270

PCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCIP Metals Ag As Ba Cd Cr Pd Hg Se

TCIP Volatiles

TCIP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/824

GC/MS Semi. Vol. 8270/825

PCP's 8080/808

Pest. 808/808

BOD, TSS, pH, TDS, Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

RELINQUISHED BY: (Signature)

Date: 4/05/07

Time: 2:40

RECEIVED BY: (Signature)

Date: 4-5-07

Time: 1:40

SAMPLED BY: (Print & Sign)

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: _____

HIGHLANDER CONTACT PERSON:

Results by:

RECEIVING LABORATORY:

ADDRESS:

CITY:

STATE:

ZIP:

CONTACT:

PHONE:

DATE:

TIME:

SAMPLE CONDITION WHEN RECEIVED:

MATRIX:

W-Water

A-Air

SD-Solid

S-Soil

SL-Sludge

O-Other

REMARKS:

RUL(2) BTEX w/ highest TPH.
All BTEX 120912, 120916 in the 4-13

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.

all tests - midland
4/17/07 4/19/07

7040533

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559

Fax (432) 682-3946

PAGE: 2 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: <u>Pogo Producing Co</u>				SITE MANAGER: <u>1 Kc Tarany</u>				NUMBER OF CONTAINERS	PRESERVATIVE METHOD				BTX 8020/803	MTBE 8020/803	TPH 418.1	8015 MOD. TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/824	GC/MS Semi. Vol. 8270/825	PCB's 8080/808	Pest. 808/808	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)			
PROJECT NO: <u>2962</u>		PROJECT NAME: <u>Pogo</u>		PROJECT NAME: <u>Marine 19 Fed. #1</u>		PRESERVATIVE METHOD																											
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE																				
120919	4-2-07		S			#5 (1-1.5')		1																									

RELINQUISHED BY: (Signature) <u>[Signature]</u>	Date: <u>4/05/07</u> Time: <u>2:40</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	Date: <u>4-5-07</u> Time: <u>1:10</u>	SAMPLED BY: (Print & Sign) <u>[Signature]</u>	Date: _____ Time: _____
RELINQUISHED BY: (Signature) _____	Date: _____ Time: _____	RECEIVED BY: (Signature) _____	Date: _____ Time: _____	SAMPLE SHIPPED BY: (Circle) FEDEX <input checked="" type="checkbox"/> BUS <input type="checkbox"/> HAND DELIVERED <input type="checkbox"/> UPS <input type="checkbox"/>	AIRBILL # _____ OTHER: _____
RELINQUISHED BY: (Signature) <u>[Signature]</u>	Date: _____ Time: _____	RECEIVED BY: (Signature) _____	Date: _____ Time: _____	HIGHLANDER CONTACT PERSON: <u>[Signature]</u>	
RECEIVING LABORATORY: <u>Procl.</u>		RECEIVED BY: (Signature) _____		Results by: _____	
ADDRESS: <u>Midland</u>		DATE: _____ TIME: _____		RUSH Charges Authorized: _____	
CITY: _____ STATE: _____ ZIP: _____		DATE: _____ TIME: _____		Yes _____ No _____	
CONTACT: _____ PHONE: _____		DATE: _____ TIME: _____			
SAMPLE CONDITION WHEN RECEIVED: <u>4°</u>		MATRIX: <u>W-Water</u> <u>S-Soil</u> <u>A-Air</u> <u>SL-Sludge</u> <u>SD-Solid</u> <u>O-Other</u>		REMARKS: <u>all tests - midland</u>	

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.

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 October 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 <i>Latigo Petroleum, Inc</i>	Contact <i>PATRICK ELLIS</i>	
Address <i>P.O. Box 10340 Midland, Texas 79702</i>	Telephone No. <i>432 685-8148</i>	
Facility Name <i>MARINE 19 Fed #1</i>	Facility Type <i>TANK BATTERY</i>	
Surface Owner	Mineral Owner	Lease No. <i>NM-109756</i>

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	<i>19</i>	<i>25S</i>	<i>27E</i>	<i>1480</i>	<i>North</i>	<i>1130</i>	<i>West</i>	<i>Eddy</i>

Latitude *32°07'06"* Longitude *104°14'01"*

NATURE OF RELEASE

Produced Water
Rain Water

Type of Release <i>Produced Water</i>	Volume of Release <i>200 BBLs</i>	Volume Recovered <i>780 BBLs</i>
Source of Release <i>Fiberglass Water Tank</i>	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <i>3-21-07 10:00 PM</i> <i>Left voice message Mike Bratcher OGD</i> <i>TAMMY GUM</i>	
By Whom? <i>PATRICK ELLIS</i>	Date and Hour <i>5:00 PM 3-22-07</i>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

Lightning storm struck fiberglass tank. The tank exploded releasing 200 BBLs of produced water which mixed with heavy rain fall.

Describe Area Affected and Cleanup Action Taken.*

Release occurred in a lined facility. A portion of the berm washed out allowing water mixture to reach the well pad. All free fluid was picked up. Highlander Environmental was contacted to evaluate spill area.

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.

Signature: <i>Patrick L. Ellis</i>	OIL CONSERVATION DIVISION		
Printed Name: <i>PATRICK L. ELLIS</i>	Approved by District Supervisor:		
Title: <i>EHS Supervisor</i>	Approval Date:	Expiration Date:	
E-mail Address: <i>ellis@pogoproducing.com</i>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: <i>4-5-07</i> Phone: <i>(432) 685-8148</i>			

* Attach Additional Sheets If Necessary

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
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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 October 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 Latigo Petroleum, Inc	Contact Pat Ellis
Address P.O. Box 10340 Midland, TX 79702	Telephone No. (432) 685-8148
Facility Name Marine 19 Federal #1	Facility Type Tank Battery

Surface Owner	Mineral Owner	Lease No. NM - 109756
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LOCATION OF RELEASE

Unit Letter E	Section 19	Township 25S	Range 27E	Feet from the 1480	North/South Line North	Feet from the 1130	East/West Line West	County Eddy
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Latitude 32° 07' 06" Longitude 104° 14' 01"

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 200 BBLS	Volume Recovered 780 BBLS (Produced Water / Rain Water)
Source of Release Fiberglass Water Tank	Date and Hour of Occurrence	Date and Hour of Discovery 3-21-07 10:00 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Left voice message Mike Bratcher - OCD Tammy - BLM	
By Whom? Patrick Ellis	Date and Hour 3-22-07 5:00 PM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Lightning storm struck fiberglass tank. The tank exploded releasing 200 BBLS of produced water which mixed with heavy rainfall.

Describe Area Affected and Cleanup Action Taken.*
Release occurred in a lined facility. A portion of the berm washed out allowing water mixture to reach the well pad. All free fluid was picked up. Highlander Environmental Corp. evaluated spill area for closure.

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.

Signature: <i>Patrick L. Ellis</i>	OIL CONSERVATION DIVISION		
Printed Name: Patrick L. Ellis	Approved by District Supervisor:		
Title: EH&S Supervisor	Approval Date:	Expiration Date:	
E-mail Address: ellisp@pogoproducing.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date:	Phone: (432) 685-8148		

* Attach Additional Sheets If Necessary