		S	ITE INFOR	RMATION						
	· · · · · · · · · · · · · · · · · · ·	Repo	rt Type: C	losure R	eport					
General Site Info	ormation:									
Site:	ം പ്രതംവാഹത്താന് നിന്നും പ്രതിക്ക് നിന്നും പ്രതിക്കാന് തിന്നും പ്രതിക്കാന് തിന്നും പ്രതിക്കാന് തിന്നും പ്രതിക്ക	State 2 W				100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100				
Company:		OXY USA,	-			K.				
Section, Townsl	hip and Range	Unit P	Sec 2	T22S	R31E					
Lease Number:					-					
County:		Eddy Cour	nty							
GPS:	•		32. 24 59.4° N 103 44 30.6° W							
Surface Owner:		State								
Mineral Owner:										
Directions:		approximate	ly 7.7 miles. Tu	n east onto lea	ase road and	continue fo	of Louis Wittlock Rd for r 1.5 miles, turn south on I in pasture area.			
Roloaso Data:					204 <sup>34</sup> 404 64 54 54 54 54 54 54 54 54 54 54 54 54 54					
Date Released:		11/11/2005	And the second second second second second	NE FRANK MART	RAVA MARK SERVER		eres and the transford have			
Type Release:			, water and oil				<del>_</del>			
Source of Contar	nination	Flowline fai								
Fluid Released:		30 bbls								
Fluids Recovered	l: · · ·		0 bbls							
	nication:			i station de						
		or the set	PRE BROWN PROVIDENCE	watter 2000 and a	11 <b>-</b>	na mesta an -	RI WARRAN WALLAN Y & WEAL, "IT THE			
Name:	Dusty Wilson				Ike Tavar					
Company:	Oxy USA, Inc.				Tetra Tec					
Address:	6 Desta Drive				4000 N. E	Big Spring,	St.			
	Suite 600				Ste 401					
City:	Midland, TX 7970	5			Midland,	Texas				
Phone number:	(432)685-5771				(432)687-	-8110				
Fax:										
Email:	dusty_wilson@c	xy.com		· · · · · · · · · · · · · · · · · · ·	lke.Tava	rez@tetra	tech.com			
Ranking Criteria Depth to Groundw			Ranking Sco	ore		Site Da	ata			
<50 ft 50-99 ft			20			. <u>-</u>				
>100 ft.			0							
WellHead Protecti	ion:		Ranking Sco	ore		Site Da	ata			
	000 ft., Private <200	ft.	20							
	000 ft., Private >200		0	I		0				
Surface Body of V	Vater:		Ranking Sco	ore		Site Da	ata			
<200 ft.			20							
200 ft - 1,000 ft.			10							
>1,000 ft.			0			0				
<u>, то</u>	tal Ranking Scor	9	0			NM (	OIL CONSERVATIO			
		Accer	otable Soil RR	AL (mg/kg)	and the second		-			
		Benzene					OCT 06 2014			
		10	50	5,000	)		RECEIVED			



December 3, 2013

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

# RE: Closure Report for the Flow Line Spill at the OXY USA INC., State 2, Well #2, Located in Unit Letter P, Section 2, Township 22 South, Range 31 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. was contacted by Pogo Producing Company (Now operated by OXY USA, Inc.) to assess and remediate a spill on the State 2 Well # 2 (flow-line), located in Unit Letter P, Section 2, Township 22 South, Range 31 East, Eddy County, New Mexico (Site). The spill occurred under Pogo Producing Company, which Oxy acquired the lease. The spill location coordinates are N 32° 24' 59.4", W 103° 44' 30.6". The Site is shown on Figure 1.

#### Background

According to the State of New Mexico C-141 report, Pogo Producing had a spill that occurred on November 11, 2005, from a hole in a poly-line (flow-line). A total of 10 barrels of oil and 20 barrels of produced water were released and no fluids were recovered. The oil and water were released in a sandy pasture. The initial C-141 is shown in Appendix A.

#### Groundwater and Regulatory

The New Mexico State Engineer's Office database did not show any wells in Section 2, however, wells in the vicinity to the north and south of the section had reported depths to water ranging from 400' to 600' below ground surface. The USGS reports did not show any wells in the vicinity of this site. Referring to the ChevronTexaco Depth to Water Map for Eddy County, there is a well shown

Tetra Tech

in Section 15 with a reported depth to water of 124'. Reviewing the topographic extract there is a windmill shown in this area. This windmill is located approximately halfway between the Site and the Waste Isolation Pilot Plant (WIPP) site to the southwest. The elevation of the surface at this windmill is approximately 90'-100' lower than the elevation of the site State 2 #2 site. Projecting the elevation to this site would indicate the depth to water to exceed 200' at the State 2 #2 site. The topographic extract is shown as Figure 1. A riskbased 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.

### **Initial Assessment and Results**

On December 29, 2005, Tetra Tech, Inc. personnel inspected and sampled the spill area. The spill area was located approximately 1,800 feet northeast from the well in a sandy pasture. During the inspection, an area approximately 120' x 160' had been excavated and worked. This area may have been from some of the overspray from the spill. At the release (flow-line), there was no apparent staining on the east side of the flow-line. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Soil samples were collected at 1.0 foot intervals and submitted for analysis of TPH by EPA method 8015 modified, BTEX by EPA method 8021B and chloride by EPA method 300.0.

Referring to Table 1, laboratory results indicated AH-1 and AH-3 exceeded the RRAL for TPH and BTEX at depths of 2.5' and 3.5', respectively. The remaining auger holes, AH-2 and AH-4, did not exhibit TPH and BTEX concentrations above RRAL. Chloride concentrations were elevated in AH-1 throughout the depth of the auger hole. AH-3 showed an increasing chloride concentration at 4-4.5' (7,080 mg/kg) and 5-5.5' (22,200 mg/kg). Deeper samples were not collected due to auger refusal. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The auger hole locations are shown on Figure 2. The laboratory results of the sampling are summarized in Table 1.



In order to complete delineation of the site, Highlander personnel were onsite May 25, 2006, to place backhoe trenches in the vicinity of the auger holes. Highlander supervised the placement of seven (7) trench locations (T-1 to T-7). Soil samples were collected at 2.0 foot intervals and submitted for analysis of chlorides. The analysis indicates that the chloride impacts have been delineated vertically and do not exceed a depth of 14 feet bgs. Horizontally, the site has been delineated east, west, and south but has not been completely delineated to the north. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The trench locations are shown on Figure 3 while concentrations in depths are shown on Figures 4 and 5. The laboratory results of the sampling are summarized in Table 2.

A work plan for this site was submitted to the NMOCD dated October 18, 2006, but was not reviewed. In a meeting in Artesia in December, 2008, it was decided that since the original work plan had not been reviewed, the site needed to be re-sampled in order to confirm the chloride concentrations had not changed.

# **Re-Evaluation and Results**

Based upon the previously impacted areas, T-1, T-2 and T-6, on December 14, 2009, Tetra Tech personnel re-evaluated and sampled the spill area. A total of three (3) trenches were excavated (T-1, T-2 and T-6) to assess total chloride concentration. Soil samples were collected at two (2) foot intervals and submitted for analysis. The analysis indicates that the chloride concentrations were very similar in depth and concentration to the original testing performed at this site. The trench locations are shown on Figure 6 while concentrations and depths are shown on Table 3.

# Remediation

In April of 2013, Tetra Tech personnel supervised the excavation of the impacted soils as discussed in the submitted work plan. The areas of T-1, T-2, T-4, and T-6 were excavated to a depth of 4.0' as highlighted (green) on Table 2 and Table 3 and shown on Figure 6. The area was capped with a 40 mil liner to prevent any further migration of contaminates. The impacted soil was transported to proper disposal and the excavation area was backfilled with clean soil to grade. The remediation was completed on April 26, 2013.



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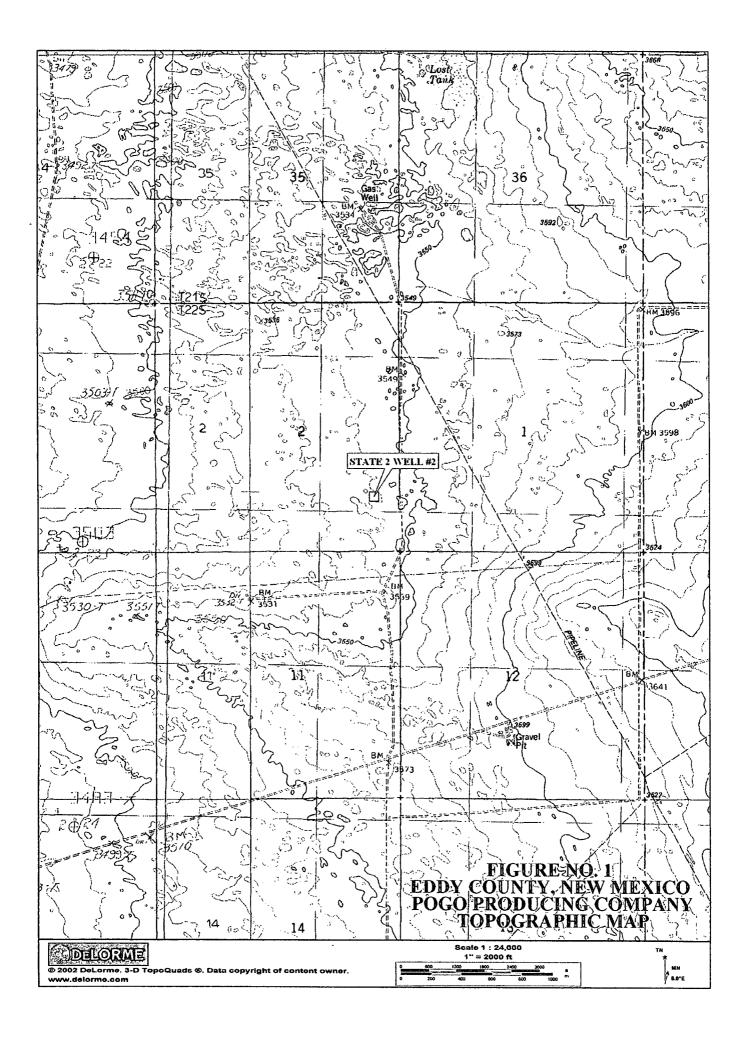
Due to the remedial actions taken, OXY USA, Inc. requests closure of this site. The final C-141 is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

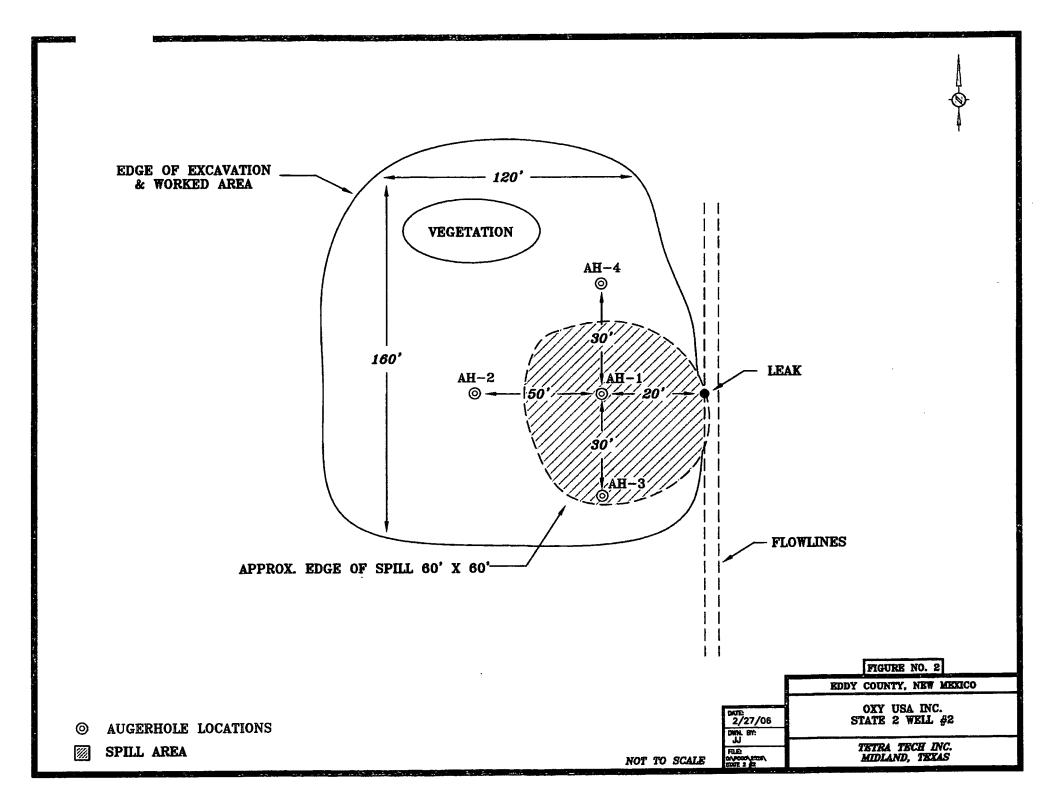
Respectfully submitted,

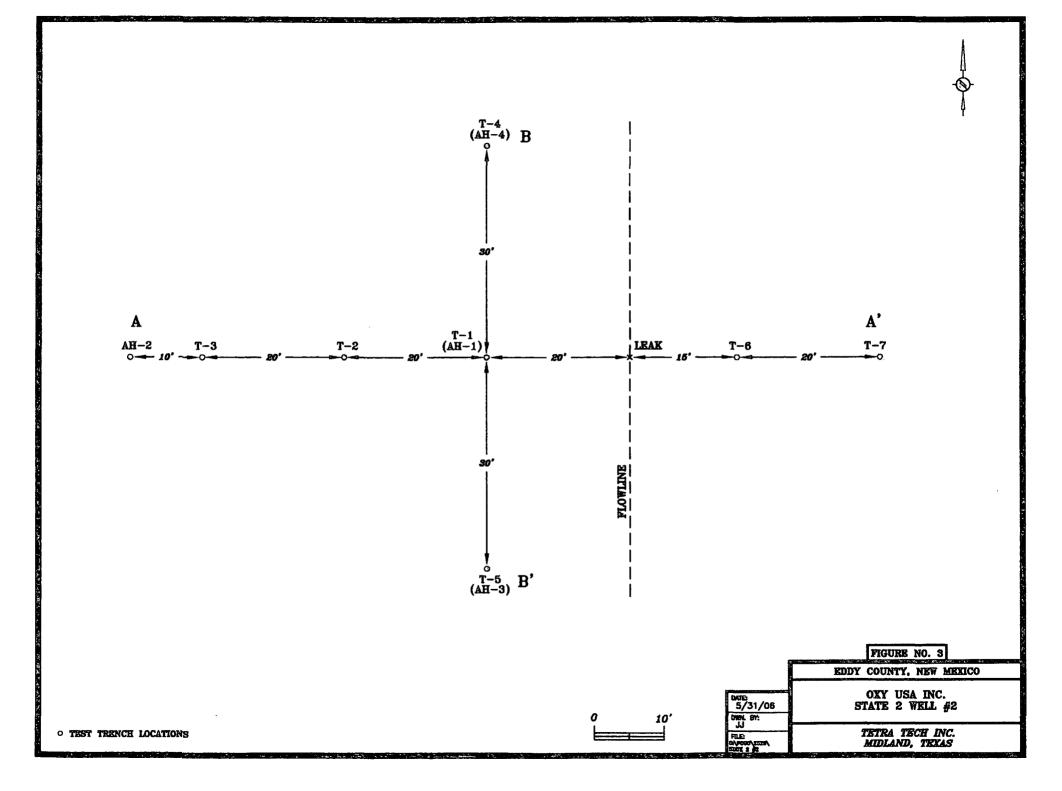
TETRA TECH

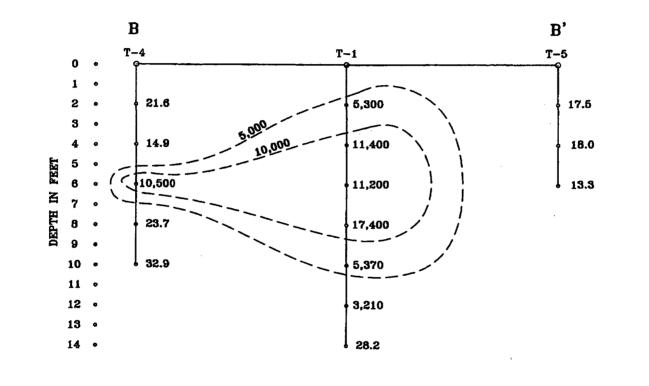
Ike Tavarez, Project Manager, P.G.

# Figures



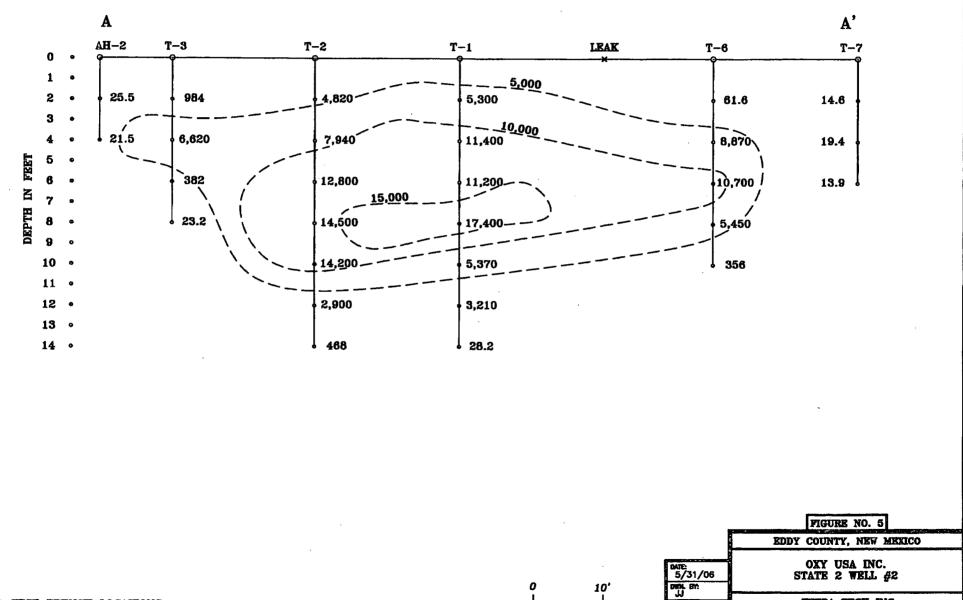






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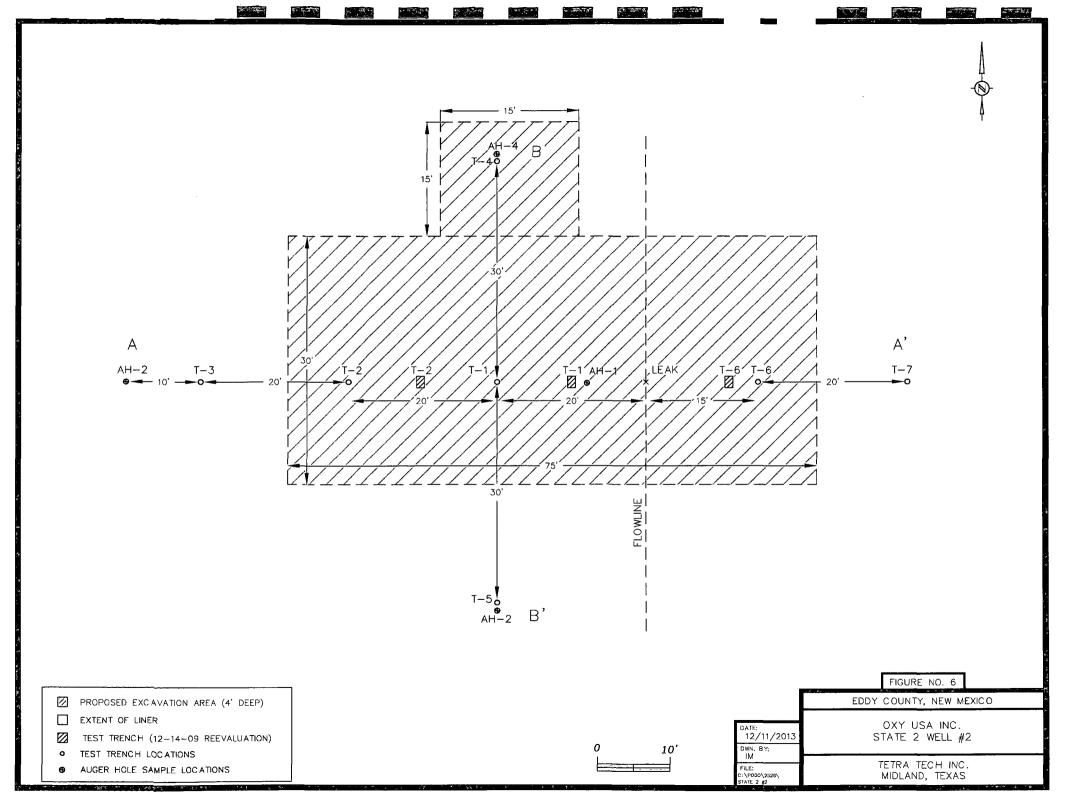




• TEST TRENCH LOCATIONS

TETRA TECH INC. MIDLAND, TEXAS

FILE: and and another and state 2 gr -C



# Tables

### Table 1 OXY USA INC. State 2 Well #2 (flow-line Spill) Eddy County, New Mexico

Sample	Date	Sample		TPH (mg/kg	;)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sampled	Depth (ft)	C6-C12	C12-C35	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
	12/29/05	0-1	7,570	32,200	39,800	5.18	22.1	. 19.1	62.8	4950
		1.1.5	5,760	22,500	28,300.0	10.8	29.2	17.8	55.9	4,690
	"	2-2.5	31.7	279	311	<0.025	<0.025	<0.025	<0.025 .	4,750
A 11 - 1		3-3-5								6,260
AH-1	**	4-4.5								15;000
	tt.	5-5.5	-	_	-	_	-	-	-	15,400
	"	6-6.5	-	-	-	_	-	-	-	18,000
		7-7.5	-	-	_	_	-	-	-	17,400
	12/29/05	0-1	<10.0	25.4	25.4	<0.025	<0.025	<0.025	<0.025	33.9
		1-1.5	<10.0	<10.0	<10.0	_	-	-	-	26.6
AH-2	11	2-2.5	-	-	-	-	-	-	-	25.5
	17	3-3.5	-	-	-	-	-	-	-	20.8
	11	4-4.5	-	-	-	-	-	-	-	21.4
	12/29/05	0-1	245	1,690	1,940	< 0.025	0.0352	0.0995	0.462	415
	n	1-1.5	6,880	19,100	26,000	6.26	38.2	35.0	111.6	331
	"	2-2.5	4,700	14,000	18,700	-	-	-	-	30
AH-3	17	3-3.5	176	728	904	<0.025	<0.025	0.0956	0.573	111
	"	4-4.5	-	-	-	-	-	-	-	7,080
	"	5-5.5	-	-	-	-	-	-	-	22,200
	12/29/05	0-1	1.14a <10:0	<10.0	<10.0	<0.025	<0.025	<0.025	<0.025	39.7
	"	1-1.5	, 10.0		<10.0				an sa an	26.4
AH-4	.,	2-2.5							W. P. C.	20.7
		3-3.5				A STATE AND A STATE OF				22.4
	11	4-4.5					Marka M		1.66	34.0

(-) Not Analyzed

Excavation Depth

Liner

# Table 2 OXY USA INC. State 2 Well #2 (flow-line Spill) Eddy County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Chloride (mg/kg)
	05/25/06	2.0	5,300
		4.0	11,400
	u.	6.0	11,200
T-1	11	8.0	17,400
	11	10.0	5,370
	11	12.0	3,210
	11	14.0	28.2
	05/25/06	2:0	4,820
		4.0	4;820 7;940
	11 11	6.0	12,800
T-2	11	8.0	14,500
	11	10.0	14,200
	11	12.0	2,900
	11	14.0	268
	05/05/06	2.0	004
	05/25/06	2.0	984
T-3		4.0	6,620
		6.0	382
		8.0	23.2
	05/25/06	2:0	21.6
		4.0	14:9
T-4		6.0	10,500
		8.0	23.7
	"	10.0	32.9
	05/25/06	2.0	17.5
T-5	"	4.0	18.0
	11	6.0	13.3
	05/25/06	2.0	61.6
		4.0	8,870
T-6	11	6.0	10,700
	11	8.0	5,450
	11	10.0	356
	05/25/06	2.0	14.6
T-7	"	4.0	19.4
	11	6.0	14

Excavated Depths

# Table 3 OXY USA INC. PXP State 2 Well #2 Flow Line Release Eddy County, New Mexico

Sample	Date	Sample	Soil S	Status		TPH (mg/kg	1)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sampled	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
T-1	12/14/09	2	X	A State of the state of the						STORAGE		91
	12/14/09	4	X									320
	12/14/09	6'	х		-	-	-	-		-	-	2,050
	12/14/09	8'	X		-	-	-	-	-	-	-	12,200
	12/14/09	10'	Х		-	-	_	-		-	-	6,810
T-2	12/14/09	2	X								2.45-35.	2,890
	12/14/09	4	X									7,770
	12/14/09	6'	X		-	-	-	-	-	-	-	13,600
	12/14/09	8'	х		-	-	-	-	-	_	-	20,800
	12/14/09	10'	Х		-	-	-	-		-	-	10,500
T-6	12/14/09	2	X									28
• •	12/14/09	4	X								Te Series	107
	12/14/09	6'	х		-	-	-	-	-	-	-	4,040
	12/14/09	8'	Х		-	-	-	-	-	-	-	12,900
	12/14/09	10'	Х		-	-	-	-	-	-	-	1,460

(-) Not Analyzed

Appendix A

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

NM OIL CONSERVATION

Lease No. NM4

30-015-28416

ARTESIA DISTRICT FOUND COMPANY Revised October 10, 2003

OCT 0 6 2014 District Office in accordance with Rule 116 on back side of form RECEIVED

side of form

# **Release Notification and Corrective Action**

	OPERATOR	Initial Report	Final Report
Name of Company Oxy USA, Inc	Contact Dusty Wilson		
Address 6 Desta Drive Suite 600, Midland, TX 79705	Telephone No. (432) 685-5771		
Facility Name State 2 Well #2	Facility Type Flowline		

Surface Owner:State

.

#### LOCATION OF RELEASE

Mineral Owner

				LOOL	IION OF REF			-	
Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	
Р	2	228	31E	660	South Line				Eddy

Latitude N ° Longitude W °

#### NATURE OF RELEASE

Type of Release: Produced Water & Oil	Volume of Release 10 bbls oil	Volume Re	ecovered 0 bbls
	20 bbls water		
Source of Release	Date and Hour of Occurrence		lour of Discovery
Flowline Was Issuediate Nation Circuit	11/14/05 11:00a.m.	11-14-05	12:30 pm
Was Immediate Notice Given?	If YES, To Whom? Mike Bratcher		
By Whom?	Date and Hour 11-14-05 1:30 p.		
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.	
🗋 Yes 🛛 No	N/A		
If a Watercourse was Impacted, Describe Fully.*	L		
N/A			
N/A			
Describe Cause of Problem and Remedial Action Taken.*			
Flowline blew a hole in the middle of the pasture			
Describe Area Affred de d'Olever Astice Teles *			
Describe Area Affected and Cleanup Action Taken.*			
Tetra Tech inspected site and collected samples to define spills extent. So	I that exceeded RRAL was removed	and hauled av	vay for proper disposal Site
was then brought up to surface grade with clean backfill material. Tetra Te			
I hereby certify that the information given above is true and complete to the	he best of my knowledge and understa	and that pursu	ant to NMOCD rules and
regulations all operators are required to report and/or file certain release n	otifications and perform corrective ac	tions for relea	uses which may endanger
public health or the environment. The acceptance of a C-141 report by the			
should their operations have failed to adequately investigate and remediate			
or the environment. In addition, NMOCD acceptance of a C-141 report d	oes not relieve the operator of respon	sibility for co	mpliance with any other
federal, state, or local laws and/or regulations.			
	OIL CONSER	<u>VATION I</u>	<u>DIVISION</u>
Signature			
Printed Name: Ike Tavarez	Approved by District Supervisor:		
	T		
Title: Project Manager	Approval Date:	Expiration D	ate:
			· · · · · · · · · · · · · · · · · · ·
E-mail Address: Ike.Tavarez@tetratech.com	Conditions of Approval:		Attached
Date: 12/16/2013 Phone: (432) 687-8110			

\* Attach Additional Sheets If Necessary

-4 -		
District I - (505) 393-6161 State of	New Mexico	Terms C 141
E (). Box 1980		Form C-141 Originated 2/13/97
	atural Resources Departme	III Onginated 2/13/97
611 South First	vation Division	
	th Pacheco Street	Submit 2 copies to Appropriate Distric
1000 Rio Brazos Road (\$05	lew Mexico 87505 ) 827-7131	Office in accordance
Aztec, NM 87410 Divider IV - (305) 827-7131	, <b>52/~/ 1</b> 3,	with Rule 116 or back side of form
	الالات بدوانكا بدارا أولاغ المن بأخال التقيير وأواجده بالتكيب	والمحمد المتراقل ووالكفارين الكواري بالمكرين الكوار
	on and Corrective Action	
Name	PERATOR	Ginitial Report Final Repor
LOND Producing CO.		11: <u>5</u>
Address	7970) 432-685	- 8100
Facility Name	7970) 432-685 Facility Type	0/00
STATE 2 Well #2	Flowline	
Surface Owner Mineral Owner	<b>A</b>	Lesse No.
I. Neu	MEXICO	NM4
LOCATIO	N OF RELEASE	
Unit Letter Section Township Range Feet from the NorthSouth		
F 2 225 318 660 5L	12310 FEL	Eddy
NATIOE	OF RELEASE	
Type of Release	Volume of Release	Volume Recovered
Dil e M2O	10 oil \$ 20 B	w: 0
Source of Refease	Date and Hour of Octament	Date and Hour of Discovery
FOLY Pile Flow Live Jeveloped	hole I Am 11-14-	09 12 20 11-14-05
Was interediate Notice Given?	WYES, To What BR	atcher
By Whony2	Dage grid Hour	FLIR
L NAN TAILEY	120 11-14	4) C
Was a Waterrourse Resched?	If YES, Volume impacting the Way	acourse.
Is a Watercourse was Impacted, Describe Fully (Attach Additional Sheers II Necessa	וד	
		1
Describe Cause of Problem and Remodial Action Taken. (Actach Additional Sheets If	Nemessary)	
Flow 1, Ne blew A hole ;	Nthe middle	OF SANDY
PASTURC		
Describe Ares Affected and Cleanup Action Taken (Attach Additional Sheets if Netter	rary)	And CA IT TO
CONTANINAted SU: 1. will b	e removed n	No SENTIO
SUNDANCE LAND FARM		
I here by certify that the information given showe is more and complete to the here of my loss	whening and understand that parameter to NMOC	D rules atal regulations til operators
are required to report and/or file certain release motifications and perform connective actions a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of t	ability should their approximations have failed to add	enately (municipale and minister)
contamination that pose a threat to ground water, surface water, human health or the envis operator of responsibility for compliance with any other federal, state, or local taws and	mmene la addition NMOCT screets and of a	Si41 report does not relieve the
Signaning Daddon		TIGN DIVISION
	Approved by	
Proved Namer WAN TOTLEY	District Supervisor:	
Due CONSCILLANT		xpiration Date:
Date 11-15-05 5557485460	Canditians of Approval:	Autohed

 $\square$ 

002/002

p.1

# Appendix B

#### Water Well Data Average Depth to Groundwater (ft) OXY USA, Inc. - State 2 #2 Eddy County, New Mexico

31 East

	21 So	outh	30	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	22 Sc	outh	30	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 <b>256</b>	23	24
30	29	28	27	26	25
31	32	33 <b>155</b>	34	35	36

	23 5	South	;	30 East	
6	5	4	3	2	1
110				250	
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
			440		1

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 <b>630</b>	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

21 South

	21 So	uth	32	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	22 So	outh	31	East	
6	5	4	3	2	1
				SITE	
7	8	9	10	11	12
18	17	16	15	14	13
		448			
19	20	21	22	23	24
	47				
30	29	28	27	26	25
	413	444			
31	32	33	34	35	36

	22 So	uth	32	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 382 350	13
19 (S) <b>280</b>	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 Sc	outh	31	East		
5	4	3	2	1	
354	168				
8	9	10	11	12	
17	16	15	14	13	
20	21	22	23	24	
29	28	27	26	25	
32	33	34	35	36	

	23 So	uth	32	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 <b>400</b>	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

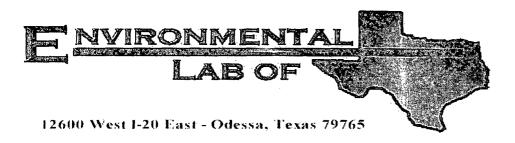
NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

# Appendix C

.



# Analytical Report

# **Prepared for:**

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

Project: Pogo/ State 2 Well #2 (Flowline) Project Number: 2526 Location: Eddy Co., NM

Lab Order Number: 5L30010

Report Date: 01/10/06

Highlander Environmental Corp.	Project:	Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number:	2526	Reported:
Midland TX, 79705	Project Manager:	Ike Tavarez	01/10/06 12:13

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-1 0-1'	5L30010-01	Soil	12/29/05 00:00	12/30/05 16:25
AH-1 1-1.5'	5L30010-02	Soil	12/29/05 00:00	12/30/05 16:25
AH-1 2-2.5'	5L30010-03	Soil	12/29/05 00:00	12/30/05 16:25
AH-1 3-3.5'	5L30010-04	Soil	12/29/05 00:00	12/30/05 16:25
AH-1 4-4.5'	5L30010-05	Soil	12/29/05 00:00	12/30/05 16:25
AH-1 5-5.5'	5L30010-06	Soil	12/29/05 00:00	12/30/05 16:25
AH-1 6-6.5'	5L30010-07	Soil	12/29/05 00:00	12/30/05 16:25
AH-1 7-7.5'	5L30010-08	Soil	12/29/05 00:00	12/30/05 16:25
AH-2 0-1'	5L30010-09	Soil	12/29/05 00:00	12/30/05 16:25
AH-2 1-1.5'	5L30010-10	Soil	12/29/05 00:00	12/30/05 16:25
AH-2 2-2.5'	5L30010-11	Soil	12/29/05 00:00	12/30/05 16:25
AH-2 3-3.5'	5L30010-12	Soil	12/29/05 00:00	12/30/05 16:25
AH-2 4-4.5'	5L30010-13	Soil	12/29/05 00:00	12/30/05 16:25
AH-3 0-1'	5L30010-14	Soil	12/29/05 00:00	12/30/05 16:25
AH-3 1-1.5'	5L30010-15	Soil	12/29/05 00:00	12/30/05 16:25
AH-3 2-2.5'	5L30010-16	Soil	12/29/05 00:00	12/30/05 16:25
AH-3 3-3.5'	5L30010-17	Soil	12/29/05 00:00	12/30/05 16:25
AH-3 4-4.5'	5L30010-18	Soil	12/29/05 00:00	12/30/05 16:25
AH-3 5-5.5'	5L30010-19	Soil	12/29/05 00:00	12/30/05 16:25
AH-4 0-1'	5L30010-20	Soil	12/29/05 00:00	12/30/05 16:25
AH-4 1-1.5'	5L30010-21	Soil	12/29/05 00:00	12/30/05 16:25
AH-4 2-2.5'	5L30010-22	Soil	12/29/05 00:00	12/30/05 16:25
AH-4 3-3.5'	5L30010-23	Soil	12/29/05 00:00	12/30/05 16:25
AH-4 4-4.5'	5L30010-24	Soil	12/29/05 00:00	12/30/05 16:25

Highlander Environmental Corp.	Project:	Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number:	2526	Reported:
 Midland TX, 79705	Project Manager:	Ike Tavarez	01/10/06 12:13

# Organics by GC

**Environmental Lab of Texas** 

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-1 0-1' (5L30010-01) Soil	· · · · · · · · · · · · · · · · · · ·								
Benzene	5.18	0.200	mg/kg dry	200	EA60314	01/03/06	01/04/06	EPA 8021B	
Toluene	22.1	0.200	0	n		11	H	15	
Ethylbenzene	19.1	0.200	н	n	u	11	в		
Xylene (p/m)	41.6	0.200	н	11	**	H	U.	n	
Xylene (0)	21.2	0.200	"	n		11	н	11	
Surrogate: a,a,a-Trifluorotoluene		498 %	80-1	20	11	11	11	11	S-0-
Surrogate: 4-Bromofluorobenzene		188 %	80-1	20	"	"	"	"	S-0-
Gasoline Range Organics C6-C12	7570	100	mg/kg dry	10	EA60315	01/03/06	01/04/06	EPA 8015M	
Diesel Range Organics >C12-C35	32200	100	n	11	11	n	п	u	
Total Hydrocarbon C6-C35	39800	100	u	н	n	u	11	n	
Surrogate: 1-Chlorooctane		25.2 %	70-1	130	"	"	"	11	S-0
Surrogate: 1-Chlorooctadecane		36.4 %	70-1	30	"	"	11	"	S-0
AH-1 1-1.5' (5L30010-02) Soil									
Benzene	10.8	0.250	mg/kg dry	250	EA60314	01/03/06	01/04/06	EPA 8021B	
Toluene	29.2	0.250	н	11	u	n	17	"	
Ethylbenzene	17.8	0.250	н	н	n	11	н	н	
Xylene (p/m)	37.6	0.250	н	41	11	н	17	u	
Xylene (o)	18.3	0.250	н	11	н	11	n	"	
Surrogate: a,a,a-Trifluorotoluene		610 %	80-1	20	"	"	11	11	S-0
Surrogate: 4-Bromofluorobenzene		170 %	80-1	20	n	"	п	"	S-0
Gasoline Range Organics C6-C12	5760	20.0	mg/kg dry	2	EA60315	01/03/06	01/03/06	EPA 8015M	
Diesel Range Organics >C12-C35	22500	20.0	*1	11	н	"	11	u	
Total Hydrocarbon C6-C35	28300	20.0	н	н	н	н	u	n	
Surrogate: 1-Chlorooctane		119 %	70-1	30	"	"	"	11	n fer a garage a f an a gar namer a randon (a name a rina
Surrogate: 1-Chlorooctadecane		89.8 %	70-1	30	"	"	"	"	
AH-1 2-2.5' (5L30010-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA60912	01/09/06	01/09/06	EPA 8021B	
Toluene	ND	0.0250	"	11	17	u	*	U	
Ethylbenzene	ND	0.0250	u		"	ч	u	н	
Xylene (p/m)	J [0.0239]	0.0250	*1	н	"	u	а	n	
Xylene (0)	ND	0.0250	17	n	II	11	11	11	
Surrogate: a,a,a-Trifluorotoluene		84.5 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	80-1	20	"	"	"	"	
Gasoline Range Organics C6-C12	31.7	10.0	mg/kg dry	1	EA60315	01/03/06	01/04/06	EPA 8015M	
Diesel Range Organics >C12-C35	279	10.0	u		**		11		
Total Hydrocarbon C6-C35	311	10.0			н	H	H	B.	
Environmental Lab of Texas			The re	sults in th	is report our	by to the same	alan anahmad i	n accordance with	

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.

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Project: Pogo/ State 2 Well #2 (Flowline) Project Number: 2526 Project Manager: Ike Tavarez

# Organics by GC Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
AH-1 2-2.5' (5L30010-03) Soil									
Surrogate: 1-Chlorooctane		116 %	70-1	30	EA60315	01/03/06	01/04/06	EPA 8015M	
Surrogate: 1-Chlorooctadecane		122 %	70-1	30	"	"	"	"	
AH-2 0-1' (5L30010-09) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA60314	01/03/06	01/05/06	EPA 8021B	
Toluene	ND	0.0250	a	11		u		11	
Ethylbenzene	ND	0.0250	u	п	н	н	н	н	
Xylene (p/m)	ND	0.0250	**	**	"	H	n	11	
Xylene (o)	ND	0.0250	*1	11	**	н		ti	
Surrogate: a,a,a-Trifluorotoluene		96.0 %	80-1	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	80-1	120	"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA60315	01/03/06	01/03/06	EPA 8015M	
Diesel Range Organics >C12-C35	25.4	10.0	11	u	u	11	11	17	
Total Hydrocarbon C6-C35	25.4	10.0	R	u	u	11	"		
Surrogate: 1-Chlorooctane		102 %	70-,	130	"	"	"		
Surrogate: 1-Chlorooctadecane		105 %	70	130	"	"	"	"	
AH-2 1-1.5' (5L30010-10) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA60315	01/03/06	01/03/06	EPA 8015M	
Diesel Range Organics >C12-C35	<b>J [9.80</b> ]	10.0	"	"	"	"	ч	11	
Total Hydrocarbon C6-C35	ND	10.0	и	н	14	в	11	п	
Surrogate: 1-Chlorooctane		109 %	70-,	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		111 %	70	130	"	"	"	n	
AH-3 0-1' (5L30010-14) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA60314	01/03/06	01/03/06	EPA 8021B	
Toluene	0.0352	0.0250		и		11	*1	н	
Ethylbenzene	0.0995	0.0250	"	н		U	11		
Xylene (p/m)	0.323	0.0250	n	U	15	51	U	"	
Xylene (o)	0.139	0.0250	н	14	15	"	*1	"	
Surrogate: a,a,a-Trifluorotoluene		103 %	80-1	120	"	n	"	U U	
Surrogate: 4-Bromofluorobenzene		165 %	80-1	120	"	"			S-04
Gasoline Range Organics C6-C12	245	10.0	mg/kg dry	1	EA60315	01/03/06	01/03/06	EPA 8015M	
Diesel Range Organics >C12-C35	1690	10.0	н	п		"	11	53	
Total Hydrocarbon C6-C35	1940	10.0	n	н	"	U	n	n	
Surrogate: 1-Chlorooctane		102 %	70-	130	"	"	n	"	
Surrogate: 1-Chlorooctadecane		119 %	70-		"	"	"	"	

Environmental Lab of Texas

Project: Pogo/ State 2 Well #2 (Flowline) Project Number: 2526 Project Manager: Ike Tavarez

# Organics by GC

**Environmental Lab of Texas** 

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
AH-3 1-1.5' (5L30010-15) Soil									
Benzene	6.26	0.500	mg/kg dry	500	EA60314	01/03/06	01/04/06	EPA 8021B	
Toluene	38.2	0.500	11	11	Ħ	н	11	H	
Ethylbenzene	35.0	0.500	11	н	11	11	u	21	
Xylene (p/m)	76.7	0.500	"	17	н	"	"	"	
Xylene (0)	34.9	0.500	II	11	11	11	n	u 	
Surrogate: a,a,a-Trifluorotoluene		345 %	80-1	20	**	"	11	11	S-0-
Surrogate: 4-Bromofluorobenzene		166 %	80-1	20	"	"	"	"	S-0-
Gasoline Range Organics C6-C12	6880	20.0	mg/kg dry	2	EA60315	01/03/06	01/03/06	EPA 8015M	
Diesel Range Organics >C12-C35	19100	20.0	n	u	ч	"	u	n	
Total Hydrocarbon C6-C35	26000	20.0	H	u	ч	H	**	n	
Surrogate: 1-Chlorooctane		123 %	70-1	130	11	n	"	11	
Surrogate: 1-Chlorooctadecane		106 %	70-1	130	"	"	"	"	
AH-3 2-2.5' (5L30010-16) Soil									
Gasoline Range Organics C6-C12	4700	20.0	mg/kg dry	2	EA60315	01/03/06	01/03/06	EPA 8015M	
Diesel Range Organics >C12-C35	14000	20.0	18	*	11	"	"	**	•
Total Hydrocarbon C6-C35	18700	20.0	#1	11	u	H	u	н	
Surrogate: 1-Chlorooctane		108 %	70-1	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		92.8 %	70-1	130	"	"	"	"	
AH-3 3-3.5' (5L30010-17) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EA60912	01/09/06	01/09/06	EPA 8021B	
Toluene	ND	0.0250	u	u	ų	n	**	"	
Ethylbenzene	0.0956	0.0250	H	n	"	n	11	π	
Xylene (p/m)	0.388	0.0250	11	н	"	n	*	Ð	
Xylene (o)	0.185	0.0250	ti	"	"	n	n		
Surrogate: a,a,a-Trifluorotoluene		88.8 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.2 %	80-1	20	"	"	"	**	
Gasoline Range Organics C6-C12	176	10.0	mg/kg dry	1	EA60907	01/09/06	01/10/06	EPA 8015M	
Diesel Range Organics >C12-C35	728	10.0	n	"	19	"	"	IF	
Total Hydrocarbon C6-C35	904	10.0	11	n	n	ų	u		
Surrogate: 1-Chlorooctane		92.8 %	70-1	130	н	"	"	"	
Surrogate: 1-Chlorooctadecane		384 %	70-1	130	"	"	"	"	S-0

**Reported:** 01/10/06 12:13

# Organics by GC

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-4 0-1' (5L30010-20) Soit							,	······································	
Benzene	ND	0.0250	mg/kg dry	25	EA60314	01/03/06	01/05/06	EPA 8021B	
Toluene	ND	0.0250	n		n	н	"	<b>11</b>	
Ethylbenzene	ND	0.0250	11			"	11	н	
Xylene (p/m)	ND	0.0250	n	"	"	u	"	н	
Xylene (0)	ND	0.0250	'n	н	**	น	н	u.	
Surrogate: a,a,a-Trifluorotoluene		90.8 %	80-12	20	"	"	11	"	
Surrogate: 4-Bromofluorobenzene		113 %	80-12	20	"	"	"	"	
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA60315	01/03/06	01/04/06	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	11	11	н	"	"	п	
Total Hydrocarbon C6-C35	ND	10.0	a	a	a	ч		u.	
Surrogate: 1-Chlorooctane		96.4 %	70-13	30	"	"	"	11	an a
Surrogate: 1-Chlorooctadecane		98.8 %	70-13	30	"	"	"	"	
AH-4 1-1.5' (5L30010-21) Soil			_						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA60315	01/03/06	01/04/06	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	11	"	n	u	· 11	u	
Total Hydrocarbon C6-C35	ND	10.0	11	"	"	n	*	11	
Surrogate: 1-Chlorooctane		102 %	70-13	30	"	"	и	0	
Surrogate: 1-Chlorooctadecane		105 %	70-13	80	"	"	"	11	

# General Chemistry Parameters by EPA / Standard Methods

**Environmental Lab of Texas** 

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
AH-1 0-1' (5L30010-01) Soil						·			
Chloride	4950	100	mg/kg	200	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	3.3	0.1	%	1	EA60401	01/03/06	01/04/06	% calculation	
AH-1 1-1.5' (5L30010-02) Soil									
Chloride	4690	100	mg/kg	200	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	3.4	0.1	%	i	EA60401	01/03/06	01/04/06	% calculation	
AH-1 2-2.5' (5L30010-03) Soil			÷						
Chloride	4750	100	mg/kg	200	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	1.6	0.1	%	I	EA60401	01/03/06	01/04/06	% calculation	
AH-1 3-3.5' (5L30010-04) Soil									
Chloride	6260	100	mg/kg	200	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-1 4-4.5' (5L30010-05) Soil									
Chloride	15000	200	mg/kg	400	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-1 5-5.5' (5L30010-06) Soil									
Chloride	15400	200	mg/kg	400	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-1 6-6.5' (5L30010-07) Soil									
Chloride	18000	200	mg/kg	400	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-1 7-7.5' (5L30010-08) Soil									
Chloride	17400	200	mg/kg	400	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-2 0-1' (5L30010-09) Soil									
Chloride	33.9	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	1.1	0.1	%	1	EA60401	01/03/06	01/04/06	% calculation	

Environmental Lab of Texas

#### 01/10/06 12:13

# General Chemistry Parameters by EPA / Standard Methods

**Environmental Lab of Texas** 

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-2 1-1.5' (5L30010-10) Soil						Tepared	Analyzeu		
Chloride	26.6	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	2.0	0.1	%	1	EA60401	01/03/06	01/04/06	% calculation	
AH-2 2-2.5' (5L30010-11) Soil									
Chloride	25.5	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-2 3-3.5' (5L30010-12) Soil									
Chloride	20.8	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-2 4-4.5' (5L30010-13) Soil									
Chloride	21.4	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-3 0-1' (5L30010-14) Soil									
Chloride	415	10.0	mg/kg	20	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	1.5	0.1	%	1	EA60401	01/03/06	01/04/06	% calculation	
AH-3 1-1.5' (5L30010-15) Soil									
Chloride	331	10.0	mg/kg	20	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	3.0	0.1	%	1	EA60401	01/03/06	01/04/06	% calculation	
AH-3 2-2.5' (5L30010-16) Soil									
Chloride	30.0	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	2.3	0.1	%	1	EA60401	01/03/06	01/04/06	% calculation	
AH-3 3-3.5' (5L30010-17) Soil									
Chloride	111	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	1.5	0.1	%	1	EA61001	01/09/06	01/10/06	% calculation	
AH-3 4-4.5' (5L30010-18) Soil									
Chloride	7080	100	mg/kg	200	EA60504	01/03/06	01/05/06	EPA 300.0	

Environmental Lab of Texas

# General Chemistry Parameters by EPA / Standard Methods

**Environmental Lab of Texas** 

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AH-3 5-5.5' (5L30010-19) Soil									
Chloride	22200	200	mg/kg	400	EA60504	01/03/06	01/05/06	EPA 300.0	
AH-4 0-1' (5L30010-20) Soil									
Chloride	39.7	5.00	mg/kg	10	EA60504	01/03/06	01/05/06	EPA 300.0	
% Moisture	1.3	0.1	%	1	EA60401	01/03/06	01/04/06	% calculation	
AH-4 1-1.5' (5L30010-21) Soil									
Chloride	26.4	5.00	mg/kg	10	EA60506	01/05/06	01/05/06	EPA 300.0	
% Moisture	2.3	0.1	%	ì	EA60401	01/03/06	01/04/06	% calculation	
AH-4 2-2.5' (5L30010-22) Soil									
Chloride	20.7	5.00	mg/kg	10	EA60506	01/05/06	01/05/06	EPA 300.0	
AH-4 3-3.5' (5L30010-23) Soil									
Chloride	22.4	5.00	mg/kg	10	EA60506	01/05/06	01/05/06	EPA 300.0	
AH-4 4-4.5' (5L30010-24) Soil									
Chloride	34.0	5.00	mg/kg	10	EA60506	01/05/06	01/05/06	EPA 300.0	

Environmental Lab of Texas

**Environmental Lab of Texas** 

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA60314 - EPA 5030C (GC)										
Blank (EA60314-BLK1)				Prepared a	& Analyze	ed: 01/03/0	06			
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	11							
Ethylbenzene	ND	0.0250	11							
Xylene (p/m)	ND	0.0250	11							
Xylene (o)	ND	0.0250	19							
Surrogate: a,a,a-Trifluorotoluene	34.3		ug/kg	40.0	<u></u>	85.8	80-120			
Surrogate: 4-Bromofluorobenzene	46.5		"	40.0		116	80-120			
LCS (EA60314-BS1)		<u>.</u>		Prepared:	01/03/06	Analyzed	: 01/04/06			
Benzene	0.0535	0.00100	mg/kg wet	0.0500		107	80-120			
Toluene	0.0507	0.00100	11	0.0500		101	80-120			
Ethylbenzene	0.0516	0.00100	11	0.0500		103	80-120			
Xylene (p/m)	0.0987	0.00100	n	0.100		98.7	80-120			
Xylene (o)	0.0496	0.00100	н	0.0500		99.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	37.7		ug/kg	40.0		94.2	80-120			
Surrogate: 4-Bromofluorobenzene	35.2		n	40.0		88.0	80-120			
LCS Dup (EA60314-BSD1)				Prepared	& Analyze	ed: 01/03/	06			
Benzene	0.0568	0.00100	mg/kg wet	0.0500		114	80-120	6.33	20	
Toluene	0.0549	0.00100	U	0.0500		110	80-120	8.53	20	
Ethylbenzene	0.0566	0.00100	0	0.0500		113	80-120	9.26	20	
Xylene (p/m)	0.111	0.00100	n	0.100		111	80-120	11.7	20	
Xylene (0)	0.0554	0.00100	н	0.0500		111	80-120	11.2	20	
Surrogate: a,a,a-Trifluorotoluene	39.5		ug/kg	40.0		98.8	80-120			
Surrogate: 4-Bromofluorobenzene	40.0		"	40.0		100	80-120			
Calibration Check (EA60314-CCV1)				Prepared:	01/03/06	Analyzed	: 01/05/06			
Benzene	51.5		ug/kg	50.0		103	80-120			
Toluene	50.9		H	50.0		102	80-120			
Ethylbenzene	54.3		H	50.0		109	80-120			
Xylene (p/m)	104		11	100		104	80-120			
Xylene (o)	54.8		11	50.0		110	80-120			
Surrogate: a,a,a-Trifluorotoluene	38.0		"	40.0		95.0	80-120			
Surrogate: 4-Bromofluorobenzene	44,5		"	40.0		111	80-120			

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**Reported:** 01/10/06 12:13

#### **Organics by GC - Quality Control**

**Environmental Lab of Texas** 

		Reporting		Spike	Source		%REC		, RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
										the second s

#### Batch EA60314 - EPA 5030C (GC)

Matrix Spike (EA60314-MS1)	Sou	irce: 6A040	03-02	Prepared:	01/03/06	6 Analyzed: 01/06/06	
Benzene	0.0535	0.00100	mg/kg dry	0.0536	ND	99.8	80-120
Toluene	0.0549	0.00100	**	0.0536	ND	102	80-120
Ethylbenzene	0.0642	0.00100	u	0.0536	ND	120	80-120
Xylene (p/m)	0.128	0.00100	U	0.107	ND	120	80-120
Xylene (0)	0.0630	0.00100	n	0.0536	ND	118	80-120
Surrogate: a,a,a-Trifluorotoluene	39.2		ug/kg	40.0		98.0	80-120
Surrogate: 4-Bromofluorobenzene	46.3		"	40.0		116	80-120

#### Batch EA60315 - Solvent Extraction (GC)

Blank (EA60315-BLK1)				Prepared & A	nalyzed: 01/03/0	6				
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	47.7		mg/kg	50.0	95.4	70-130				
Surrogate: I-Chlorooctadecane	47.8		"	50.0	95.6	70-130				
LCS (EA60315-BS1)	Prepared & Analyzed: 01/03/06									
Gasoline Range Organics C6-C12	474	10.0	mg/kg wet	500	94.8	75-125	name and a state of the property of the second state of the second state of the second state of the second state			
Diesel Range Organics >C12-C35	456	10.0	11	500	91.2	75-125				
Total Hydrocarbon C6-C35	930	10.0	**	1000	93.0	75-125				
Surrogate: 1-Chlorooctane	52.3		mg/kg	50.0	105	70-130				
Surrogate: 1-Chlorooctadecane	50.6		"	50.0	101	70-130				
Calibration Check (EA60315-CCV1)				Prepared: 01/0	03/06 Analyzed	: 01/04/06				
Gasoline Range Organics C6-C12	467		mg/kg	500	93.4	80-120				
Diesel Range Organics >C12-C35	461		н	500	92.2	80-120				
Total Hydrocarbon C6-C35	928		н	1000	92.8	80-120				
Surrogate: 1-Chlorooctane	51.5		"	50.0	103	70-130				

50.0

49.8

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Surrogate: 1-Chlorooctadecane

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99.6

70-130

#### **Environmental Lab of Texas**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch EA60315 - Solvent Extraction (GC)

Matrix Spike (EA60315-MS1)	Sour	Source: 5L30010-03 Prepared & Analyzed: 01/03/06							
Gasoline Range Organics C6-C12	502	10.0 mg/kg dry	508	31.7	92.6	75-125			
Diesel Range Organics >C12-C35	708	10.0 "	508	279	84.4	75-125			
Total Hydrocarbon C6-C35	1210	10.0 "	1020	311	88.1	75-125			
Surrogate: 1-Chlorooctane	49.2	mg/kg	50.0		98.4	70-130			
Surrogate: 1-Chlorooctadecane	50.0	"	50.0		100	70-130			
Matrix Spike Dup (EA60315-MSD1)	Sour	ce: 5L30010-03	Prepared	& Analyz	ed: 01/03/	/06			
Gasoline Range Organics C6-C12	461	10.0 mg/kg dry	508	31.7	84.5	75-125	8.52	20	and an an an array of the second s
Diesel Range Organics >C12-C35	725	10.0 "	· 508	279	87.8	75-125	2.37	20	
Total Hydrocarbon C6-C35	1190	10.0 "	1020	311	86.2	75-125	1.67	20	
Surrogate: 1-Chlorooctane	52.9	mg/kg	50.0		106	70-130			

50.0

101

70-130

#### Batch EA60907 - Solvent Extraction (GC)

50.3

Surrogate: 1-Chlorooctadecane

Blank (EA60907-BLK1)			Prepared: 01/09/06 Analyzed: 01/10/06							
Gasoline Range Organics C6-C12	ND	10.0 mg/kg wet				alan of FMM-anno a second and a final second se				
Diesel Range Organics >C12-C35	ND	10.0 "								
Total Hydrocarbon C6-C35	ND	10.0 "								
Surrogate: 1-Chlorooctane	38.6	mg/kg	50.0	77.2	70-130					
Surrogate: 1-Chlorooctadecane	36.2	"	50.0	72.4	70-130					
LCS (EA60907-BS1)			Prepared & Ai	nalyzed: 01/09/	06					
Gasoline Range Organics C6-C12	426	10.0 mg/kg wet	500	85.2	75-125	and a first state of a sum of				
Diesel Range Organics >C12-C35	395	10.0 "	500	79.0	75-125					
Total Hydrocarbon C6-C35	821	10.0 "	1000	82.1	75-125					
Surrogate: 1-Chlorooctane	42.5	mg/kg	50.0	85.0	70-130					
Surrogate: 1-Chlorooctadecane	45.9	"	50.0	91.8	70-130					

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#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA60907 - Solvent Extraction (							2.11113			Trotes
Calibration Check (EA60907-CCV1)				Prepared	01/09/06	Analyzed	l: 01/10/06	<u></u>	· · · · · · · ·	
Gasoline Range Organics C6-C12	416		mg/kg	500	01/07/00	83.2	80-120			
Diesel Range Organics >C12-C35	400		"	500		80.0	80-120			
Total Hydrocarbon C6-C35	816		11	1000		81.6	80-120 80-120			
Surrogate: 1-Chlorooctane	51.8	·····	n	50.0	· ···	104	70-130			
Surrogate: 1-Chlorooctadecane	43.9		"	50.0		87.8	70-130			
Matrix Spike (EA60907-MS1)	So	urce: 6A070	01-01	Prepared	& Analyz	ed: 01/09/	06			
Gasoline Range Organics C6-C12	455	10.0	mg/kg dry	549	ND	82.9	75-125			
Diesel Range Organics >C12-C35	518	10.0	It	549	ND	94.4	75-125			
Total Hydrocarbon C6-C35	973	10.0	11	1100	ND	88.5	75-125			
Surrogate: 1-Chlorooctane	52.3		mg/kg	50.0		105	70-130			
Surrogate: 1-Chlorooctadecane	45.3		"	50.0		90.6	70-130			
Matrix Spike Dup (EA60907-MSD1)	So	urce: 6A070	01-01	Prepared	& Analyz	ed: 01/09/	06			
Gasoline Range Organics C6-C12	450	10.0	mg/kg dry	549	ND	82.0	75-125	1.10	20	
Diesel Range Organics >C12-C35	506	10.0	<b>f</b> 1	549	ND	92.2	75-125	2.34	20	
Total Hydrocarbon C6-C35	956	10.0	H	1100	ND	86.9	75-125	1.76	20	
Surrogate: 1-Chlorooctane	51.6		mg/kg	50.0		103	70-130			
Surrogate: 1-Chlorooctadecane	47.9		"	50.0		95.8	70-130			
Batch EA60912 - EPA 5030C (GC)										
Blank (EA60912-BLK1)				Prepared	& Analyz	ed: 01/09/	06			
Benzene	ND	0.0250	mg/kg wet	·····						
Toluene	ND	0.0250	"							

1 of define	1.2	0.0200				
Ethylbenzene	ND	0.0250				
Xylene (p/m)	ND	0.0250	11			
Xylene (o)	ND	0.0250	17			
Surrogate: a,a,a-Trifluorotoluene	36.8		ug/kg	40.0	92.0	80-120
Surrogate: 4-Bromofluorobenzene	44.2		11	40.0	110	80-120

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**Environmental Lab of Texas** 

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA60912 - EPA 5030C (GC)										
LCS (EA60912-BS1)				Prepared:	01/09/06	Analyzed	1: 01/10/06			
Benzene	1.45	0.0250	mg/kg wet	1.25		116	80-120	***		nar menaris takan sakar isa aka
Toluene	1.41	0.0250	R	1.25		113	80-120			
Ethylbenzene	1.42	0.0250		1.25		114	80-120			
Xylene (p/m)	2.99	0.0250	н	2.50		120	80-120			
Xylene (o)	1.45	0.0250	11	1.25		116	80-120			
Surrogate: a,a,a-Trifluorotoluene	39.6		ug/kg	40.0		99.0	80-120		· · · · · · · · · · · · · · · · · · ·	
Surrogate: 4-Bromofluorobenzene	44.5		"	40.0		111	80-120			
Calibration Check (EA60912-CCV1)				Prepared:	01/09/06	Analyzed	1: 01/10/06			
Benzene	55.6		ug/kg	50.0		111	80-120			
Toluene	55.0		н	50.0		110	80-120			
Ethylbenzene	52.4		11	50.0		105	80-120			
Xylene (p/m)	109		u.	100		109	80-120			
Xylene (o)	53.8		и	50.0		108	80-120			
Surrogate: a,a,a-Trifluorotoluene	36.8		n	40.0		92.0	80-120			
Surrogate: 4-Bromofluorobenzene	36.5		"	40.0		91.2	80-120			
Matrix Spike (EA60912-MS1)	Source: 6A09004-03		Prepared:	01/09/06	Analyzed	I: 01/10/06				
Benzene	1.56	0.0250	mg/kg dry	1.34	ND	116	80-120			
Toluene	1.55	0.0250	11	1.34	ND	116	80-120			
Ethylbenzene	1.54	0.0250	*1	1.34	ND	115	80-120			
Xylene (p/m)	3.18	0.0250	n	2.69	ND	118	80-120			
Xylene (0)	1.58	0.0250	n	1.34	ND	118	80-120			
Surrogate: a,a,a-Trifluorotoluene	38.5	·····	ug/kg	40.0		96.2	80-120			
Surrogate: 4-Bromofluorobenzene	46.3		"	40.0		116	80-120			
Matrix Spike Dup (EA60912-MSD1)	Source: 6A09004-03		Prepared: 01/09/06 Analyzed: 01/10/06							
Benzene	1.54	0.0250	mg/kg dry	1.34	ND	115	80-120	0.866	20	
Toluene	1.53	0.0250	U	1.34	ND	114	80-120	1.74	20	
Ethylbenzene	1.52	0.0250	н	1.34	ND	113	80-120	1.75	20	
Xylene (p/m)	3.20	0.0250	"	2.69	ND	119	80-120	0.844	20	
Xylene (0)	1.57	0.0250	n	1.34	ND	117	80-120	0.851	20	
Surrogate: a,a,a-Trifluorotoluene	38.9		ug/kg	40.0		97.2	80-120			
Surrogate: 4-Bromofluorobenzene	45.5		"	40.0		114	80-120			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA60401 - General Preparation	(Prep)									
Blank (EA60401-BLK1)				Prepared:	01/03/06	Analyzed	: 01/04/06			
% Solids	100		%							
Duplicate (EA60401-DUP1)	So	urce: 5L3001	0-01	Prepared:	01/03/06	Analyzed	: 01/04/06			
% Solids	95.7		%		96.7			1.04	20	
Batch EA60504 - Water Extraction										
Blank (EA60504-BLK1)				Prepared:	01/03/06	Analyzed	: 01/05/06			
Chloride	ND	0.500	mg/kg	* - * 11 i i i i i i i i i i i i i i i i i						
LCS (EA60504-BS1)				Prepared:	01/03/06	Analyzed	: 01/05/06			
Chloride	9.58		mg/L	10.0		95.8	80-120			
Calibration Check (EA60504-CCV1)				Prepared:	01/03/06	Analyzed	: 01/05/06			
Chloride	8.27		mg/L	10.0		82.7	80-120			
Duplicate (EA60504-DUP1)	So	urce: 5L3001	0-01	Prepared:	01/03/06	Analyzed	l: 01/05/06			
Chloride	5100	100	mg/kg		4950			2.99	20	
Batch EA60506 - Water Extraction										
Blank (EA60506-BLK1)				Prepared	& Analyz	ed: 01/05/0	06			
Chloride	ND	0.500	mg/kg							
LCS (EA60506-BS1)				Prepared	& Analyz	ed: 01/05/0	06			
Chloride	8.22		mg/Ľ	10.0		82.2	80-120			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA60506 - Water Extraction							<b>.</b>			
Calibration Check (EA60506-CCV1)				Prepared	& Analyze	d: 01/05/	06			
Chloride	8.74		mg/L	10.0		87.4	80-120			
Duplicate (EA60506-DUP1)	Soi	irce: 5L3001	0-21	Prepared	& Analyze	ed: 01/05/	06			
Chloride	31.4	5.00	mg/kg		26.4			17.3	20	
Batch EA61001 - General Preparation	n (Prep)	·			01/00/06		01/10/06			
Blank (EA61001-BLK1)	100			Prepared:	01/09/06	Analyzeo	: 01/10/06			
	100		%							
% Solids										
	Sou	irce: 6A070(		Prepared:	01/09/06	Analyzed	: 01/10/06			
% Solids Duplicate (EA61001-DUP1) % Solids	<b>So</b> 90.1	srce: 6A0700		Prepared:	01/09/06 91.0	Analyzed	: 01/10/06	0.994	20	
Duplicate (EA61001-DUP1)	90.1	ırce: 6A070( ırce: 6A090(	01-01 %		91.0		: 01/10/06	0.994	20	

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#### **Notes and Definitions**

- The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or S-06 matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). J
- Analyte DETECTED DET
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- Sample results reported on a dry weight basis dry
- Relative Percent Difference RPD
- LCS Laboratory Control Spike
- MS Matrix Spike
- Dup Duplicate

Report Approved By: Kalandk Jul

Date: 1-10-06

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.

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Environmental Lab of Texas
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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.

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

Client:	Highlander
Date/Time:	$O_{1}$
Order #:	5130010
Initials:	CK

### Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	3,5 C
Shipping container/cooler in good condition?	ছে	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?	Æs	No	
Sample Instructions complete on Chain of Custody?	) Čes	No	
Chain of Custody signed when relinquished and received?	Č	No	
Chain of custody agrees with sample label(s)	æs	No	
Container labels legible and intact?	<i>i</i> es	No	
Sample Matrix and properties same as on chain of custody?	Čes.	No	
Samples in proper container/bottle?	Yes	No	
Samples properly preserved?	Yas	No	
Sample bottles intact?	<b>E</b>	No	
Preservations documented on Chain of Custody?	¥eş	No	
Containers documented on Chain of Custody?	G	No	
Sufficient sample amount for indicated test?	YES	No	
All samples received within sufficient hold time?	YES	No	
VOC samples have zero headspace?	G	No	Not Apolicable

Other observations:

\_\_\_\_\_

Contact Person: Regarding:	Variance Documentation: Date/Time:	_ Contacted by:	
		······································	
Corrective Action Taken:			
••••••••••••••••••••••••••••••••••••••			
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### Jeanne McMurrey

From:"Ike T" <itavarez@hec-enviro.com>To:"Jeanne - Enviro Lab" <jeanne@elabtexas.com>Sent:Monday, January 09, 2006 9:12 AMSubject:Request additional analyses

Jeanne,

Pogo Producing Company – State 2 Well #2 (flow line) Eddy County, New Mexico

Lab Order: 5L30010 - Report Date 1/6/06

Please run additional analyses on:

AH-1 (2-2.5') - BTEX AH-3 (3-3.5') – TPH and BTEX (if TPH exceeds 5,000 mg/kg, run deeper sample (4-4.5') for TPH and BTEX)

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

F	- <u></u>						ting::interimenting				<u></u>			-					191													
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	(432	2) 682-	4559	<u>-</u>							Fax	(43	r – í –								6	C S			2	52		P				
	CLIENT NA		90 V.	rod	lic.	ing		E 1	TAN	Wer 2		INERS		P1		THO	TIVE D			8015 MOD	Ba	As Ba C			80/8	8270/685		TDS, Chloride	/			
	PROJECT	NO.: 25	H	PR	ољ Ул	ct nai 0/5	HAle 2	2 we	U.	2 (Flow	stine)	OF CONTAINERS	(11/					808	1 1		Ac Ac	Ag As	683	Volatile	8240/8	Yol. P	808		(Air)	tos)		5
	LAB I.D. NUMBER	DATE	TIME	MATRIX	GRAB		SAM	d deg PLE 10	CU ENTIFI	2 (F/m LATION		NUMBER OF	121	HCL	HN03	ICE	NONE	BTEX 8020/802	NTBE 8020/808	TPH 418.1	PAH 8870 RCRA Metal	TCLP Metals Ag A	TCLP Volatiles	TCLP Semi Volatiles	RCI GC.MS Vol.	GC.MS Semi. Vol. B270/62	PCB's 8080/808 Pest. 808/808	BOD, TSS, pH.	Gamma Spec. Alaha Beta (I	PLM (Asbestos)		
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	-03			5	1	A	4-1	2-2	2,5			1				7		X		X								X				
	-04			5	1,	A	H	3-	3.5			1				7												X				
	705			5	1	1	H-1					1				7												X				
	706			5	1	AL	1-1	5-	5.5			1				1												X				
	707			X	١	Al	4-1	6-	-6.5	-		1				1												Y				
	-08			5		AF	4-1	7-	7.5	1		1				-												X				
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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.

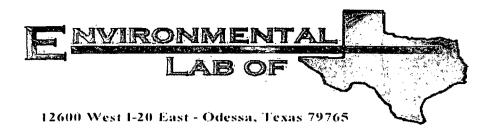
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	SAMPLE CONI	DITION WH	EN RECE					MAT	RIX:		Vater Soil		A-Air SL-Si			– <i>Solid</i> Other			R	еман З,		<u> </u>	l	'ab	elg	)	,												

Analytical Report 5/30/2006

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# Analytical Report

### Prepared for:

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

Project: Pogo/ State 2 Well #2 (Flowline) Project Number: 2526 Location: Eddy County, NM

Lab Order Number: 6E22004

Report Date: 05/30/06

Highlander Environmental Corp. 1910 N. Big Spring St. Midland TX, 79705	Project: Pogo/ State 2 Project Number: 2526 Project Manager: Ike Tavarez	? Well #2 (Flowline)		Fax: (432) 682-3946 Reported: 05/30/06 15:37
	ANALYTICAL REPORT FOR SAM	PLES		
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Receive
T-1 2.0'	6E22004-01	Soil	05/18/06 00:00	05/19/06 16:5
T-1 4.0'	6E22004-02	Soil	05/18/06 00:00	05/19/06 16:5
T-1 6.0'	6E22004-03	Soil	05/18/06 00:00	05/19/06 16:5
T-1 8.0'	6E22004-04	Soil	05/18/06 00:00	05/19/06 16:5
T-1 10.0 <sup>4</sup>	6E22004-05	Soil	05/18/06 00:00	05/19/06 16:5
T-1 12.0'	6E22004-06	Soil	05/18/06 00:00	05/19/06 16:5
T-1 14.0'	6E22004-07	Soil	05/18/06 00:00	05/19/06 16:5
T-2 2.0'	6E22004-08	Soil	05/18/06 00:00	05/19/06 16:5
<b>T-2</b> 4.0'	6E22004-09	Soil	05/18/06 00:00	05/19/06 16:5
T-2 6.0'	6E22004-10	Soil	05/18/06 00:00	05/19/06 16:5
T-2 8.0'	6E22004-11	Soil	05/18/06 00:00	05/19/06 16:
<b>T-2</b> 10.0 <sup>1</sup>	6E22004-12	Soil	05/18/06 00:00	05/19/06 16:5
F-2 12.0 <sup>4</sup>	6E22004-13	Soil	05/18/06 00:00	05/19/06 16:
Γ-2 14.0'	6E22004-14	Soil	05/18/06 00:00	05/19/06 16:
Γ-3 2.0'	6E22004-15	Soil	05/18/06 00:00	05/19/06 16::
Γ-3 4.0'	6E22004-16	Soil	05/18/06 00:00	05/19/06 16::
Γ-3 6.0'	6E22004-17	Soil	05/18/06 00:00	05/19/06 16::
ľ-3 8.0'	6E22004-18	Soil	05/18/06 00:00	05/19/06 16::
Γ-4 2.0'	6E22004-19	Soil	05/18/06 00:00	05/19/06 16::
Γ-4 4.0'	6E22004-20	Soil	05/18/06 00:00	05/19/06 16::
Γ-4 6.0'	6E22004-21	Soil	05/18/06 00:00	05/19/06 16:5
Τ-4 8.0'	6E22004-22	Soil	05/18/06 00:00	05/19/06 16:5
Γ-4 10.0'	6E22004-23	Soil	05/18/06 00:00	05/19/06 16:5
Τ-5 2.0'	6E22004-24	Soil	05/18/06 00:00	05/19/06 16:5
Γ-5 4.0'	6E22004-25	Soil	05/18/06 00:00	05/19/06 16:5
Γ-5 6.0'	6E22004-26	Soil	05/18/06 00:00	05/19/06 16:5
<b>F-6</b> 2.0'	6E22004-27	Soil	05/18/06 00:00	05/19/06 16:5
<b>Г-6</b> 4.0'	6E22004-28	Soil	05/18/06 00:00	05/19/06 16:
I-6 6.0 <sup>4</sup>	6E22004-29	Soil	05/18/06 00:00	05/19/06 16::
r-6 8.0'	6E22004-30	Soil	05/18/06 00:00	05/19/06 16:5
F-6 10.0'	6E22004-31	Soil	05/18/06 00:00	05/19/06 16::
`-7 2.0'	6E22004-32	Soil	05/18/06 00:00	05/19/06 16::
<b>~-7</b> 4.0'	6E22004-33	Soil	05/18/06 00:00	05/19/06 16:5
F-7 6.0 <sup>v</sup>	6E22004-34	Soil	05/18/06 00:00	05/19/06 16:5

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Page 1 of 10

ſ	Highlander Environmental Corp.	Project:	Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
	1910 N. Big Spring St.	Project Number:	2526	Reported:
	Midland TX, 79705	Project Manager:	Ike Tavarez	05/30/06 15:37

Environmental Lab of Texas

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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.

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Highlander Environmental Corp.	Project: Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2526	Reported:
Midland TX, 79705	Project Manager: Ike Tavarez	05/30/06 15:37

#### **General Chemistry Parameters by EPA / Standard Methods**

		Environn	nental L	ab of Te	exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-1 2.0' (6E22004-01) Soil						······			
Chloride	5300	100	mg/kg	200	EE62503	05/25/06	05/25/06	EPA 300.0	
T-1 4.0' (6E22004-02) Soil									
Chloride	11400	500	mg/kg	1000	EE62503	05/25/06	05/25/06	EPA 300.0	
T-1 6.0' (6E22004-03) Soil		·····							
Chloride	11200	200	mg/kg	400	EE62503	05/25/06	05/25/06	EPA 300.0	
T-1 8.0' (6E22004-04) Soil									
Chloride	17400	250	mg/kg	500	EE62503	05/25/06	05/25/06	EPA 300.0	
T-1 10.0' (6E22004-05) Soit									
Chloride	5370	100	mg/kg	200	EE62503	05/25/06	05/25/06	EPA 300.0	
T-1 12.0' (6E22004-06) Soil							······································		
Chloride	3210	50.0	mg/kg	100	EE62503	05/25/06	05/25/06	EPA 300.0	
T-1 14.0' (6E22004-07) Soil									
Chloride	28.2	5.00	mg/kg	10	EE62503	05/25/06	05/25/06	EPA 300.0	
T-2 2.0' (6E22004-08) Soil									
Chloride	4820	100	mg/kg	200	EE62503	05/25/06	05/25/06	EPA 300.0	
T-2 4.0' (6E22004-09) Soil									
Chloride	7940	200	mg/kg	400	EE62503	05/25/06	05/25/06	EPA 300.0	
T-2 6.0' (6E22004-10) Soil							·		
Chloride	12800	200	mg/kg	400	EE62503	05/25/06	05/25/06	EPA 300.0	
T-2 8.0' (6E22004-11) Soil	····								
Chloride	14500	200	mg/kg	400	EE62503	05/25/06	05/25/06	EPA 300.0	

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Highlander Environmental Corp.	Project:	Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number:	2526	Reported:
Midland TX, 79705	Project Manager:	Ike Tavarez	05/30/06 15:37

#### General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-2 10.0' (6E22004-12) Soil	-								
Chloride	14200	200	mg/kg	400	EE62504	05/25/06	05/25/06	EPA 300.0	
T-2 12.0' (6E22004-13) Soil									<b>.</b>
Chloride	2900	50.0	mg/kg	100	EE62504	05/25/06	05/25/06	EPA 300.0	
T-2 14.0' (6E22004-14) Soil									
Chloride	268	10.0	mg/kg	20	EE62504	05/25/06	05/25/06	EPA 300.0	
T-3 2.0' (6E22004-15) Soil	·····								
Chloride	984	20.0	mg/kg	40	EE62504	05/25/06	05/25/06	EPA 300.0	
T-3 4.0' (6E22004-16) Soil									
Chloride	6620	100	mg/kg	200	EE62504	05/25/06	05/25/06	EPA 300.0	
T-3 6.0' (6E22004-17) Soil									
Chloride	382	10.0	mg/kg	20	EE62504	05/25/06	05/25/06	EPA 300.0	
T-3 8.0' (6E22004-18) Soil									
Chloride	23.2	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-4 2.0' (6E22004-19) Soil									
Chloride	21.6	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-4 4.0' (6E22004-20) Soil									
Chloride	14.9	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-4 6.0' (6E22004-21) Soil									
Chloride	10,500	200	mg/kg	400	EE62504	05/25/06	05/25/06	EPA 300.0	
T-4 8.0' (6E22004-22) Soil									
Chloride	23.7	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	

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1910 N. Big Spring St.	Project Number:	2526	Reported:
Midland TX, 79705	Project Manager:	Ike Tavarez	05/30/06 15:37

#### General Chemistry Parameters by EPA / Standard Methods

		Environn	nental L	lab of Te	exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-4 10.0' (6E22004-23) Soil							·		
Chloride	32.9	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-5 2.0' (6E22004-24) Soil									
Chloride	17.5	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-5 4.0' (6E22004-25) Soil									
Chloride	18.0	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-5 6.0' (6E22004-26) Soil									
Chloride	13.3	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-6 2.0' (6E22004-27) Soil									
Chloride	61.6	5.00	mg/kg	10	EE62504	05/25/06	05/25/06	EPA 300.0	
T-6 4.0' (6E22004-28) Soil									
Chloride	8870	200	mg/kg	400	EE62504	05/25/06	05/25/06	EPA 300.0	
T-6 6.0' (6E22004-29) Soil									
Chloride	10700	200	mg/kg	400	EE62504	05/25/06	05/25/06	EPA 300.0	
T-6 8.0' (6E22004-30) Soil	·····								
Chloride	5450	50.0	mg/kg	100	EE62504	05/25/06	05/25/06	EPA 300.0	
T-6 10.0' (6E22004-31) Soil									
Chloride	356	10.0	mg/kg	20	EE62504	05/25/06	05/25/06	EPA 300.0	
T-7 2.0' (6E22004-32) Soil									
Chloride	14.6	5.00	mg/kg	10	EE62605	05/26/06	05/26/06	EPA 300.0	
T-7 4.0' (6E22004-33) Soil									
Chloride	19.4	5.00	mg/kg	10	EE62605	05/26/06	05/26/06	EPA 300.0	

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Highlander Environmental Corp.	Project: Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2526	Reported:
Midland TX, 79705	Project Manager: Ike Tavarez	05/30/06 15:37

	Environmental Lab of Texas									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes	
T-7 6.0' (6E22004-34) Soil										
Chloride	13.9	5.00	mg/kg	10	EE62605	05/26/06	05/26/06	EPA 300.0		

Environmental Lab of Texas

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ſ	Highlander Environmental Corp.	Project:	Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
	1910 N. Big Spring St.	Project Number:	2526	Reported:
Ì	Midland TX, 79705	Project Manager:	Ike Tavarez	05/30/06 15:37

	1	Environm	iental L	ab of Te	as					
		Reporting		Spike	Source	where	%REC	200	RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EE62503 - Water Extraction									<u> </u>	
Blank (EE62503-BLK1)				Prepared &	Analyzed:	05/25/06				
Chloride	ND	0.500	mg/kg							
LCS (EE62503-BS1)				Prepared &	Analyzed:	05/25/06				
Chloride	10.7	0.500	mg/kg	10.0		107	80-120			
Calibration Check (EE62503-CCV1)		Prej			Analyzed:	05/25/06				
Chloride	9.84		mg/L	10.0		98.4	80-120			
Duplicate (EE62503-DUP1)	Source: 6E19010-07 Pre		Prepared &	Analyzed:	05/25/06					
Chloride	87.0	5.00	mg/kg		87.6			0.687	20	
Duplicate (EE62503-DUP2)	Sourc	ce: 6E22004-	02	Prepared &	Analyzed:	05/25/06				
Chłoride	11300	500	mg/kg		11400			0.881	20	
Matrix Spike (EE62503-MS1)	Sour	ce: 6E19010-	07	Prepared &	Analyzed:	05/25/06				
Chloride	188	5.00	mg/kg	100	87.6	100	80-120			
Matrix Spike (EE62503-MS2)	Sour	ce: 6E22004-	-02	Prepared &	Analyzed:	05/25/06				
Chloride	22100	500	mg/kg	10000	11400	107	80-120			
Batch EE62504 - Water Extraction										
Blank (EE62504-BLK1)				Prepared &	Analyzed:	05/25/06				
Chloride	ND	0.500	mg/kg				·			
LCS (EE62504-BS1)				Prepared &	Analyzed:	05/25/06				
Chloride	10.5	0.500	mg/kg	10.0		105	80-120			

Environmental Lab of Texas

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Highlander Environmental Corp.	Project: Pogo/	State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number: 2526		Reported:
Midland TX, 79705	Project Manager: Ike Ta	varez	05/30/06 15:37

#### **Environmental Lab of Texas**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EE62504 - Water Extraction										
Calibration Check (EE62504-CCV1)				Prepared &	Analyzed:	05/25/06				
Chloride	10.3		mg/L	10.0		103	80-120			
Duplicate (EE62504-DUP1)	Sou	ce: 6E22004	-12	Prepared &	Analyzed:	05/25/06				
Chloride	14400	200	mg/kg		14200			1.40	20	
Duplicate (EE62504-DUP2)	Sour	ce: 6E22004-	-22	Prepared &	Analyzed:	05/25/06				
Chloride	24,1	5.00	mg/kg	· · · · · · · · · · · · · · · · · · ·	23.7			1.67	20	
Matrix Spike (EE62504-MS1)	Sou	·ce: 6E22004-	-12	Prepared &	Analyzed:	05/25/06				
Chloride	20000	200	mg/kg	4000	14200	145	80-120		<u></u>	S-0
Matrix Spike (EE62504-MS2)	Source: 6E22004-22		Prepared & Analyzed: 05/25/06							
Chloride	120	5.00	mg/kg	100	23.7	96.3	80-120		·	
Batch EE62605 - Water Extraction										
Blank (EE62605-BLK1)				Prepared &	Analyzed:	05/26/06				
Chloride	ND	0.500	mg/kg							
LCS (EE62605-BS1)				Prepared &	Analyzed:	05/26/06				
Chloride	10.0	0.500	mg/kg	10.0		100	80-120			
Calibration Check (EE62605-CCV1)				Prepared &	Analyzed:	05/26/06				
Chloride	10.2		mg/kg	10.0		102	80-120			
Duplicate (EE62605-DUP1)	Sour	ce: 6E22004-	-32	Prepared &	Analyzed:	05/26/06				
Chloride	13.3	5.00	mg/kg		14.6			9.32	20	

Environmental Lab of Texas

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Highlander Environmental Corp.	Project:	Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St.	Project Number:	2526	Reported:
Midland TX, 79705	Project Manager:	Ike Tavarez	05/30/06 15:37

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	Kesuit		Units	Level	Kesun	76KEC			1,4114	Notes
Batch EE62605 - Water Extraction										
Duplicate (EE62605-DUP2)	Sourc	e: 6E23010-	02	Prepared &	Analyzed:	05/26/06				
Chloride	70.3	10.0	mg/kg		66.8			5.11	20	
Matrix Spike (EE62605-MS1)	Sourc	e: 6E22004-	32	Prepared & Analyzed: 05/26/06						
Chloride	103	5.00	mg/kg	100	14.6	88.4	80-120			
Matrix Spike (EE62605-MS2)	Source: 6E23010-02 Pre		Prepared & Analyzed: 05/26/06							
Chloride	257	10.0	mg/kg	200	66.8	95.1	80-120			

..

Environmental Lab of Texas

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Highlander Environmental Corp. Proje	ct: Pogo/ State 2 Well #2 (Flowline)	Fax: (432) 682-3946
1910 N. Big Spring St. Project Numb	er: 2526	Reported:
Midland TX, 79705 Project Manag	er: Ike Tavarez	05/30/06 15:37

#### **Notes and Definitions**

- S-07 Recovery outside Laboratory historical or method prescribed limits.
- 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 Junts Date:

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

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5/30/2006

ſ	Analysis Request and Chain of Custod	ly Record	PAGE: / OF: 4
t,	HIGHLANDER ENVIRONMENTAL		ANALYSIS REQUEST (Circle or Specify Method No.)
<u>c.</u>	1910 N. Big Spring St. Midland, Texas 79705		2000 2000 2000 2000 2000 2000 2000 200
		(432) 682-3946	8 KOD. 10/024 10/025
ail.	CLIENT NAME: Traducing Co. SITE MANAGER TAURCZ	METHOD	BOIS MOD. BOIS MOD. Band Ba Cd Llaa Band/e24 Band/e24
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	RELINGUISHED ET: (Sucherver) Date: 2-19-200 RECEIVED ET: (Succeture)	Date:	SAMPLES BY (Print & Sign) Date: Here (Martin & Sign) Date: Time:
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	RECEIVING LABORATORY: CONTACT: RECEIVED BY: (Signature) ADDRESS: CITY: CITY: C	5TL05: _/655	- INETAUGUEZ RUSS Charges Anthonised: Too No
ר ת י	SAMPLE CONDITION WHEN RECEIVED:     HATRIX:     Prior:     Date:	DELLA DATE.	

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

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	CLIENT NAME ROGO Producing SITE MARGER TONORIZ	INERS		P.		ERV. STHO	ATTVE DD			BOX5 MOD.		3 2 2				860/834	9310/0420		Chiertes					
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	SANOPLE CONDITION WHEN RECEIVED: W/labels U.OC UDZ class no seals B-Sall SL-Sludge 0-01600			R	EMAR	KS:			i							_					******			

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

Client:	Highlander
Date/Time:	5/19/06 16:55
Order #:	6E12004
Initials:	CL

## Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	4.0 CI
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	Notpreseni
Chain of custody present?	YES	No	
Sample Instructions complete on Chain of Custody?	Xes	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?	1 Yes	No	····· · · · · · · · · · · · · · · · ·
Samples properly preserved?	×(25)	No No	
Sample bottles intact?	Yes	No	
Preservations documented on Chain of Custody?	YES	I 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	Nct Apolicable

Other observations:

Variance Documentation:

·\_\_\_\_

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Contact Person: Regarding:	Date/Time:	Contacted by:
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	·	
Corrective Action Taken:		
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01/14/10

Technical Report for

**CRA West Chester** 

GHSI:PXP State 2 Well #2 Flow Line Leak/58447DM

SSOW #750-402-D002-1100

Accutest Job Number: T44472

Sampling Date: 12/14/09

Report to:

Conestoga Rovers & Associates 9033 Meridian Way West Chester, OH 45069 abown@craworld.com; pfowler@craworld.com; jeff.kindley@tetratech.com ATTN: Angela Bown

Total number of pages in report: 36



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Carrevaro

Paul Canevaro Laboratory Director



Client Service contact: Marianne Walker 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103) UT(7132714700)

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Gulf Coast • 10165 Harwin Drive • Suite 150 • Houston, TX 77036 • tel: 713-271-4700 • fax: 713-271-4770 • http://www.accutest.com

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<b>3.3:</b> T44472-3: T-6 6'	10
<b>3.4:</b> T44472-4: T-6 8'	11
<b>3.5:</b> T44472-5: T-6 10'	12
<b>3.6:</b> T44472-6: T-1 2'	13
<b>3.7:</b> T44472-7: T-1 4'	14
<b>3.8:</b> T44472-8: T-1 6'	15
<b>3.9:</b> T44472-9: T-1 8'	16
<b>3.10:</b> T44472-10: T-1 10'	17
<b>3.11:</b> T44472-11: T-2 2'	18
<b>3.12:</b> T44472-12: T-2 4'	19
<b>3.13:</b> T44472-13: T-2 6'	20
<b>3.14:</b> T44472-14: T-2 8'	21
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t form



## Sample Summary

### **CRA West Chester**

Job No: T44472

### GHSI:PXP State 2 Well #2 Flow Line Leak/58447DM Project No: SSOW #750-402-D002-1100

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
T44472-1	12/14/09	10:20 JD	12/19/09	SO	Soil	<b>T-6 2'</b> a set of the
T44472-2	12/14/09	10:26 JD	12/19/09	SO	Soil	T:6.4'
T44472-3	12/14/09	10:32 JD	12/19/09	SO	Soil	<b>T≈6,6'</b> ≥ <sup>2</sup>
T44472-4	12/14/09	10:38 JD	12/19/09	SO	Soil	<b>T-6 8'</b>
T44472-5	12/14/09	10:43 JD	12/19/09	SO	Soil	Ť-6 10 <sup>°</sup>
T44472-6	12/14/09	10:50 JD	12/19/09	SO	Soil	T-1.2. August and the second statements of the
T44472-7	12/14/09	10:55 JD	12/19/09	SO	Soil	$\mathbf{T}$ - $\mathbf{I}^{i}\mathbf{M}_{i,j}^{i}$ and $(\mathbf{T}_{i,j})$ are the first set of $\mathbf{T}_{i,j}$
T44472-8	12/14/09	11:00 JD	12/19/09	SO	Soil	Tel.6'
T44472-9	12/14/09	11:10 JD	12/19/09	SO	Soil	<b>-T-18</b> 17 - J
T44472-10	12/14/09	11:23 JD	12/19/09	SO	Soil	$T_{\rm e}^{1}$ 10 $\sim$ 10 $\sim$ 20
T44472-11	12/14/09	12:30 JD	12/19/09	SO	Soil	<b>T-2</b> 2 <sup>4</sup>
T44472-12	12/14/09	12:40 JD	12/19/09	SO	Soil	T-24 <sup>1</sup> (Section of the art of the sector)
T44472-13	12/14/09	12:50 JD	12/19/09	SO	Soil	

Soil samples reported on a dry weight basis unless otherwise indicated on result page.





### Sample Summary (continued)

CRA West Chester

Job No: T44472

### GHSI:PXP State 2 Well #2 Flow Line Leak/58447DM Project No: SSOW #750-402-D002-1100

Sample	Collected		N	fatrix	Client	
Number	Date	Time By	Received C	ode Type	Sample ID	
T44472-14	12/14/09	13:00 JD	12/19/09 S	O Soil	<b>T-2 8</b> <sup>1</sup>	<u> </u>
T44472-15	12/14/09	13:05 JD	12/19/09 S	O Soil	T-2 10'	

Soil samples reported on a dry weight basis unless otherwise indicated on result page.







### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	CRA West Chester	Job No	T44472
Site:	GHSI:PXP State 2 Well #2 Flow Line Leak/58447DM	Report Date	1/12/2010 12:26:54 PM

15 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 12/14/2009 and were received at Accutest on 12/19/2009 properly preserved, at 2.4 Deg. C and intact. These Samples received an Accutest job number of T44472. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. All Chloride samples were subcontracted to Accutest Mountain States due to instrument repair.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

#### Wet Chemistry By Method SM 2540 G

Matrix SO	Batch ID:	GN19692

• Sample(s) T44434-9DUP were used as the QC samples for Solids, Percent.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used









### CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Accutest Laboratories Gulf Coast, Inc.	Job No	T44472
Site:	CRAOHWC: GHSI Oxy State 2 Well #2 FI Leak	Report Dat	1/11/2010 11:49:55 AM

On 12/19/2009, 15 Samples were received at Accutest Laboratories. Samples were intact and properly preserved, unless noted below. An Accutest Job Number of T44472 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

#### Wet Chemistry By Method EPA 300/SW846 9056

Matrix S		GP1281	
	· · · · · · · · · · · · · · · · · · ·	······	

All samples were analyzed within the recommended method holding time.

• All method blanks for this batch meet method specific criteria.

Matrix Spike Recovery(s) for Chloride are outside control limits. Probable cause due to matrix interference.

P Matrix Spike Duplicate Recovery(s) for Chloride are outside control limits. Probable cause due to matrix interference.

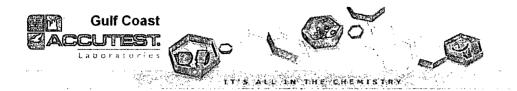
Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

Page 1 of 1





Section 3



# Sample Results

**Report of Analysis** 



	Page 1 of 1						
Client Sample ID: Lab Sample ID:	T-6 2' T44472-1			Date	Sampled: 12/14/		20002 (s <sup>.,</sup> /)
Matrix:	SO - Soil			Date	Received: 12/19/ nt Solids: 95.6		
Project:	GHSI:PXP State 2 Wel	ll #2 Flow	v Line Leak/				
General Chemistry	/						
Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride <sup>a</sup> Solids, Percent	27.9 95.6	26	mg/kg %	5 1	01/06/10 13:46 12/21/09	AA	EPA 300/SW846 9056 SM 2540 G

(a) Analysis performed by Accutest Mountain States



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Accutest Laboratories

Report of Analysis							Page 1 of 1	
Client Sample ID: Lab Sample ID: Matrix:	T-6 4' T44472-2 SO - Soil			Date ]	Sampled: 12/14/ Received: 12/19/			
Project: General Chemistry	GHSI:PXP State 2 Well	#2 Flow	/ Line Leak/		nt Solids: 93.6 4			
Analyte	Result	RL	Units	DF	Analyz <del>e</del> d	By	Method	
Chloride <sup>a</sup> Solids, Percent	107 93.6	27	mg/kg %	5 1	01/06/10 14:21 12/21/09	AA	EPA 300/SW846 9056 SM 2540 G	

(a) Analysis performed by Accutest Mountain States

3.2



#### Accutest Laboratories

		Repo	ort of An	alysis			Page 1 of 1
Client Sample ID: Lab Sample ID: Matrix:	T-6 6' T44472-3 SO - Soil			Date ]	Sampled: 12/14/ Received: 12/19/ nt Solids: 86.7		
Project: General Chemistry	GHSI:PXP State	2 Well #2 Flow	/ Line Leak/				
Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride <sup>a</sup> Solids, Percent	4040 86:7	140 (Mark)	mg/kg %	25 1	01/06/10 10:52 12/21/09	2 AA	EPA 300/SW846 9056 SM 2540 G

(a) Analysis performed by Accutest Mountain States



Accutest Laboratories

Report of Analysis							Page 1 of 1	
Client Sample ID:	T-6 8'		1	_				
Lab Sample ID:	T44472-4				Sampled: 12/14/			
Matrix:	SO - Soil	Date Received: 12/19/09						
				Perce	nt Solids: 90.9			
Project:	GHSI:PXP State 2 Well	#2 Flow	/ Line Leak/	58447DN	Л			
General Chemistry	/							
Analyte	Result	RL	Units	DF	Analyzed	By	Method	
Chloride <sup>a</sup>	12900	140	mg/kg	25	01/06/10 11:04		EPA 300/SW846 9056	
Solids, Percent	90.9		%	1	12/21/09	AA	SM 2540 G	

(a) Analysis performed by Accutest Mountain States



Report of Analysis											
Client Sample ID: Lab Sample ID:	T-6 10' T44472-5			Date	Sampled: 12/14/	09					
Matrix:	SO - Soil			Date 1	Received: 12/19/						
Project:	GHSI:PXP State 2 We	ll #2 Flow	/ Line Leak/		nt Solids: 95.2 A						
General Chemistry	r										
Analyte	Result	RL	Units	DF	Analyzed	By	Method				
Chloride <sup>a</sup> Solids, Percent	1460 95:2	53	mg/kg %	10 1	01/06/10 14:56 12/21/09	а Аа	EPA 300/SW846 9056 SM 2540 G				

(a) Analysis performed by Accutest Mountain States





		Page 1 of 1					
Client Sample ID: Lab Sample ID: Matrix:	T-1 2' T44472-6 SO - Soil				Sampled: 12/14/ Received: 12/19/		
Project:	GHSI:PXP State 2 W	ell #2 Flow	/ Line Leak/		nt Solids: 94.5 A		
General Chemistry			<b></b>			_	
Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride <sup>a</sup> Solids, Percent	91.0 94.5	26	mg/kg %	5 1	01/06/10 15:07 12/21/09	AA	EPA 300/SW846 9056 SM 2540 G



		Page 1 of 1					
Client Sample ID:							
Lab Sample ID:	T44472-7				Sampled: 12/14/0		
Matrix:	SO - Soil				Received: 12/19/0	)9	
Project:	GHSI:PXP State 2 We	ell #2 Flov	v Line Leak/		nt Solids: 88.9 A		
General Chemistry	,						
Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride <sup>a</sup>	320	28	mg/kg	5	01/06/10 15:19		EPA 300/SW846 9056
Solids, Percent	88.9		%	1	12/21/09	AA	SM 2540 G



		Page 1 of 1					
Client Sample ID:	T-1 6'						
Lab Sample ID:	T44472-8			Date	Sampled: 12/14/	09	
Matrix:	SO - Soil			Date 1	Received: 12/19/	09	
				Perce	nt Solids: 88.5		
Project:	GHSI:PXP State 2 W	ell #2 Flov	v Line Leak/	58447DN	Λ		
General Chemistry	1						
Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride <sup>a</sup>	2050	56	mg/kg	10	01/06/10 15:42	•	EPA 300/SW846 9056
Solids, Percent	2050 88.5		%	1	12/21/09	AA	SM 2540 G

(a) Analysis performed by Accutest Mountain States



		Page 1 of 1					
Client Sample ID: Lab Sample ID: Matrix:	T-1 8' T44472-9 SO - Soil				Sampled: 12/14/ Received: 12/19/		
Project:	GHSI:PXP State 2 We	ll #2 Flow	/ Line Leak/	Perce	nt Solids: 92.1	00	
General Chemistry	7						
Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Chloride <sup>a</sup> Solids, Percent	12200 92.1	140	mg/kg %	25 1	01/06/10 12:02 12/21/09	2 AA	EPA 300/SW846 9056 SM 2540 G

(a) Analysis performed by Accutest Mountain States

Client Sample ID: 7		Repo	rt of An				
Client Sample ID: 7				alysis			Page 1 of 1
-	Г-1 10' Г44472-10			Date S	Sampled: 12/	/14/09	
Matrix:	SO - Soil				Received: 12 nt Solids: 92	/19/09 .8	
Project: (	GHSI:PXP State 2 Well	#2 Flow	Line Leak/	58447DN	1		
General Chemistry							
Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride <sup>a</sup> Solids, Percent	6810 92.8	130	mg/kg %	25	01/06/10 1 12/21/09	2:37 AA	EPA 300/SW846 9056 SM 2540 G

		Repo	ort of An	alysis				Page 1 of 1	3,11
Client Sample ID: Lab Sample ID: Matrix:	T-2 2' T44472-11 SO - Soil			Date	r	12/14/0 12/19/0 95-7	-		S
Project:	GHSI:PXP State	2 Well #2 Flow	w Line Leak			99.1			
General Chemistry	7								,
Analyte	Result	RL	Units	DF	Analyze	d	By	Method	
Chloride <sup>a</sup> Solids, Percent	2890 95.7	130	mg/kg %	25 1	01/06/10 12/21/09		AA	EPA 300/SW846 9056 SM 2540 G	



			Repo	ort of An	alysis				Page 1 of 1	3.12
Client Sample ID: Lab Sample ID:	T-2 4' T44472-12					Sampled:	12/14/(	-		ළ
Matrix: Project:	SO - Soil GHSI:PXP S	state 2 Wel	l #2 Flow	/ Line Leak/	Perce	Received: nt Solids: 1	12/19/( 89.9	9		
General Chemistry	,									
Analyte	Re	esult	RL	Units	DF	Analyz	ed	Ву	Method	
Chloride <sup>a</sup> Solids, Percent	77 89	70 .9	140	mg/kg %	25 1	01/06/1 12/21/0	0 13:00 9	AA	EPA 300/SW846 9056 SM 2540 G	





Report of Analysis											
Client Sample ID: Lab Sample ID:	T44472-13				Sampled: 12/14/	-					
Matrix: Project:	SO - Soil GHSI:PXP State 2 Wel	l #2 Flow	/ Line Leak/	Perce	Received: 12/19/ nt Solids: 92.5 A	09					
General Chemistry	7					_					
Analyte	Result	RL	Units	DF	Analyzed	By	Method				
Chloride <sup>a</sup> Solids, Percent	13600 92.5	140	mg/kg %	25 1	01/06/10 13:11 12/21/09	AA	EPA 300/SW846 9056 SM 2540 G				

(a) Analysis performed by Accutest Mountain States

# 3.13



			Repo	ort of An	alysis			Page 1 of 1	0, 14
Client Sample ID:	T-2 8'					,			3
Lab Sample ID:	T44472-1	1			Date S	Sampled: 12/14	/09		
Matrix:	SO - Soil					Received: 12/19	/09		
Project:	GHSI:PX	P State 2 We	ll #2 Flow	/ Line Leak/		nt Solids: 89.7 1			
General Chemistry	7								,
Analyte		Result	RL	Units	DF	Analyzed	By	Method	
Chloride <sup>a</sup>		20800	° 280	mg/kg	50	01/06/10 15:5	4	EPA 300/SW846 9056	

(a) Analysis performed by Accutest Mountain States





		Page 1 of 1	3.15					
Client Sample ID:	T-2 10'						<u> </u>	Ś
Lab Sample ID:	T44472-15				Sampled: 12/14/			
Matrix:	SO - Soil				Received: 12/19/	09		
Project:	GHSI:PXP State 2 W	ell #2 Flow	/ Line Leak/		nt Solids: 90.9 A			
General Chemistry	r							,
Analyte	Result	RL	Units	DF	Analyzed	By	Method	
Chloride <sup>a</sup>	10500	140	mg/kg	25	01/06/10 13:35		EPA 300/SW846 9056	
Solids, Percent	90.9		%	1	12/21/09	AA	SM 2540 G	





Section 4

4

# Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody



Ar	nalvs	sis F	?er	711	est of Ch	ain of Custo	ndv	R	er	20	rc	ł	L	_					F	PAGE	:			OF:	Ĩ	2
	larye		<u>_</u>	10	5		July						-				(Ci				REQL y Me		No.)			
CLIENT, NAM	ME:			Ĩ	Midland, Tex (432) 682-4559	Spring St. (as 79705 • Fax (432) 682-3946	T4	<u>4</u>	- <b>1</b>	72 785		ATIVE		TX1005 (Ext. to C35)	Cd Cr Pb	₽								pH, TDS		
PROJECT N	<u>m Spi</u> 10.: 40252	rings (a	PRO	JECT	Tim Re	EZ FL ler	CATAME	Î		MI	ETHO			MOD. T	2	2	o clatites		1092	VOI- 82/0			5	us) /Cations,		
LAB I.D. NUMBER	DATE	тіме	MATRIX	GRAB	Eddy ( SAMPL	H: H: Tuyong FZ R lak D. NM E identification		FILTERED (Y)	НGL	RES MI EONH	ICE	NONE	0218	TPH 8015 PAH 8270	<b>RCRA Metals</b>	TCLP Metals Ag	TCLP Somi Volatites	RG	GC.MS Vol. 8	PCB's 8080/608	Pest. 806/608	Chloridg Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos) Major Aniona/Cations, pH, TDS		
1	12/14	620	5	X	T-6 2'						X										•	x			ŀ	
2	/	1026	S	1	T-6 4'		1				X		Π					Π	Τ		h	γ				
3	/	1052	S		T-6 6'		1				ΧÌ		Π		Π					Τ	ŀ	Å	Π			
Ч		1058	5	Π	7-6 8'		١				Ň			Τ	Π	T	Τ	Π	T		I I	¥	Π			
5		1043	5	$\prod$	1-6 10'		١				X				Π			Π	Τ	Τ	Γ	Ŕ	Π	Τ		
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1		1055	S	$\prod$	T-1 4'		1				X		Π	Τ	Π			Π	Τ		$\Box$	p	Π	Τ	Π	
3	•	1100	S	$\ $	T-1 6'		1				X		Π		Π			Π	T		T	4	Π			
9		1110	S	Π	T-1 8'		1	Γ	Π		X		Π	Τ	Π		Τ	Π		Τ		X	Π	Τ	Π	
10	ł.	1123	5	6	T-1 10'		1		Π		X		Π		Π					Τ	ſ	1	Π	T		П
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RECEIVING LAB ADDRESS:		STATE:		3 12	ZIP;	RECEIVED BY: (Signature)								-	-7	-		2.		1	<u>۲</u>		b	H2UF	Charge zed:	2
CONTACT:				PHONI		DATE:	T	IME:						-		114		Ke	<del>c</del> d		<u>K7</u>	èn.	<b>,</b> [	Yes		No
			conic	1		copy - Return Orginal cop	v to Tatra 1	act		Inla	ct M	20200	r nati									Ĩ.	CMA		2.4	

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**4.1** 

T44472: Chain of Custody Page 1 of 4



Analysis Request of Chain of Custod	v Record		PAGE: Z	OF: Z
	y nooora		ALYSIS REQUEST or Specify Method No	n.l
<b>TETRATECH</b> 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	<u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	D5 (Ext. to C35) d Cr Pb Hg Sa d Yr Pd Hg Sa		ŝĒ
GLENT NAME SPRINGS SITE MANAGER: GLENN Springs Tim Recod/IKe TOYON 3	PRESERVATIVE	As Ba As Ba As Ba	260/62	a, s
PROJECT NO.: PROJECT NAME: 19-6402526 State 2 Weil #2 FL Leak	CONTA	3021B 8015 MOD. 270 Metals Ag A Metals Ag A clistiles Semi Volatile	8240/8. 608 8 6.08	oos) s/Catic
LAB I.D. NUMBER DATE TIME TIME TIME TIME TO BE SAMPLE IDENTIFICATION		BTEX 8021B TPH 8015 MOD. PAH 8270 ACRA Metals Ag As TCLP Metals Ag As TCLP Volatiles TCLP Semi Volatiles ACI	GC.MS Vol. 8240/8280/828 GC.MS Semi. Vol. 8270/825 PCB's 8080/908 Pest. 808/608 Chundie) Gamma Spec.	pLM (stested) Major Anions/Cations, pH,
11 12/14 1230 5 X T-2 2'			Ϋ́Υ Ι	
12 1414 1240 S X T-2 4'	N X		X	
13 1414 1250 S X T-2 6'			X	
14 14 100 S X T-2 B'	I X		X	
15 12/14 105 S X T=2 10"	1 X		4	
RELINDUISHED BY: (Signature) Date: Dis usuality 15-20 RECEIVED BY: (Signature)	Date: Time:	SAMPLED BX-(PdnL8 ins	TAE W?	Date: 12114109. Time:
RELIABUSHED BY: (signature) Date: 12/19/01 RECEARED BY: (signature)	Oate:		BUS	RBILL #:
AELINQUISHED BY: (Signature) Date: RECEIVED BT: (Signature)	Dato: Time:	TETRA TECH CONTACT		Results by:
RECEIVING LABORATORY:A		- Tim Re	ed The Tonory	RUSH Charges Authorized:
CONTACT: PHONE: DATE: SAMPLE CONDITION WHEN RECEIVED: REMARKS:	TIME;		4	Yes No
Please till out all copies - Laboratory retains Yollow copy - Return Orginal copy to T	etra Tech • Project Manace	r retains Pink copy - Acco	Trr unting receives Gold	p: 2.4

T44472: Chain of Custody Page 2 of 4



## SAMPLE INSPECTION FORM

Accutest Job Number:	T 44472	Client:	Tehra	Tech	Date/Time I	Received: 17	19/09	1000
# of Coolers Received:	] The	rmometer #:	<u> </u>	12-1 TO	emperature Adj	ustment Fact	or: <u>+0</u> .	ч
Cooler Temps: #1: 2.4	#2:	#3:	#4:	#5:	#6:	#7:	#8:	
Method of Delivery: FED				Greyhound	Delivery	Other		
Airbill Numbers:								
COOLER INFORMA Custody seal missing or Temperature criteria no Wet ice received in coold CHAIN OF CUSTOD Chain of Custody not re Sample D/T unclear or Analyses unclear or mis COC not properly execu Summary of Discrepancies:	not intact t met r D <b>Y</b> ceived missing sing ted	Sample cc VOC vtals Sample la ID on COC D/T on CO Sample/B Sample lis Bottles mi Insufficier Sample re	sted on COC, bu issing for reque it volume for ar ceived imprope	ed broken e illegible th label(s) no analysis on COC ut not received sterd analysis rty preserved	Number Number	tp Blank on COC ip Blank received ip Blank not intr sectived Water Tri sectived Soli TB of Encores? of 5035 kits? of lab-filtered m	p Blank etals?	
TECHNICIAN SIGNATURE/D	ATE:	<u>)</u> - 5		<u> </u>	12/19/09			
INFORMATION AND SAMPLE	LADELING VE	арыл рі:—						
* * * * * *	* * *	* *	CORREC	TIVE ACTI	ONS •	• • •	* * *	<b>*</b> *
<b>Client Representative Notif</b>	ied:		·		Date:			
By Accutest Representative	<u> </u>				Via:	Phone	Email	
Client Instructions:								
	*******************		***=***********************************					
	**************				*******		من ها ها اور اور اور اور اور اور اور اور اور او	

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T44472: Chain of Custody Page 3 of 4



#### SAMPLE RECEIPT LOG

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INITIALS:

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PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

Rev 8/13/01 evp

T44472: Chain of Custody Page 4 of 4







Section 5

# Misc. Forms

**Custody Documents and Other Forms** 

(Accutest Mountain States)

Includes the following where applicable:

• Chain of Custody





10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4700       Looket Bods #       Client Information       Requested Analyses       Protect Laboration       Requested Analyses       Client Information       Requested Analyses       Analis       Address       Collection       Analis       Number of preserved bottles       Sol       Time       Analis       Address       Collection       Number of preserved bottles       Collection       Time       Analis	T44472 Matrix Coder GW- Oroch Wate GW- Group Wate GW- Group Wate SW - Surface Wate S
Access of the second	Matrix Code: DW - Divising Wate GW - Grand Wate WW - Vicsiander SW - Surface Wate SU - Sola SL - Staffe OL - OL LiQ - Ligard SOL - Deny Sold
Ciliant Information         Requested Analyses         Subcontract Information         Requested Analyses           Company Mama         Acculest Laboratory         Acculest Company Mama	Matrix Code: DW - Divising Wate GW - Grand Wate WW - Vicsiander SW - Surface Wate SU - Sola SL - Staffe OL - OL LiQ - Ligard SOL - Deny Sold
Company Name         Subcentract Laboratory           Acculest Gulf Coast         Email           Marianne Walker         mariannw@acculest.com           Address         Liboratory Context           Marianne Walker         mariannw@acculest.com           Address         Address           10165 Harwin Dr, Suite 150         Chr           City         State           713-271-4700         Phone No.           Acculest Sample Number         Collection           Data         Time           Mariance         Solo           T44472-1         12/14/09           Solo         1           T44472-5         12/14/09           Solo         1           T44472-7         12/14/09<	DW - Dirsking Walt GW - Ground Walt WW - Westweeter SW - Surface Wate SO - Soil SL - Skrift O - Ori LQ - Upped SOL - Dener Sold
Acculest Guilt Coasi       Ensiti       Laboratory Contect       Cale       Cal	GW - Grand Wate WW - Wastewater SW - Surface Wate SU - Surface Wate SL - Sinfige OL - OA LQ - Liquid SOL - Onlive Sold
Project Contact         Email         Laboratory Contact         Email         Laboratory Contact         Email         Marianne Walker         Zip         Zip <thzip< th=""> <th< td=""><td>GW - Grand Wate WW - Wastewater SW - Surface Wate SU - Surface Wate SL - Sinfige OL - OA LQ - Liquid SOL - Onlive Sold</td></th<></thzip<>	GW - Grand Wate WW - Wastewater SW - Surface Wate SU - Surface Wate SL - Sinfige OL - OA LQ - Liquid SOL - Onlive Sold
Mariane Walker         mariann@accutest.com         Address           Address         Address           0165 Harwin Dr, Suite 150         Chr         State         Zip         Chr         Zip         State	WW - Wasteventer SW - Surface Wrete SO - Soli SL - Stratig O - Ori UQ - Ugard SOL - Other Sold
Addresse       Addresse         U10165 Hanvin Dr, Suite 150       Zip       City       State       Zip         CBy       State       Zip       City       State       Zip       Prome No.       Prome No. <td>SW - Surface Water SO - Soil SL - Stratig O - Ori LQ - Libard SOL - Other Sold</td>	SW - Surface Water SO - Soil SL - Stratig O - Ori LQ - Libard SOL - Other Sold
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Houston       TX       77036         Phone No.       Phone No.         713-271-4700       Collection       Phone No.       Phone No. </td <td>CL - CH LQ - Lbyad SOL - Other Solid</td>	CL - CH LQ - Lbyad SOL - Other Solid
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Commercial 'B' = Results & Standard QC	
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T44472: Chain of Custody Page 1 of 4 Accutest Mountain States







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T44472: Chain of Custody Page 3 of 4





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T44472: Chain of Custody Page 4 of 4





Section 6

## General Chemistry

QC Data Summaries

(Accutest Mountain States)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



#### METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

#### Login Number: T44472 Account: ALGC - Accutest Laboratories Gulf Coast, Inc. Project: CRAOHWC: GHSI Oxy State 2 Well #2 Fl Leak

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GF1281/GN2795	5.0	0.0	mg/kg	200	189	94.5	90-110%

Associated Samples:

Babol utet banpies. Batch GP1281: T44472-1, T44472-10, T44472-11, T44472-12, T44472-13, T44472-14, T44472-15, T44472-2, T44472-3, T44472-4, T44472-5, T44472-6, T44472-7, T44472-8, T44472-9

(\*) Outside of QC limits



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#### MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

# Login Number: T44472 Account: ALGC - Accutest Laboratories Gulf Coast, Inc. Project: CRAOHWC: GHSI Oxy State 2 Well #2 Fl Leak

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP1281/GN2795	T44472-1	mg/kg	27.9	523	487	87.8	
Chloride	GP1281/GN2795	T44472-7	mg/kg	320	562	858	95.7	

Associated Samples:

Eatch GP1281: T44472-1, T44472-10, T44472-11, T44472-12, T44472-13, T44472-14, T44472-15, T44472-2, T44472-3, T44472-4, T44472-5, T44472-6, T44472-7, T44472-8, T44472-9 (\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



#### MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

#### Login Number: T44472 Account: ALGC - Accutest Laboratories Gulf Coast, Inc. Project: CRAOHWC: GHSI Oxy State 2 Well #2 Fl Leak

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GF1281/GN2795	T44472-1	mg/kg	27.9	523 ·	495	1.6	20%

Associated Samples: Batch GP1281: T44472-1, T44472-10, T44472-11, T44472-12, T44472-13, T44472-14, T44472-15, T44472-2, T44472-3, T44472-4, T44472-5, T44472-6, T44472-7, T44472-8, T44472-9 (\*) Outside of QC limits (N) Matrix Spike Rec. outside of QC limits