AE Order Number Banner

Report Description

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App Number: pGRL0928153726

1RP - 2294

ENDEAVOR ENERGY RESOURCES, LP

2/5/2016

SOUTH ENVIRONMENTAL SERVICES, INC.

P.O BOX 11064
MIDLAND, TEXAS 79702
OFFICE: (432) 682-3547
FAX: (432) 682-4182

SITE REMEDIATION AND CLOSURE REPORT

ENEAVOR ENERGY RESOURCES, LP
PETERSON "C" WELL # 1
ROOSEVELT COUNTY, NEW MEXICO

Prepared For:
ENDEAVOR ENERGY RESOURCES, LP
110 N. MARIENDFIELD, SUITE 200
MIDLAND, TEXAS 79701

Prepared by:
SOUTH ENVIRONMENTAL SERVICES, INC.
2400 S. LOOP 250 WEST
MIDLAND, TEXAS 79702

MARCH 2011

A Report Prepared For:

ENDEAVOR ENERGY RESOURCES, LP
110 N. MARIENFIELD STREET, SUITE 200
MIDLAND, TEXAS 79701

SITE REMEDIATION AND CLOSURE REPORT

Prepared by:

Ronnie W. Nickell

SOUTH ENVIRONMENTAL SERVICES, INC
2400 S. LOOP 250 WEST
MIDLAND, TEXAS 79702

TABLE OF CONTENTS

ATTACHMENTS

1.0 INTRODUCTION

On behalf of Endeavor Energy Resources, LP. (Endeavor), South Environmental Services, Inc. (SES) is please to submit this Site Remediation and Closure Report for the site known as Peterson "C" Well #1. This report presents the results of initial response, site investigation, and remedial actions performed at the above referenced site.

1.1 Purpose of the Report

The purpose of this report is to present the results of the site investigation and document response and remedial actions completed to date in order to facilitate closure for this site.

2.0 SUMMARY OF FIELD ACTIVITIES

2.1 Site Remediation and Closure Activities

The following activities were completed to achieve compliance with Oil Conservation Division (OCD) Statewide Rule for Total Petroleum Hydrocarbons (TPH) (<1,000 mg/kg), Chlorides (<500 ppm), and Benzene (<10.0 mg/kg), as set out below:

- Mobilized SES personnel and equipment to the site,
- Excavate approximately 1,462 cubic yards of impacted soil down to clean bottom, and take bottom hole samples,
- Removal of contaminated rock and soil will be properly disposed of in a licensed disposal,
- Perform excavation bottom hole confirmation sampling event to verify remedial levels, TPH <1,000 mg/kg (ppm), Chlorides <500 mg/kg (ppm) , and Benzene < 10 mg/kg (ppm),
- Backfill excavation areas with clean remediated soil, based on analytical verification meeting OCD requirements,
- Preparation of a Site Remediation and Closure Report for Submittal to the OCD, as required to resolve the enforcement action regulatory requirements as set out below.

3.0 DISTRIBUTION OF HYDROCARBONS IN SOIL

The distribution of hydrocarbons in the unsaturated zone was determined by utilizing the following techniques:

1. Visual observations of soils during trenching and/or excavation during remediation;
2. Visual observations of soils during the following excavation;
3. Visual observations of soil samples; and,
4. Laboratory analyses of the above samples.

Following excavation of impacted soil, confirmation soil samples were collected from the base of the excavation, based on minimum of one (1) discrete sample for each 500 square feet of surface area. Following conformation sampling event(s), any area still exhibiting TPH concentrations > 1,000 mg/kg, Chloride Concentrations >500 mg/kg, or Benzene concentrations > 50.0 mg/kg were over-excavated and re-sampled to confirm attainment of remedial goals. All samples were submitted for laboratory analysis for TPH, BTEX, and chlorides as referenced above. Site photographs are included as Attachment 3.

3.1 Remediation Results

Following intensive remediation of the site, via land farming, site inspections and multiple sampling events were conducted from 26 August 10 until clean bottom hole samples were taken on 14 January 10. Samples were collected at multiple locations within the impacted area as depicted in Attachment 2.

All remediation confirmation samples collected from each area were analyzed for TPH (SW 8051B Method), BTEX (SW 8021B Method), and Chlorides (EPA 300 Method).

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Samples of subsurface and treated soil will be obtained utilizing proper EPA protocols and/or standards. Representative soil samples will be collected using clean, disposable gloves and clean sampling tools. The soil samples will the be placed in a sterile glass container equipped with a Teflon-lined lid furnished by the analytical laboratory. The container will be filled to capacity to limit the amount of head-space present. Then each container will be labeled and placed on ice in an insulated cooler. Upon selection of samples for analysis, the cooler will be sealed for shipment to the laboratory. Proper chain-of-custody documentation will be maintained throughout the sampling and transportation process.

Soil samples will be delivered to Xenco Laboratories in Midland, Texas for TPH, BTEX, and Chloride analysis using the methods described below. Soil samples will be analyzed for Chlorides, BTEX, and TPH within fourteen days following the collection date.

The soil samples were analyzed as follows:

1. BTEX concentrations' in accordance with Method SW-846 8021B.
2. Chloride concentrations in accordance with Method 4500-CI-B.
3. TPH concentrations in accordance with EPA SW-846 8015M.

4.2 Laboratory Protocol

The laboratory will be responsible for proper QA/QC procedures. These Procedures will either be transmitted with the laboratory reports or on file at the laboratory.

5.0 LIMITAIONS

South Environmental Services, Inc. has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. South Environmental Services, Inc. has not conducted an independent examination of the facts contained in referenced materials and statements. WE have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. South Environmental Services, Inc. has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. South Environmental Services, Inc. also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Endeavor Energy Services, LP. The information contained in this report including all exhibits and attachments, may not be used by any other party without the express consent of South Environmental Services, Inc. and/or Endeavor Energy Services, LP.

Thank you for your assistance in this matter. If you have any questions or require additional information, please feel free to contact me at 432-425-8454.

Sincerely,
SOUTH ENVIRONMENTAL SERVICES, INC.

Ronnie W. Nickell
Sr. Project Manager

Cc: Endeavor Energy Services, LP, Midland, Texas

Table 1

CONCENTRATIONS OF TPH, BTEX AND CHLORIDE IN SOIL

Site Activities Report
Endeavor Energy, Peterson Penn Storage System

Roosevelt County, New Mexico

All concentrations are in mg/kg

Well	SAMPLE ID	Depth	EPA 8021B					SW8015 Mod					E300
			BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENE	BTEX	TPH C_6-C_{12}	TPH C_{12}-C_{28}	TPH C_{28}-C_{35}	TPH C_6-C_{35}	% Moisture	Chloride
08/26/10	FL1-001	0"-12"	0.0014	0.0042	0.0154	0.1865	**0.2075**	743	5690	131	**6564**	**16.50**	**8.42**
	FL2-001	0"-12"	0.0029	0.1451	0.0677	0.6263	**0.8420**	2620	29900	1460.0	**33980**	**4.22**	**53.7**
	FL3-001	0"-12"	ND	ND	ND	ND	**ND**	ND	171	ND	**171**	**9.55**	**ND**
	FL4-001	0"-12"	0.0013	0.0049	0.0128	0.1437	**0.1627**	664	10500	650.0	**11814**	**2.01**	**26.5**
	FL5-001	0"-12"	0.0016	0.0026	0.0043	0.0246	**0.0331**	402	16000	1070.0	**17472**	**1.94**	**583**
	FL6-001	0"-12"	ND	ND	ND	ND	**ND**	ND	ND	ND	**ND**	**8.64**	**ND**
08/28/10	FL7-001	0"-12"	ND	ND	ND	ND	**ND**	16.5	199	ND	**215.5**	**7.65**	**ND**
	FL8-001	0"-12"	ND	ND	ND	ND	**ND**	ND	ND	ND	**ND**	**6.81**	**13.6**
	FL9-001	0"-12"	ND	ND	ND	ND	**ND**	56.8	1360	45.4	**1462.2**	**6.23**	**ND**
09/21/10	PWSW1-001	0"-48"	ND	ND	ND	1.3423	**1.3423**	454	2270	90.7	**2814.7**	**11.60**	**539**
	PWNW2-001	0"-48"	0.0120	0.0503	0.0350	0.3347	**0.4320**	1120	5210	345.0	**6675**	**8.60**	**3870**
	PWNE3-001	0"-48"	0.7914	1.5590	3.6470	1.7720	**7.7694**	2530	3730	285.0	**6545**	**11.70**	**1480**
	PWSE4-001	0"-48"	0.0017	0.0059	0.0104	0.0182	**0.0362**	60.9	301	18.1	**380**	**12.20**	**111**
	PWFN1-001	0"-48"	0.0011	0.0026	0.0036	0.0021	**0.0094**	16.4	428	36.9	**481.3**	**2.22**	**7.05**
	PWFC2-001	0"-48"	ND	ND	ND	ND	**ND**	41.6	381	ND	**422.6**	**11.50**	**6.51**
	PWFS3-001	0"-48"	ND	ND	ND	ND	**ND**	ND	ND	ND	**ND**	**8.88**	**25.8**

Well	SAMPLE ID	Depth	EPA 8021B					SW8015 Mod					E300
			BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	BTEX	TPH C_6-C_{12}	TPH C_{12}-C_{28}	TPH C_{28}-C_{35}	TPH C_6-C_{35}	% Moisture	Chloride
09/30/10	PW SE1-002	0-60"						2110	3520	128	**5758**	**8.42**	**91.6**
	PW SE1-003	0-60"						2020	4980	188.0	**7188**	**9.57**	**376**
	PW SE1-004	0-60"						1640	3160	113.0	**4913**	**8.21**	**149**
	PW SE1-005	0-60"						17.1	123	ND	**140.1**	**12.10**	**50.3**
10/19/10	PW SE1-003	0-48"						ND	ND	ND	**ND**	**7.11**	
	PW NE2-003	0-48"						ND	332	ND	**332**	**1.70**	
	PW NW3-003	0-48"						ND	ND	ND	**ND**	**7.86**	
01/12/11	PW N1-001	0-10'	ND	0.2696	0.5678	4.4120	**5.2494**	372	500	ND	**872**	**10.30**	**56.8**

Table 2

WATER ELEVATION FOR SURROUNDING WELLS

Site Activities Report
Endeavor Energy, Peterson C Well 1

Roosevelt County, New Mexico

All measurements are in feet.

WELL NAME	DATE MEASURED	DEPTH TO WATER	TOTAL DEPTH	DISTANCE FROM SITE	WELL TYPE
CL00147	12/26/2010	65	80	49902	Domestic
CL00254	9/27/2009	29	50	50315	Monitoring
CL00004	1/9/2009	28	238	50728	Municipal
CL00224	7/22/2008	95	147	64177	Livestock
Average Depth to Water		54.25			

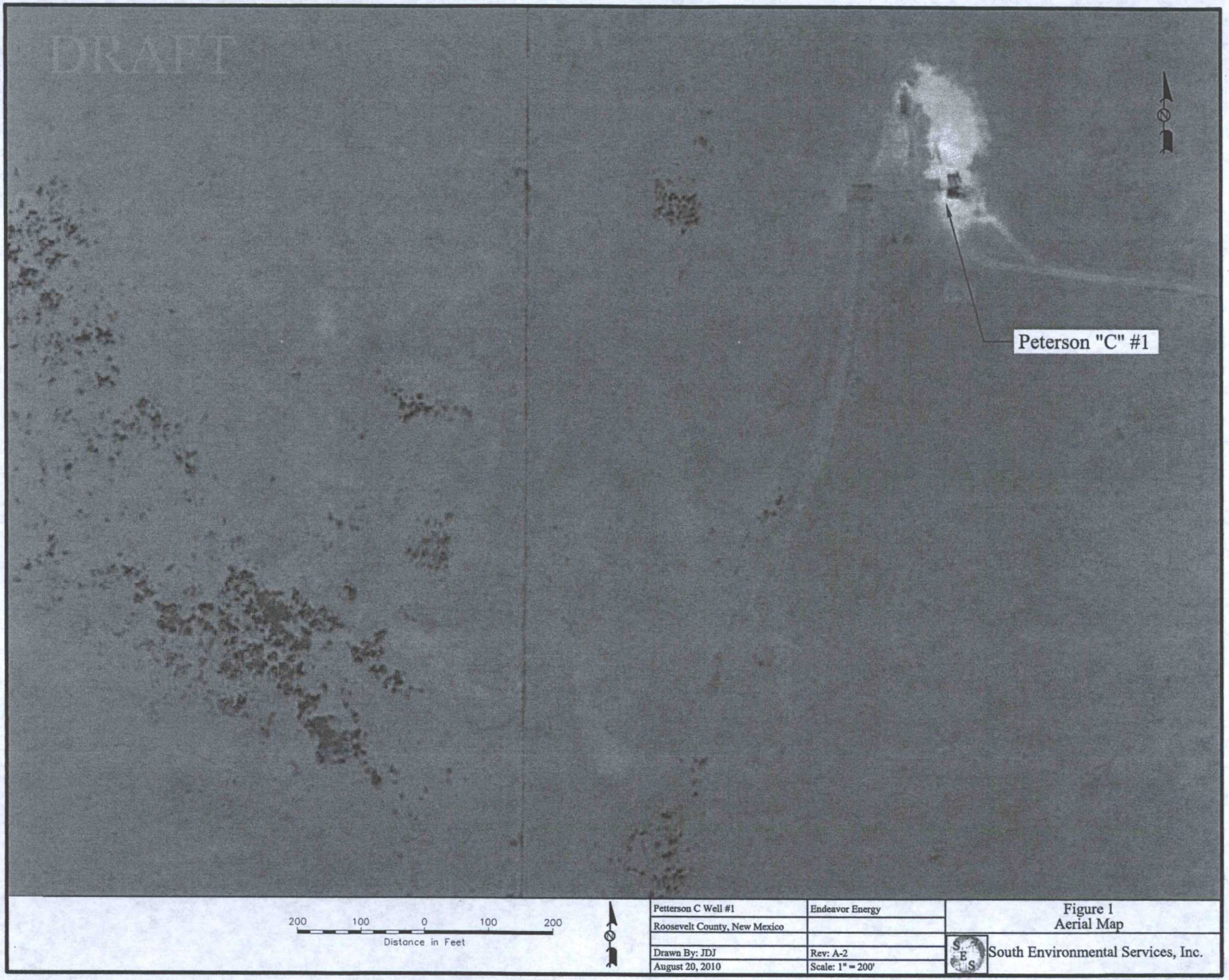
*Source: New Mexico Office of the State Engineer

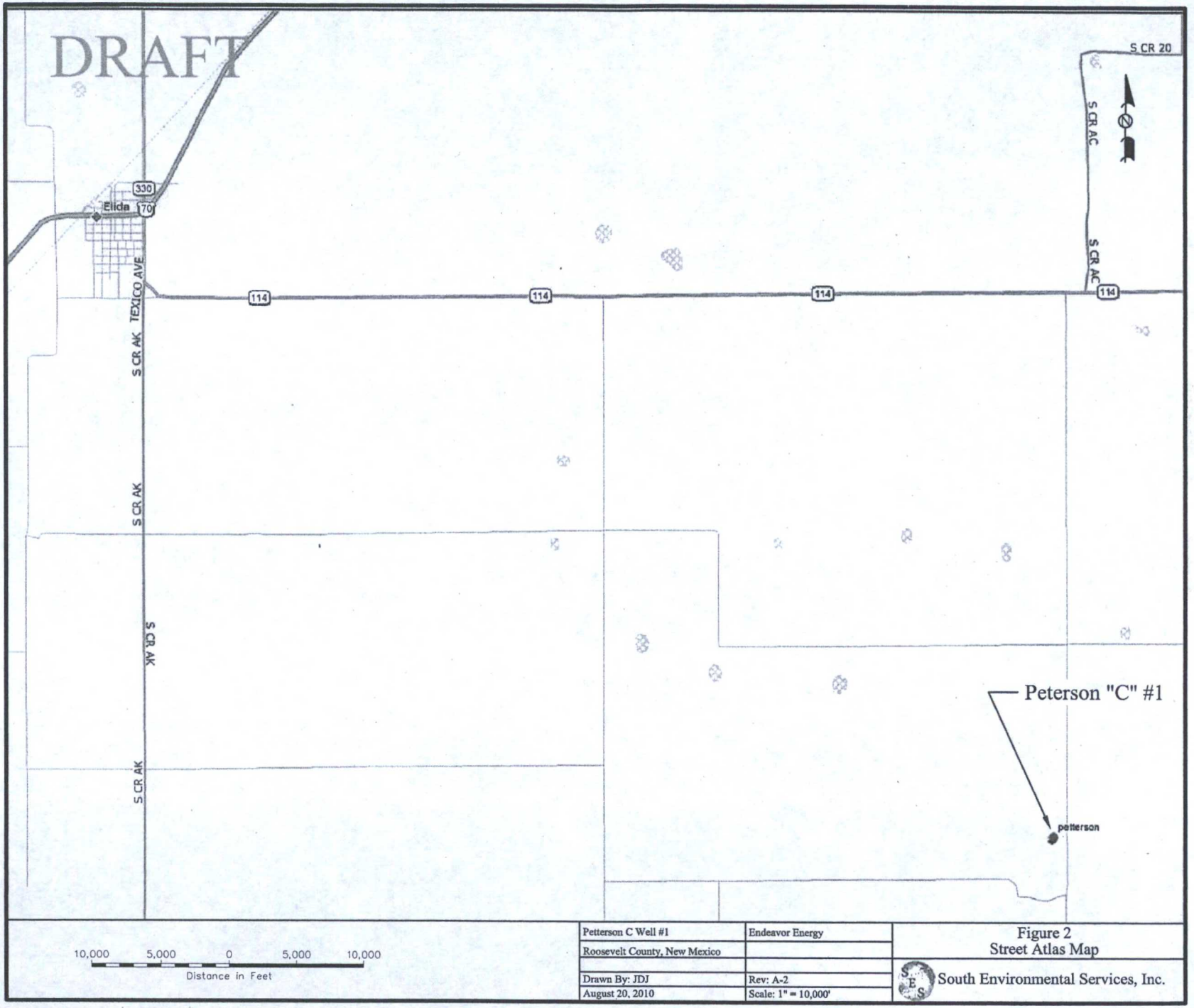
New Mexico Office of the State Engineer
Wells with Well Log Information

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

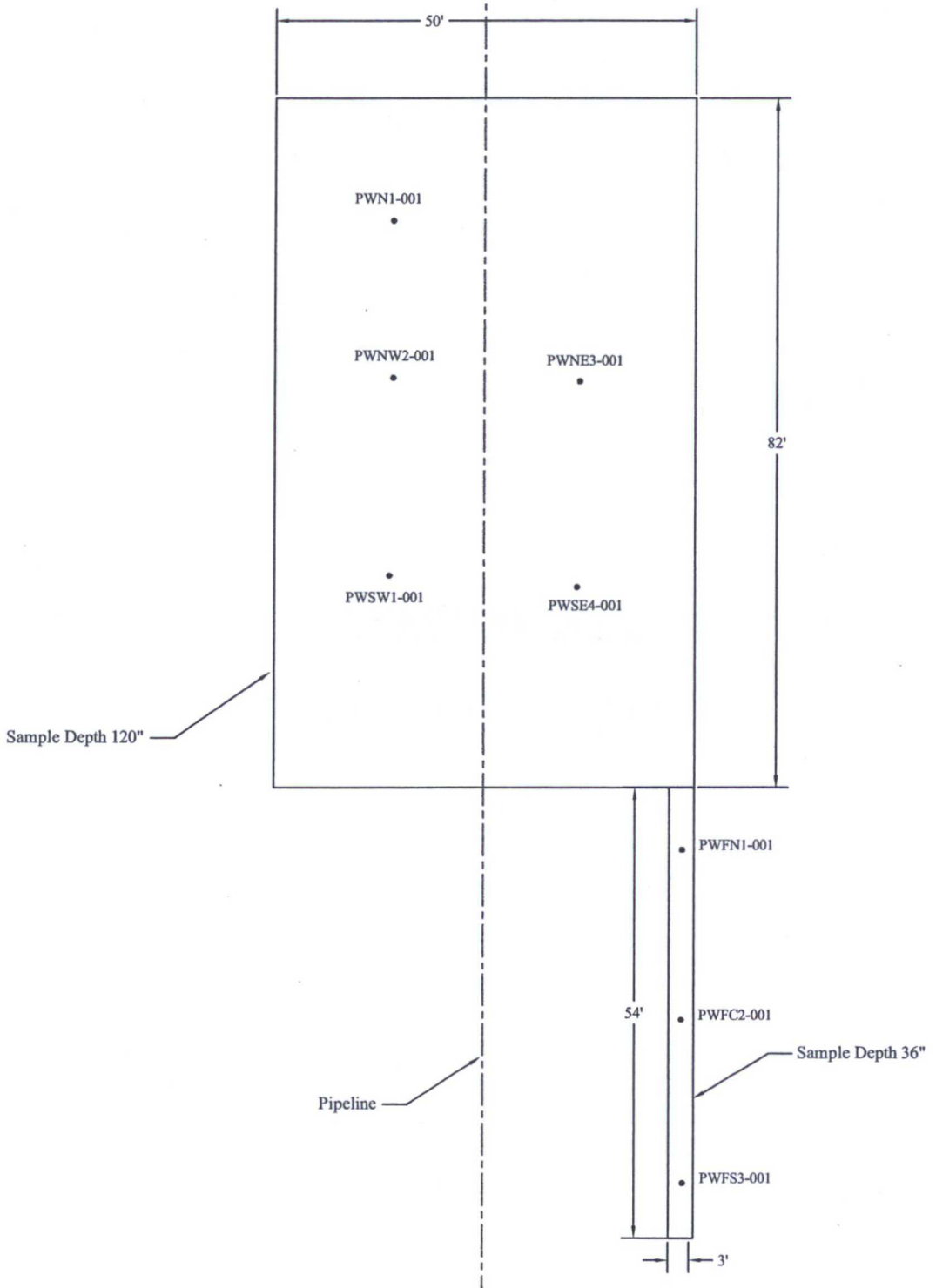
POD Number	Sub basin	Use	County	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water
CL 00147 POD1		DOM	RO	Shallow	4 4 2	23	04S	31E	624770	3756868	15210	12/26/2006	12/26/2006	01/16/2007	80	65
CL 00254 POD1		MON	RO	Shallow	1 2 1	24	04S	31E	625001	3757445	15336	09/22/2009	09/27/2009	12/21/2009	50	29
CL 00254 POD2		MON		Shallow					625001	3757445	15336	09/22/2009	09/27/2009	12/21/2009	34	
CL 00255 POD1		MON	RO	Shallow	1 2 1	24	04S	31E	625001	3757445	15336	09/23/2009	09/23/2009	12/21/2009	49	29
CL 00255 POD2		MON		Shallow					625001	3757445	15336	09/23/2009	09/23/2009	12/21/2009	34	29
CL 00256 POD1		MON	RO	Shallow	1 2 1	24	04S	31E	625001	3757445	15336	09/24/2009	09/24/2009	12/21/2009	52	29
CL 00256 POD2		MON		Shallow					625001	3757445	15336	09/24/2009	09/24/2009	12/21/2009	40	29
CL 00257 POD1		MON	RO	Shallow	1 2 1	24	04S	31E	625001	3757445	15336	09/25/2009	09/25/2009	12/21/2009	34	29
CL 00257 POD2		MON		Shallow					625001	3757445	15336	09/25/2009	09/25/2009	12/21/2009	51	29
CL 00258 POD1		MON	RO	Shallow	1 2 1	24	04S	31E	625001	3757445	15336	09/26/2009	09/26/2009	12/21/2009	50	29
CL 00258 POD2		MON		Shallow					625001	3757445	15336	09/26/2009	09/26/2009	12/21/2009	34	29
CL 00253 POD1		MON	RO	Shallow	3 1 1	24	04S	31E	624792	3757165	15352	10/05/2008	10/05/2008	08/21/2009	30	
CL 00004 POD3		MUN	RO	Shallow	2 2 2	23	04S	31E	624747	3757297	15462	01/09/2009	09/15/2009	09/29/2009	238	28
CL 00252 POD1		MON	RO	Shallow	3 1 3	13	04S	31E	624805	3758080	15863	10/05/2008	10/05/2008	08/21/2009	30	
CL 00121 POD1		DOM	RO	Shallow	4 4 2	22	06S	35E	653597	3739212*	18598	05/15/2007	05/16/2007	06/06/2007	155	
CL 00224 POD1		STK	RO	Shallow	4 4 2	30	05S	35E	657015	3746259	19561	07/20/2008	07/22/2008	08/22/2008	147	95

***UTM location was derived from PLSS - see Help**


DRAFT
Peterson "C" #1
200 100 0 100 200
Distance in Feet
Petterson C Well #1
Roosevelt County, New Mexico
Drawn By: JDJ
August 20, 2010
Endeavor Energy
Rev: A-2
Scale: 1" = 200'
Figure 1
Aerial Map
South Environmental Services, Inc.

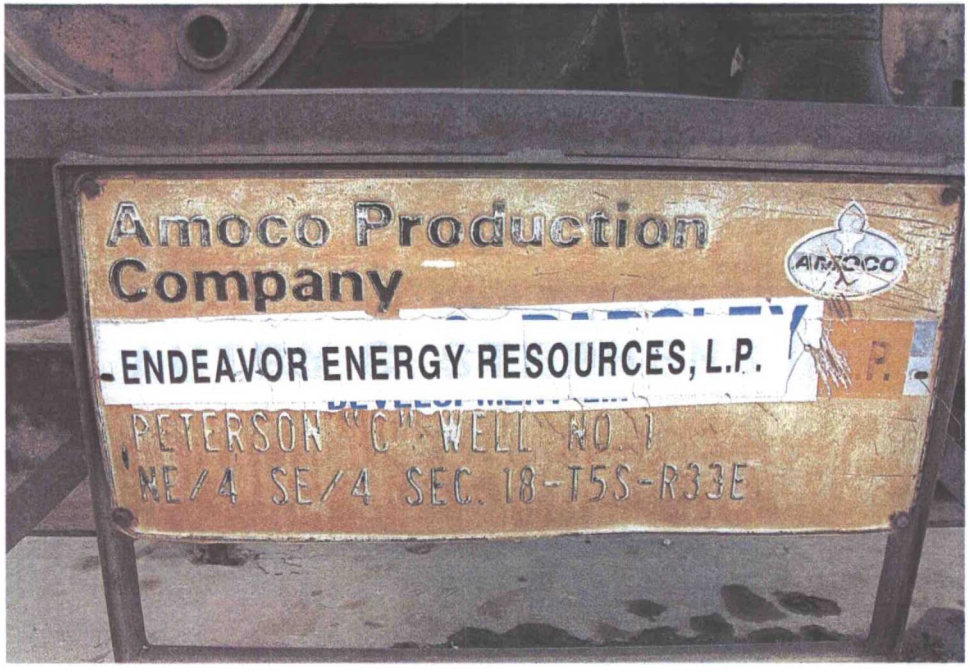

DRAFT
S CR 20
S CR AC
S CR AC
330
Elida
70
114
114
114
114
S CR AK
TEXICO AVE
S CR AK
S CR AK
S CR AK
Peterson "C" #1
petterson
10,000
5,000
0
5,000
10,000
Distance in Feet
Petterson C Well #1
Roosevelt County, New Mexico
Drawn By: JDJ
August 20, 2010
Endeavor Energy
Rev: A-2
Scale: 1" = 10,000'
Figure 2
Street Atlas Map
South Environmental Services, Inc.

DRAFT



20 10 0 10 20
Distance in Feet

Petterson C Well #1	Endeavor Energy	Figure 1 Aerial Map
Roosevelt County, New Mexico		
Drawn By: JDJ	Rev: A-2	South Environmental Services, Inc.


Amoco Production
Company
AMOCO
ENDEAVOR ENERGY RESOURCES, L.P.
PETERSON "C" WELL NO. 1
NE/4 SE/4 SEC. 18-T5S-R33E

ATTACHMENTS: 4

LABORATORY ANALYSIS REPORT

Analytical Report 387388

for

Endeavor Energy

Project Manager: Ronnie Nickell

Peterson C Well #1

01-SEP-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

01-SEP-10

Project Manager: **Ronnie Nickell**
Endeavor Energy
110 N. Marienfeld, Suite 200

Midland, TX 79701

Reference: XENCO Report No: **387388**
Peterson C Well #1
Project Address: Roosevelt County, NM

Ronnie Nickell:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 387388. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 387388 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 387388

Endeavor Energy, Midland, TX

Peterson C Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL1-001	S	Aug-26-10 11:56	0 - 12 In	387388-001
FL2-001	S	Aug-26-10 12:05	0 - 12 In	387388-002
FL3-001	S	Aug-26-10 12:12	0 - 12 In	387388-003
FL4-001	S	Aug-26-10 12:25	0 - 12 In	387388-004
FL5-001	S	Aug-26-10 12:33	0 - 12 In	387388-005
FL6-001	S	Aug-26-10 12:36	0 - 12 In	387388-006

CASE NARRATIVE

XENCO Laboratories

Client Name: Endeavor Energy
Project Name: Peterson C Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Project ID:
Work Order Number: 387388

Report Date: 01-SEP-10
Date Received: 08/27/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-820668 Soil pH by EPA 9045C
None

Batch: LBA-820734 Percent Moisture
None

Batch: LBA-820781 TPH By SW8015 Mod
None

Batch: LBA-820841 Inorganic Anions by EPA 300/300.1
None

Batch: LBA-821086 BTEX by EPA 8021B
SW8021BM

Batch 821086, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 387388-001, -005, -003, -002, -006, -004.
The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

SW8021BM

Batch 821086, Benzene, Ethylbenzene, Toluene, m,p-Xylenes , o-Xylene RPD was outside QC limits.
Samples affected are: 387388-001, -005, -003, -002, -006, -004

SW8021BM

Batch 821086, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 387020-001 S,387388-002,387388-004,387388-001.

Endeavor Energy, Midland, TX

Project Name: Peterson C Well #1

Project Id:

Contact: Ronnie Nickell

Project Location: Roosevelt County, NM

Date Received in Lab: Fri Aug-27-10 08:18 am

Report Date: 01-SEP-10

Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	387388-001		387388-002		387388-003		387388-004		387388-005		387388-006	
	Field Id:	FL1-001		FL2-001		FL3-001		FL4-001		FL5-001		FL6-001	
	Depth:	0-12 In		0-12 In		0-12 In		0-12 In		0-12 In		0-12 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-26-10 11:56		Aug-26-10 12:05		Aug-26-10 12:12		Aug-26-10 12:25		Aug-26-10 12:33		Aug-26-10 12:36	
BTEX by EPA 8021B	*Extracted:*	Aug-30-10 08:00		Aug-30-10 08:00		Aug-30-10 08:00		Aug-30-10 08:00		Aug-30-10 08:00		Aug-30-10 08:00	
	Analyzed:	Aug-31-10 09:01		Aug-31-10 09:24		Aug-31-10 10:57		Aug-31-10 11:20		Aug-31-10 11:43		Aug-31-10 12:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0.0014	0.0012	0.0029	0.0010	ND	0.0011	0.0013	0.0010	0.0016	0.0010	ND	0.0011
Toluene		0.0042	0.0024	0.1451	0.0021	ND	0.0022	0.0049	0.0020	0.0026	0.0020	ND	0.0022
Ethylbenzene		0.0154	0.0012	0.0677	0.0010	ND	0.0011	0.0128	0.0010	0.0043	0.0010	ND	0.0011
m,p-Xylenes		0.0771	0.0024	0.2841	0.0021	ND	0.0022	0.0525	0.0020	0.0193	0.0020	ND	0.0022
o-Xylene		0.1094	0.0012	0.3422	0.0010	ND	0.0011	0.0912	0.0010	0.0053	0.0010	ND	0.0011
Total Xylenes		0.1865	0.0012	0.6263	0.0010	ND	0.0011	0.1437	0.0010	0.0246	0.0010	ND	0.0011
Total BTEX		0.2075	0.0012	0.8420	0.0010	ND	0.0011	0.1627	0.0010	0.0331	0.0010	ND	0.0011
Inorganic Anions by EPA 300/300.1	*Extracted:*												
	Analyzed:	Aug-27-10 09:31		Aug-27-10 09:31		Aug-27-10 09:31		Aug-27-10 09:31		Aug-27-10 09:31		Aug-27-10 09:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		8.42	5.99	53.7	5.22	ND	5.53	26.5	5.10	583	10.2	ND	5.47
Percent Moisture	*Extracted:*												
	Analyzed:	Aug-28-10 09:09		Aug-28-10 09:09		Aug-28-10 09:09		Aug-28-10 09:09		Aug-28-10 09:09		Aug-28-10 09:09	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		16.5	1.00	4.22	1.00	9.55	1.00	2.01	1.00	1.94	1.00	8.64	1.00
Soil pH by EPA 9045C	*Extracted:*												
	Analyzed:	Aug-27-10 11:11		Aug-27-10 11:11		Aug-27-10 11:11		Aug-27-10 11:11		Aug-27-10 11:11		Aug-27-10 11:11	
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL
pH		8.12		8.37		7.75		8.15		7.63		7.06	

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 387388

Endeavor Energy, Midland, TX

Project Name: Peterson C Well #1

Project Id:

Contact: Ronnie Nickell

Project Location: Roosevelt County, NM

Date Received in Lab: Fri Aug-27-10 08:18 am

Report Date: 01-SEP-10

Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	387388-001		387388-002		387388-003		387388-004		387388-005		387388-006	
	Field Id:	FL1-001		FL2-001		FL3-001		FL4-001		FL5-001		FL6-001	
	Depth:	0-12 In		0-12 In		0-12 In		0-12 In		0-12 In		0-12 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-26-10 11:56		Aug-26-10 12:05		Aug-26-10 12:12		Aug-26-10 12:25		Aug-26-10 12:33		Aug-26-10 12:36	
TPH By SW8015 Mod	*Extracted:*	Aug-27-10 11:00		Aug-27-10 11:00		Aug-27-10 11:00		Aug-27-10 11:00		Aug-27-10 11:00		Aug-27-10 11:00	
	Analyzed:	Aug-27-10 13:44		Aug-27-10 14:03		Aug-27-10 14:23		Aug-27-10 14:43		Aug-27-10 15:02		Aug-27-10 15:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		743	17.9	2620	157	ND	16.5	664	76.5	402	153	ND	16.4
C12-C28 Diesel Range Hydrocarbons		5690	17.9	29900	157	171	16.5	10500	76.5	16000	153	ND	16.4
C28-C35 Oil Range Hydrocarbons		131	17.9	1460	157	ND	16.5	650	76.5	1070	153	ND	16.4
Total TPH		6564	17.9	33980	157	171	16.5	11814	76.5	17472	153	ND	16.4

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

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Certified and approved by numerous States and Agencies.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
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5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson C Well #1

Work Orders : 387388,

Project ID:

Lab Batch #: 821086 **Sample:** 572124-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/10 01:41

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 821086 **Sample:** 572124-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/10 02:50

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 821086 **Sample:** 387020-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 03:36

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0372	0.0300	124	80-120	**

Lab Batch #: 821086 **Sample:** 387020-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 04:00

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 821086 **Sample:** 387388-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 09:01

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0863	0.0300	288	80-120	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson C Well #1

Work Orders : 387388,

Project ID:

Lab Batch #: 821086 **Sample:** 387388-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 09:24

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.1278	0.0300	426	80-120	**

Lab Batch #: 821086 **Sample:** 387388-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 10:57

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 821086 **Sample:** 387388-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 11:20

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.1647	0.0300	549	80-120	**

Lab Batch #: 821086 **Sample:** 387388-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 11:43

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 821086 **Sample:** 387388-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 12:07

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson C Well #1

Work Orders : 387388,

Project ID:

Lab Batch #: 820781 **Sample:** 571907-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/27/10 12:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.0	99.8	95	70-135	
o-Terphenyl	55.5	49.9	111	70-135	

Lab Batch #: 820781 **Sample:** 571907-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/27/10 13:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	99.6	97	70-135	
o-Terphenyl	62.1	49.8	125	70-135	

Lab Batch #: 820781 **Sample:** 571907-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/27/10 13:24

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.2	100	99	70-135	
o-Terphenyl	54.2	50.1	108	70-135	

Lab Batch #: 820781 **Sample:** 387388-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 13:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	61.8	50.0	124	70-135	

Lab Batch #: 820781 **Sample:** 387388-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 14:03

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson C Well #1

Work Orders : 387388,

Project ID:

Lab Batch #: 820781 **Sample:** 387388-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 14:23

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.5	99.7	98	70-135	
o-Terphenyl	53.4	49.9	107	70-135	

Lab Batch #: 820781 **Sample:** 387388-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 14:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	99.9	88	70-135	
o-Terphenyl	41.2	50.0	82	70-135	

Lab Batch #: 820781 **Sample:** 387388-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 15:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.8	94	70-135	
o-Terphenyl	36.3	49.9	73	70-135	

Lab Batch #: 820781 **Sample:** 387388-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 15:22

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.6	100	99	70-135	
o-Terphenyl	53.7	50.0	107	70-135	

Lab Batch #: 820781 **Sample:** 387390-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 19:00

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	99.5	97	70-135	
o-Terphenyl	57.8	49.8	116	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson C Well #1

Work Orders : 387388,

Project ID:

Lab Batch #: 820781 **Sample:** 387390-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/27/10 19:19

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	53.1	49.8	107	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Blank Spike Recovery

Project Name: Peterson C Well #1

Work Order #: 387388 **Project ID:**

Lab Batch #: 821086 **Sample:** 572124-1-BKS **Matrix:** Solid

Date Analyzed: 08/31/2010 **Date Prepared:** 08/30/2010 **Analyst:** ASA

Reporting Units: mg/kg **Batch #:** 1

BTEX by EPA 8021B Analytes	BLANK /BLANK SPIKE RECOVERY STUDY					
	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.0996	0.0898	90	70-130	
Toluene	ND	0.0996	0.0882	89	70-130	
Ethylbenzene	ND	0.0996	0.0918	92	71-129	
m,p-Xylenes	ND	0.1992	0.1791	90	70-135	
o-Xylene	ND	0.0996	0.0918	92	71-133	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

XENCO Laboratories

BS / BSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Peterson C Well #1

Work Order #: 387388 **Project ID:**

Analyst: LATCOR **Date Prepared:** 08/27/2010 **Date Analyzed:** 08/27/2010

Lab Batch ID: 820841 **Sample:** 820841-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.98	100	10	10.3	103	3	80-120	20	

Analyst: BEV **Date Prepared:** 08/27/2010 **Date Analyzed:** 08/27/2010

Lab Batch ID: 820781 **Sample:** 571907-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	998	1030	103	996	1040	104	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1000	100	996	1010	101	1	70-135	35	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ınk Spike Recovery [D] = 100*(C)/[B]
ınk Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Peterson C Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Work Order #: 387388

Lab Batch #: 820841

Project ID:

Date Analyzed: 08/27/2010 **Date Prepared:** 08/27/2010 **Analyst:** LATCOR

QC- Sample ID: 387262-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	171	201	366	97	80-120	

atrix Spike Percent Recovery [D] = 100*(C-A)/B
:lative Percent Difference [E] = 200*(C-A)/(C+B)
l Results are based on MDL and Validated for QC Purposes

RL - Below Reporting Limit

XENCO Laboratories

Sample Duplicate Recovery

nelac

Project Name: Peterson C Well #1

Work Order #: 387388

Lab Batch #: 820841 **Project ID:**

Date Analyzed: 08/27/2010 **Date Prepared:** 08/27/2010 **Analyst:** LATCOR

QC- Sample ID: 387262-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	171	175	2	20	

Lab Batch #: 820734

Date Analyzed: 08/28/2010 **Date Prepared:** 08/28/2010 **Analyst:** JLG

QC- Sample ID: 387388-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	16.5	15.4	7	20	

Lab Batch #: 820668

Date Analyzed: 08/27/2010 **Date Prepared:** 08/27/2010 **Analyst:** JLG

QC- Sample ID: 387388-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: SU

Soil pH by EPA 9045C	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
pH	8.12	8.13	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Project Name: Peterson C Well #1

Work Order # 387388 **Project ID:**

Lab Batch ID: 821086 **QC- Sample ID:** 387020-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/31/2010 **Date Prepared:** 08/30/2010 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
Benzene	ND	0.1114	0.0350	31	0.1125	0.0618	55	55	70-130	35	XF
Toluene	ND	0.1114	0.0328	29	0.1125	0.0580	52	56	70-130	35	XF
Ethylbenzene	ND	0.1114	0.0305	27	0.1125	0.0547	49	57	71-129	35	XF
m,p-Xylenes	ND	0.2227	0.0681	31	0.2250	0.1150	51	51	70-135	35	XF
o-Xylene	ND	0.1114	0.0355	32	0.1125	0.0569	51	46	71-133	35	XF

Lab Batch ID: 820781 **QC- Sample ID:** 387390-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/27/2010 **Date Prepared:** 08/27/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
C6-C12 Gasoline Range Hydrocarbons	ND	1330	1420	107	1330	1480	111	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1330	1370	103	1330	1420	107	4	70-135	35	

rix Spike Percent Recovery [D] = 100*(C-A)/B Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E
ıtive Percent Difference RPD = 200*|(C-F)/(C+F)|

= Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not licableN = See Narrative, EQL = Estimated Quantitation Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Ronnie Nickell
Company Name: Endeavor
Company Address:
City/State/Zip: Midland, Tx
Telephone No:
Fax No:
Sampler Signature: Kassi Yove Cypert
e-mail: ronnie@southenv.com, kassi@southenv.com

Project Name: ~~Peter~~ Peterson C Well #
Project #:
Project Loc: Roosevelt County, NM
PO #:
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 38738

Analyze For: TCLP: / TOTAL:

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers (4oz gls)	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX (8021B)/5030 or BTEX 8260	RCI	N.O.R.M.	pH 9045		RUSH TAT (Pre-Schedule) 24, (48), 72 hrs	Standard TAT
1	~~FL1-001~~ FL1-001	0"	12"	8-26-10	11:56am		1	↓								Soil	↓			↓					↓			↓		↓	
2	~~FL1-002~~ FL2-001	↓	↓	↓	12:05 pm		1	↓								↓	↓			↓					↓			↓		↓	
3	~~FL1-003~~ FL3-001	↓	↓	↓	12:12 pm		1	↓								↓	↓			↓					↓			↓		↓	
4	~~FL1-004~~ FL4-001	↓	↓	↓	12:25pm		1	↓								↓	↓			↓					↓			↓		↓	
5	~~FL1-005~~ FL5-001	↓	↓	↓	12:33 pm		1	↓								↓	↓			↓					↓			↓		↓	
6	~~FL1-006~~ FL6-001	↓	↓	↓	12:36pm		1	↓								↓	↓			↓					↓			↓		↓	

KJC I.D. corrected 1Sept10

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Kassi Yove Cypert	8-27-10	8:18			
			Received by ELOT: Jeanne Fitch	08-27-10	0818

Laboratory Comments:
[redacted]
VOCs Free of Headspace? (Y) N
[redacted]
Custody seals on container(s) Y (N)
[redacted]
Sample Hand Delivered (Y) N
by Sampler/Client Rep.? Y N
by Courier? UPS DHL FedEx Lone Star
Temperature Upon Receipt: 5.1 °C

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Endeavor
Date/Time: 08-27-10 @ 0818
Lab ID # : 387388
Initials: JMF

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		id only
9. Container labels legible and intact?	Yes	No		"
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Sample Cross Reference 390736

Endeavor Energy, Midland, TX

Peterson "C" Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PWSW1-001	S	Sep-21-10 13:00	0 - 48 In	390736-001
PWNW2-001	S	Sep-21-10 13:06	0 - 48 In	390736-002
PWNE3-001	S	Sep-21-10 13:10	0 - 48 In	390736-003
PWSE4-001	S	Sep-21-10 13:15	0 - 48 In	390736-004
PWFN1-001	S	Sep-21-10 12:35	0 - 48 In	390736-005
PWFC2-001	S	Sep-21-10 12:42	0 - 48 In	390736-006
PWFS3-001	S	Sep-21-10 12:57	0 - 48 In	390736-007

CASE NARRATIVE

XENCO Laboratories

Client Name: Endeavor Energy
Project Name: Peterson "C" Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Project ID: *Fence line Pit* *Report Date:* *25-SEP-10*
Work Order Number: *390736* *Date Received:* *09/22/2010*

Sample receipt non conformances and Comments:
None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-824258 TPH By SW8015 Mod
None

Batch: LBA-824274 Percent Moisture
None

Batch: LBA-824277 Anions by E300
None

Batch: LBA-824526 BTEX by EPA 8021B
SW8021BM

Batch 824526, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 390736-003,390736-001. 1,4 Difluorobenzene was within QC limits.

SW8021BM

Batch 824526, Ethylbenzene, Toluene, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 390736-006, -003, -007, -001.
The Laboratory Control Sample for Toluene, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-824570 BTEX by EPA 8021B
SW8021BM

Batch 824570, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 390736-004.

CASE NARRATIVE

XENCO Laboratories

Client Name: Endeavor Energy
Project Name: Peterson "C" Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Project ID:	*Fence line Pit*	*Report Date:*	*25-SEP-10*
Work Order Number:	*390736*	*Date Received:*	*09/22/2010*

Batch: LBA-824680 BTEX by EPA 8021B
SW8021BM

Batch 824680, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 390736-002.

Certificate of Analysis Summary 390736

Endeavor Energy, Midland, TX

Project Name: Peterson "C" Well #1

Project Id: Fence line Pit
Contact: Ronnie Nickell
Project Location: Roosevelt Co., NM

Date Received in Lab: Wed Sep-22-10 09:25 am
Report Date: 25-SEP-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	390736-001		390736-002		390736-003		390736-004		390736-005		390736-006	
	Field Id:	PWSW1-001		PWNW2-001		PWNE3-001		PWSE4-001		PWFN1-001		PWFC2-001	
	Depth:	0-48 In		0-48 In		0-48 In		0-48 In		0-48 In		0-48 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-21-10 13:00		Sep-21-10 13:06		Sep-21-10 13:10		Sep-21-10 13:15		Sep-21-10 12:35		Sep-21-10 12:42	
Anions by E300	*Extracted:*												
	Analyzed:	Sep-22-10 12:14		Sep-22-10 12:14		Sep-22-10 12:14		Sep-22-10 12:14		Sep-22-10 12:14		Sep-22-10 12:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		539	9.50	3870	46.0	1480	23.8	111	4.78	7.05	4.30	6.51	4.75
BTEX by EPA 8021B	*Extracted:*	Sep-22-10 12:50		Sep-24-10 13:00		Sep-22-10 12:50		Sep-23-10 17:00		Sep-23-10 17:00		Sep-22-10 12:50	
	Analyzed:	Sep-23-10 14:41		Sep-24-10 18:31		Sep-23-10 15:24		Sep-23-10 22:53		Sep-23-10 23:16		Sep-23-10 09:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0226	0.0120	0.0055	0.7914	0.0227	0.0017	0.0011	0.0011	0.0010	ND	0.0011
Toluene		ND	0.0453	0.0503	0.0109	1.559	0.0453	0.0059	0.0023	0.0026	0.0020	ND	0.0023
Ethylbenzene		ND	0.0226	0.0350	0.0055	3.647	0.0227	0.0104	0.0011	0.0036	0.0010	ND	0.0011
m,p-Xylenes		0.9154	0.0453	0.1583	0.0109	1.309	0.0453	0.0159	0.0023	0.0021	0.0020	ND	0.0023
o-Xylene		0.4269	0.0226	0.1764	0.0055	0.4634	0.0227	0.0023	0.0011	ND	0.0010	ND	0.0011
Total Xylenes		1.3423	0.0226	0.3347	0.0055	1.772	0.0227	0.0182	0.0011	0.0021	0.0010	ND	0.0011
Total BTEX		1.3423	0.0226	0.4320	0.0055	7.770	0.0227	0.0362	0.0011	0.0094	0.0010	ND	0.0011
Percent Moisture	*Extracted:*												
	Analyzed:	Sep-22-10 17:00		Sep-22-10 17:00		Sep-22-10 17:00		Sep-22-10 17:00		Sep-22-10 17:00		Sep-22-10 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		11.6	1.00	8.60	1.00	11.7	1.00	12.2	1.00	2.22	1.00	11.5	1.00
TPH By SW8015 Mod	*Extracted:*	Sep-22-10 11:20		Sep-22-10 11:20		Sep-22-10 11:20		Sep-22-10 11:20		Sep-22-10 11:20		Sep-22-10 11:20	
	Analyzed:	Sep-22-10 16:19		Sep-22-10 16:38		Sep-22-10 16:57		Sep-22-10 17:17		Sep-22-10 17:55		Sep-22-10 18:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		454	17.0	1120	16.4	2530	17.0	60.9	17.1	16.4	15.3	41.6	17.0
C12-C28 Diesel Range Hydrocarbons		2270	17.0	5210	16.4	3730	17.0	301	17.1	428	15.3	381	17.0
C28-C35 Oil Range Hydrocarbons		90.7	17.0	345	16.4	285	17.0	18.1	17.1	36.9	15.3	ND	17.0
Total TPH		2815	17.0	6675	16.4	6545	17.0	380	17.1	481	15.3	423	17.0

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 390736

Endeavor Energy, Midland, TX

Project Name: Peterson "C" Well #1

Project Id: Fence line Pit
Contact: Ronnie Nickell
Project Location: Roosevelt Co., NM

Date Received in Lab: Wed Sep-22-10 09:25 am
Report Date: 25-SEP-10
Project Manager: Brent Barron, II

Analysis Requested							
	Lab Id:	390736-007					
	Field Id:	PWFS3-001					
	Depth:	0-48 In					
	Matrix:	SOIL					
	Sampled:	Sep-21-10 12:57					
Anions by E300	*Extracted:*						
	Analyzed:	Sep-22-10 12:14					
	Units/RL:	mg/kg	RL				
Chloride		25.8	4.61				
BTEX by EPA 8021B	*Extracted:*	Sep-22-10 12:50					
	Analyzed:	Sep-23-10 10:17					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.0011				
Toluene		ND	0.0022				
Ethylbenzene		ND	0.0011				
m,p-Xylenes		ND	0.0022				
o-Xylene		ND	0.0011				
Total Xylenes		ND	0.0011				
Total BTEX		ND	0.0011				
Percent Moisture	*Extracted:*						
	Analyzed:	Sep-22-10 17:00					
	Units/RL:	%	RL				
Percent Moisture		8.88	1.00				
TPH By SW8015 Mod	*Extracted:*	Sep-22-10 11:20					
	Analyzed:	Sep-22-10 18:34					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	16.5				
C12-C28 Diesel Range Hydrocarbons		ND	16.5				
C28-C35 Oil Range Hydrocarbons		ND	16.5				
Total TPH		ND	16.5				

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - San Antonio - Corpus Christi - Midland/Odessa - Tampa - Miami - Latin America

	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well #1

Work Orders : 390736,

Project ID: Fence line Pit

Lab Batch #: 824526 **Sample:** 574012-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/23/10 04:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 824526 **Sample:** 574012-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/23/10 04:39

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 824526 **Sample:** 574012-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/23/10 05:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 824526 **Sample:** 390757-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/23/10 06:24

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 824526 **Sample:** 390757-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/23/10 06:45

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY				
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well #1

Work Orders : 390736,

Project ID: Fence line Pit

Lab Batch #: 824526 **Sample:** 390736-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/23/10 09:56

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 824526 **Sample:** 390736-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/23/10 10:17

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 824526 **Sample:** 390736-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/23/10 14:41

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0472	0.0300	157	80-120	*

Lab Batch #: 824526 **Sample:** 390736-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/23/10 15:24

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.1338	0.0300	446	80-120	*

Lab Batch #: 824570 **Sample:** 574257-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/23/10 17:50

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well #1

Work Orders : 390736,

Project ID: Fence line Pit

Lab Batch #: 824258 **Sample:** 390739-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/22/10 21:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.0	99.7	87	70-135	
o-Terphenyl	44.5	49.9	89	70-135	

Lab Batch #: 824258 **Sample:** 390739-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/22/10 21:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	99.8	87	70-135	
o-Terphenyl	44.4	49.9	89	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Peterson "C" Well #1

Work Order #: 390736 **Project ID:** Fence line Pit

Analyst: SEE **Date Prepared:** 09/22/2010 **Date Analyzed:** 09/23/2010

Lab Batch ID: 824526 **Sample:** 574012-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1070	107	0.1	0.0989	99	8	70-130	35	
Toluene	ND	0.1000	0.0948	95	0.1	0.0862	86	10	70-130	35	
Ethylbenzene	ND	0.1000	0.0996	100	0.1	0.0898	90	10	71-129	35	
m,p-Xylenes	ND	0.2000	0.1995	100	0.2	0.1801	90	10	70-135	35	
o-Xylene	ND	0.1000	0.0826	83	0.1	0.0752	75	9	71-133	35	

Analyst: SEE **Date Prepared:** 09/23/2010 **Date Analyzed:** 09/23/2010

Lab Batch ID: 824570 **Sample:** 574257-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0918	92	0.1	0.0819	82	11	70-130	35	
Toluene	ND	0.1000	0.0899	90	0.1	0.0804	80	11	70-130	35	
Ethylbenzene	ND	0.1000	0.0924	92	0.1	0.0826	83	11	71-129	35	
m,p-Xylenes	ND	0.2000	0.1834	92	0.2	0.1640	82	11	70-135	35	
o-Xylene	ND	0.1000	0.0921	92	0.1	0.0823	82	11	71-133	35	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ınk Spike Recovery [D] = 100*(C)/[B]
ınk Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Peterson "C" Well #1

Work Order #: 390736 **Project ID:** Fence line Pit

Analyst: SEE **Date Prepared:** 09/24/2010 **Date Analyzed:** 09/24/2010

Lab Batch ID: 824680 **Sample:** 574313-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.5000	0.4256	85	0.5	0.4773	95	11	70-130	35	
Toluene	ND	0.5000	0.4194	84	0.5	0.4712	94	12	70-130	35	
Ethylbenzene	ND	0.5000	0.4346	87	0.5	0.4868	97	11	71-129	35	
m,p-Xylenes	ND	1.000	0.8629	86	1	0.9618	96	11	70-135	35	
o-Xylene	ND	0.5000	0.4360	87	0.5	0.4869	97	11	71-133	35	

Analyst: LATCOR **Date Prepared:** 09/22/2010 **Date Analyzed:** 09/22/2010

Lab Batch ID: 824277 **Sample:** 824277-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.74	97	10	9.64	96	1	75-125	20	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ınk Spike Recovery [D] = 100*(C)/[B]
ınk Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Peterson "C" Well #1

Work Order #: 390736 **Project ID:** Fence line Pit

Analyst: BEV **Date Prepared:** 09/22/2010 **Date Analyzed:** 09/22/2010

Lab Batch ID: 824258 **Sample:** 574058-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1020	102	1010	1070	106	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	905	91	1010	913	90	1	70-135	35	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ınk Spike Recovery [D] = 100*(C)/[B]
ınk Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

Final 1.000

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Peterson "C" Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Work Order #: 390736
Lab Batch #: 824277
Project ID: Fence line Pit
Date Analyzed: 09/22/2010
Date Prepared: 09/22/2010
Analyst: LATCOR
QC- Sample ID: 390736-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	539	226	756	96	75-125	

atrix Spike Percent Recovery [D] = 100*(C-A)/B
lative Percent Difference [E] = 200*(C-A)/(C+B)
l Results are based on MDL and Validated for QC Purposes

RL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Peterson "C" Well #1

Work Order # : 390736 **Project ID:** Fence line Pit

Lab Batch ID: 824526 **QC- Sample ID:** 390757-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/23/2010 **Date Prepared:** 09/22/2010 **Analyst:** SEE

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1225	0.0909	74	0.1225	0.1028	84	12	70-130	35	
Toluene	ND	0.1225	0.0631	52	0.1225	0.0733	60	15	70-130	35	X
Ethylbenzene	ND	0.1225	0.0724	59	0.1225	0.0831	68	14	71-129	35	X
m,p-Xylenes	ND	0.2451	0.1763	72	0.2451	0.1967	80	11	70-135	35	
o-Xylene	ND	0.1225	0.0735	60	0.1225	0.0826	67	12	71-133	35	X

Lab Batch ID: 824570 **QC- Sample ID:** 391036-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/23/2010 **Date Prepared:** 09/23/2010 **Analyst:** SEE

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0812	81	0.1000	0.0839	84	3	70-130	35	
Toluene	0.0050	0.1000	0.0818	77	0.1000	0.0843	79	3	70-130	35	
Ethylbenzene	0.0046	0.1000	0.0796	75	0.1000	0.0819	77	3	71-129	35	
m,p-Xylenes	0.0051	0.2000	0.1522	74	0.2000	0.1569	76	3	70-135	35	
o-Xylene	0.0021	0.1000	0.0730	71	0.1000	0.0752	73	3	71-133	35	

rix Spike Percent Recovery [D] = 100*(C-A)/B
ıtive Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

= Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not licableN = See Narrative, EQL = Estimated Quantitation Limit

Final 1.000

XENCO Laboratories

Form 3 - MS / MSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Peterson "C" Well #1

Work Order # : 390736 **Project ID:** Fence line Pit

Lab Batch ID: 824258 **QC- Sample ID:** 390739-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/22/2010 **Date Prepared:** 09/22/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1200	103	1160	1220	105	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	944	81	1160	955	82	1	70-135	35	

rix Spike Percent Recovery [D] = 100*(C-A)/B
itive Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

= Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not licableN = See Narrative, EQL = Estimated Quantitation Limit

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	3.6 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

Regarding: _____

_____

Corrective Action Taken: _____

_____

_____

_____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 392009

for

Endeavor Energy

Project Manager: Ronnie Nickell

Peterson "C" Well #1

Pit

05-OCT-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

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XENCO Laboratories

05-OCT-10

Project Manager: **Ronnie Nickell**
Endeavor Energy
110 N. Marienfeld, Suite 200

Midland, TX 79701

Reference: XENCO Report No: **392009**
Peterson "C" Well #1
Project Address: Roosevelt Co, NM

Ronnie Nickell:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 392009. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 392009 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Sample Cross Reference 392009

Endeavor Energy, Midland, TX

Peterson "C" Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PW SE1-002	S	Sep-30-10 10:17	0 - 60 In	392009-001
PW NE2-002	S	Sep-30-10 10:22	0 - 60 In	392009-002
PW NW3-002	S	Sep-30-10 10:26	0 - 60 In	392009-003
PW SW4-002	S	Sep-30-10 10:30	0 - 60 In	392009-004

CASE NARRATIVE

XENCO Laboratories

Client Name: Endeavor Energy
Project Name: Peterson "C" Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Project ID: *Pit*
Work Order Number: *392009*

Report Date: *05-OCT-10*
Date Received: *10/01/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 392009

Endeavor Energy, Midland, TX

Project Name: Peterson "C" Well #1

Project Id: Pit
Contact: Ronnie Nickell
Project Location: Roosevelt Co, NM

Date Received in Lab: Fri Oct-01-10 08:44 am
Report Date: 05-OCT-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	392009-001		392009-002		392009-003		392009-004					
	Field Id:	PW SE1-002		PW NE2-002		PW NW3-002		PW SW4-002					
	Depth:	0-60 In		0-60 In		0-60 In		0-60 In					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Sep-30-10 10:17		Sep-30-10 10:22		Sep-30-10 10:26		Sep-30-10 10:30					
Anions by E300	Extracted:												
	Analyzed:	Oct-01-10 14:40		Oct-01-10 14:40		Oct-01-10 14:40		Oct-01-10 14:40					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		91.6	4.59	376	9.29	149	4.58	50.3	4.78				
Percent Moisture	Extracted:												
	Analyzed:	Oct-01-10 17:00		Oct-01-10 17:00		Oct-01-10 17:00		Oct-01-10 17:00					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		8.42	1.00	9.57	1.00	8.21	1.00	12.1	1.00				
TPH By SW8015 Mod	Extracted:	Oct-01-10 10:40		Oct-01-10 10:40		Oct-01-10 10:40		Oct-01-10 10:40					
	Analyzed:	Oct-01-10 14:32		Oct-01-10 14:51		Oct-01-10 15:10		Oct-01-10 15:29					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		2110	16.4	2020	16.6	1640	16.3	17.1	17.1				
C12-C28 Diesel Range Hydrocarbons		3520	16.4	4980	16.6	3160	16.3	123	17.1				
C28-C35 Oil Range Hydrocarbons		128	16.4	188	16.6	113	16.3	ND	17.1				
Total TPH		5758	16.4	7188	16.6	4913	16.3	140	17.1				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

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XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well #1

Work Orders : 392009,

Project ID: Pit

Lab Batch #: 825806 **Sample:** 575002-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/01/10 12:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.2	100	84	70-135	
o-Terphenyl	55.1	50.2	110	70-135	

Lab Batch #: 825806 **Sample:** 575002-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/01/10 12:51

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	168	201	84	70-135	
o-Terphenyl	92.6	100	93	70-135	

Lab Batch #: 825806 **Sample:** 575002-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/01/10 13:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	99.9	88	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 825806 **Sample:** 392009-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/01/10 14:32

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	46.2	50.1	92	70-135	

Lab Batch #: 825806 **Sample:** 392009-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/01/10 14:51

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	38.6	50.1	77	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well #1

Work Orders : 392009,

Project ID: Pit

Lab Batch #: 825806 **Sample:** 392009-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/01/10 15:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

Lab Batch #: 825806 **Sample:** 392009-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/01/10 15:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	100	87	70-135	
o-Terphenyl	47.1	50.2	94	70-135	

Lab Batch #: 825806 **Sample:** 392004-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/01/10 18:05

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.2	99.9	89	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 825806 **Sample:** 392004-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/02/10 09:25

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.9	100	87	70-135	
o-Terphenyl	57.0	50.1	114	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Peterson "C" Well #1

Work Order #: 392009 **Project ID:** Pit

Analyst: LATCOR **Date Prepared:** 10/01/2010 **Date Analyzed:** 10/01/2010

Lab Batch ID: 825707 **Sample:** 825707-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Anions by E300	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.3	103	10	10.2	102	1	75-125	20	

Analyst: BEV **Date Prepared:** 10/01/2010 **Date Analyzed:** 10/01/2010

Lab Batch ID: 825806 **Sample:** 575002-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1010	101	1000	1050	105	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	903	90	1000	815	82	10	70-135	35	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ank Spike Recovery [D] = 100*(C)/[B]
ank Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

Final 1.000

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Peterson "C" Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Work Order #: 392009
Lab Batch #: 825707
Project ID: Pit
Date Analyzed: 10/01/2010
Date Prepared: 10/01/2010
Analyst: LATCOR
QC- Sample ID: 392009-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	91.6	109	205	104	75-125	

atrix Spike Percent Recovery [D] = 100*(C-A)/B
lative Percent Difference [E] = 200*(C-A)/(C+B)
l Results are based on MDL and Validated for QC Purposes

RL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Peterson "C" Well #1

Work Order # : 392009 **Project ID:** Pit

Lab Batch ID: 825806 **QC- Sample ID:** 392004-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/01/2010 **Date Prepared:** 10/01/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1040	1100	106	1040	1070	103	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	890	86	1040	875	84	2	70-135	35	

rix Spike Percent Recovery [D] = 100*(C-A)/B Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E
ıtive Percent Difference RPD = 200*|(C-F)/(C+F)|

= Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not licableN = See Narrative, EQL = Estimated Quantitation Limit

Final 1.000

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Peterson "C" Well #1

Work Order #: 392009

Lab Batch #: 825707 **Project ID:** Pit

Date Analyzed: 10/01/2010 **Date Prepared:** 10/01/2010 **Analyst:** LATCOR

QC- Sample ID: 392009-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	91.6	94.1	3	20	

Lab Batch #: 825712

Date Analyzed: 10/01/2010 **Date Prepared:** 10/01/2010 **Analyst:** JLG

QC- Sample ID: 392004-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	10.0	10.4	4	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY REC

12600 West I-20 East
Odessa, Texas 79765

Project Manager: Bennie Nickell

Company Name: Endeavor Energy

Company Address:

City/State/Zip: Midland, TX

Telephone No: Fax No:

Sampler Signature: Russ Jace Cypert e-mail: rnnnie@southeaver...

Proje

Pro

Report F

(lab use only)
ORDER #: 392009

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other
	PK SE1-CO2	0"	6"	9-30-10	10:11am		1	↓								Soil
	PK NE2-CO2	↓	↓	↓	10:20am		1	↓								↓
	PK NE3-CO2	↓	↓	↓	10:31am		1	↓								↓
	PK SE4-CO2	↓	↓	↓	10:41am		1	↓								↓

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	T
Russ Jace Cypert	1Oct10	8:44am			
Relinquished by:	Date	Time	Received by:	Date	T
Relinquished by:	Date	Time	Received by ELOT:	Date	T
			[signature]	10/1/10	[illegible]

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	3.4 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

~~Blue~~ 8@402 Exxi

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 394229

for

Endeavor Energy

Project Manager: Ronnie Nickell

Peterson "C" Well #1

21-OCT-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

21-OCT-10

Project Manager: **Ronnie Nickell**
Endeavor Energy
110 N. Marienfeld, Suite 200

Midland, TX 79701

Reference: XENCO Report No: **394229**
Peterson "C" Well #1
Project Address: Roosevelt Co, NM

Ronnie Nickell:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 394229. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 394229 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 394229

Endeavor Energy, Midland, TX

Peterson "C" Well #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PWSE1-003	S	Oct-19-10 13:15	0 - 10 ft	394229-001
PWNE2-003	S	Oct-19-10 13:20	0 - 10 ft	394229-002
PWNW3-003	S	Oct-19-10 13:25	0 - 10 ft	394229-003

CASE NARRATIVE

XENCO Laboratories

Client Name: Endeavor Energy
Project Name: Peterson "C" Well #1

ACCREDITED IN ACCORDANCE WITH nelac

Project ID:
Work Order Number: 394229

Report Date: 21-OCT-10
Date Received: 10/20/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 394229

Endeavor Energy, Midland, TX

Project Name: Peterson "C" Well #1

Project Id:
Contact: Ronnie Nickell
Project Location: Roosevelt Co, NM

Date Received in Lab: Wed Oct-20-10 08:15 am
Report Date: 21-OCT-10
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	394229-001		394229-002		394229-003					
	Field Id:	PWSE1-003		PWNE2-003		PWNW3-003					
	Depth:	0-10 ft		0-10 ft		0-10 ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Oct-19-10 13:15		Oct-19-10 13:20		Oct-19-10 13:25					
Percent Moisture	Extracted:										
	Analyzed:	Oct-20-10 09:50		Oct-20-10 09:50		Oct-20-10 09:50					
	Units/RL:	%	RL	%	RL	%	RL				
Percent Moisture		7.11	1.00	1.70	1.00	7.86	1.00				
TPH By SW8015 Mod	Extracted:	Oct-20-10 09:35		Oct-20-10 09:35		Oct-20-10 09:35					
	Analyzed:	Oct-20-10 12:21		Oct-20-10 12:41		Oct-20-10 13:00					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	16.1	ND	15.3	ND	16.3				
C12-C28 Diesel Range Hydrocarbons		ND	16.1	332	15.3	ND	16.3				
C28-C35 Oil Range Hydrocarbons		ND	16.1	ND	15.3	ND	16.3				
Total TPH		ND	16.1	332	15.3	ND	16.3				

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well #1

Work Orders : 394229,

Project ID:

Lab Batch #: 828395 **Sample:** 576599-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/20/10 11:23

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.5	100	76	70-135	
o-Terphenyl	54.1	50.1	108	70-135	

Lab Batch #: 828395 **Sample:** 576599-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/20/10 11:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.9	99.7	75	70-135	
o-Terphenyl	42.8	49.9	86	70-135	

Lab Batch #: 828395 **Sample:** 576599-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/20/10 12:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.7	100	80	70-135	
o-Terphenyl	43.2	50.1	86	70-135	

Lab Batch #: 828395 **Sample:** 394229-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/20/10 12:21

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.3	99.6	77	70-135	
o-Terphenyl	40.5	49.8	81	70-135	

Lab Batch #: 828395 **Sample:** 394229-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/20/10 12:41

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.2	100	73	70-135	
o-Terphenyl	40.9	50.1	82	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well #1

Work Orders : 394229,

Project ID:

Lab Batch #: 828395 **Sample:** 394229-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/20/10 13:00

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.9	100	74	70-135	
o-Terphenyl	39.4	50.1	79	70-135	

Lab Batch #: 828395 **Sample:** 394229-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/20/10 16:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	100	83	70-135	
o-Terphenyl	46.4	50.2	92	70-135	

Lab Batch #: 828395 **Sample:** 394229-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/20/10 17:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.6	100	77	70-135	
o-Terphenyl	39.1	50.1	78	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

BS / BSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Peterson "C" Well #1

Work Order #: 394229 **Project ID:**

Analyst: BEV **Date Prepared:** 10/20/2010 **Date Analyzed:** 10/20/2010

Lab Batch ID: 828395 **Sample:** 576599-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	985	99	997	949	95	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	887	89	997	864	87	3	70-135	35	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ınk Spike Recovery [D] = 100*(C)/[B]
ınk Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS / MSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Peterson "C" Well #1

Work Order # : 394229 **Project ID:**

Lab Batch ID: 828395 **QC- Sample ID:** 394229-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/20/2010 **Date Prepared:** 10/20/2010 **Analyst:** BEV

Reporting Units: mg/kg

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
C6-C12 Gasoline Range Hydrocarbons	ND	1090	1110	102	1090	1040	95	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1090	1070	98	1090	951	87	12	70-135	35	

rix Spike Percent Recovery [D] = 100*(C-A)/B Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E
ıtive Percent Difference RPD = 200*|(C-F)/(C+F)|

= Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not licableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Peterson "C" Well #1

Work Order #: 394229

Lab Batch #: 828255 **Project ID:**

Date Analyzed: 10/20/2010 **Date Prepared:** 10/20/2010 **Analyst:** WRU

QC- Sample ID: 394227-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Percent Moisture **Analyte**	**Parent Sample Result [A]**	**Sample Duplicate Result [B]**	**RPD**	**Control Limits %RPD**	**Flag**
Percent Moisture	2.15	2.09	3	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Ronnie Nickell
Company Name: Endeavor Engery
Company Address:
City/State/Zip: Midland TX
Telephone No:
Fax No:
Sampler Signature: Kassi Love Cyport
e-mail: ronnie@southenv.com / kassi@southenv.com

Project Name: Peterson "C" Well #1
Project #:
Project Loc: Roosevelt Co, NM
PO #:
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 394229

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge, GW = Groundwater S=Soil/Solid, NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.				RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	PWSE1-003	0"	10'	20Oct10	1:15pm		1	↓								Soil	↓														↓	
	PWNE2-003	↓	↓	↓	1:20pm		1	↓								↓	↓														↓	
	PWNW3-003	↓	↓	↓	1:25pm		1	↓								↓	↓														↓	

(Analyze For: TCLP: / TOTAL:; 8015M and 24 circled)

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Kassi Love Cypert	20Oct10	8:17am			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Lisa Murdock	10/20/10	8:15

Laboratory Comments:
VOCs Free of Headspace? Y (N/A)
Custody seals on container(s) Y (N)
Sample Hand Delivered (Y) N
by Sampler/Client Rep.? (Y) N
by Courier? UPS DHL FedEx Lone Star
4oz glass
Temperature Upon Receipt: 4 °C

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Endeavor Energy
Date/Time: 10/20/10 8:15
Lab ID #: 394229
Initials: KM

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	(No)	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	Yes	No	(N/A)	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	4 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 403457

for

Endeavor Energy

Project Manager: Ronnie Nickell

Peterson "C" Well # 1

14-JAN-11

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

14-JAN-11

Project Manager: **Ronnie Nickell**
Endeavor Energy
110 N. Marienfeld, Suite 200

Midland, TX 79701

Reference: XENCO Report No: **403457**
Peterson "C" Well # 1
Project Address: Roosevelt Co., NM

Ronnie Nickell:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 403457. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 403457 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 403457

Endeavor Energy, Midland, TX

Peterson "C" Well # 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PWN1-001	S	Jan-12-11 10:10	0 - 10 ft	403457-001

CASE NARRATIVE

XENCO Laboratories

Client Name: Endeavor Energy
Project Name: Peterson "C" Well # 1

ACCREDITED IN ACCORDANCE WITH nelac

Project ID:
Work Order Number: 403457

Report Date: 14-JAN-11
Date Received: 01/12/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-839679 BTEX by EPA 8021B
SW8021BM

Batch 839679, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 403457-001.

SW8021BM

Batch 839679, Benzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 403457-001.
The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

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Certified and approved by numerous States and Agencies.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well # 1

Work Orders : 403457,

Project ID:

Lab Batch #: 839679 **Sample:** 593374-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/11 22:37

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 839679 **Sample:** 593374-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/11 22:59

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 839679 **Sample:** 593374-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/14/11 00:08

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 839679 **Sample:** 403367-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/14/11 04:16

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 839679 **Sample:** 403367-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/14/11 04:39

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well # 1

Work Orders : 403457,

Project ID:

Lab Batch #: 839679 **Sample:** 403457-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/14/11 08:02

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0426	0.0300	142	80-120	**

Lab Batch #: 839642 **Sample:** 593361-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/11 11:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	100	88	70-135	
o-Terphenyl	40.3	50.1	80	70-135	

Lab Batch #: 839642 **Sample:** 593361-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/11 11:32

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	100	86	70-135	
o-Terphenyl	40.0	50.1	80	70-135	

Lab Batch #: 839642 **Sample:** 593361-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/11 11:51

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.1	99.9	72	70-135	
o-Terphenyl	36.5	50.0	73	70-135	

Lab Batch #: 839642 **Sample:** 403457-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/11 16:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.5	100	84	70-135	
o-Terphenyl	42.5	50.2	85	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Peterson "C" Well # 1

Work Orders : 403457,

Project ID:

Lab Batch #: 839642 **Sample:** 403434-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/11 17:40

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.9	99.9	88	70-135	
o-Terphenyl	37.9	50.0	76	70-135	

Lab Batch #: 839642 **Sample:** 403434-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/11 18:00

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.1	100	87	70-135	
o-Terphenyl	37.6	50.0	75	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Peterson "C" Well # 1

Work Order #: 403457 **Project ID:**

Analyst: ASA **Date Prepared:** 01/13/2011 **Date Analyzed:** 01/13/2011

Lab Batch ID: 839679 **Sample:** 593374-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0010	0.1000	0.0983	98	0.1	0.0945	95	4	70-130	35	
Toluene	<0.0020	0.1000	0.0952	95	0.1	0.0908	91	5	70-130	35	
Ethylbenzene	<0.0010	0.1000	0.0961	96	0.1	0.0917	92	5	71-129	35	
m_p-Xylenes	<0.0020	0.2000	0.1963	98	0.2	0.1880	94	4	70-135	35	
o-Xylene	<0.0010	0.1000	0.0985	99	0.1	0.0923	92	6	71-133	35	

Analyst: LATCOR **Date Prepared:** 01/13/2011 **Date Analyzed:** 01/13/2011

Lab Batch ID: 839550 **Sample:** 839550-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 4.20	10.0	9.39	94	10	9.05	91	4	75-125	20	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ınk Spike Recovery [D] = 100*(C)/[B]
ınk Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Peterson "C" Well # 1

Work Order #: 403457 **Project ID:**

Analyst: BEV **Date Prepared:** 01/13/2011 **Date Analyzed:** 01/13/2011

Lab Batch ID: 839642 **Sample:** 593361-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<50.0	1000	882	88	1000	881	88	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<50.0	1000	792	79	1000	845	85	6	70-135	35	

lative Percent Difference RPD = 200*|(C-F)/(C+F)|
ınk Spike Recovery [D] = 100*(C)/[B]
ınk Spike Duplicate Recovery [G] = 100*(F)/[E]
results are based on MDL and Validated for QC Purposes

Final 1.000

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: Peterson "C" Well # 1

ACCREDITED IN ACCORDANCE WITH nelac

Work Order #: 403457

Lab Batch #: 839550

Project ID:

Date Analyzed: 01/13/2011

Date Prepared: 01/13/2011

Analyst: LATCOR

QC- Sample ID: 403434-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	260	1020	1220	94	75-125	

atrix Spike Percent Recovery [D] = 100*(C-A)/B

lative Percent Difference [E] = 200*(C-A)/(C+B)

1 Results are based on MDL and Validated for QC Purposes

RL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Peterson "C" Well # 1

Work Order # : 403457 **Project ID:**

Lab Batch ID: 839679 **QC- Sample ID:** 403367-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/14/2011 **Date Prepared:** 01/13/2011 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0010	0.1040	0.0597	57	0.1040	0.0733	70	20	70-130	35	X
Toluene	0.0063	0.1040	0.0660	57	0.1040	0.0787	70	18	70-130	35	X
Ethylbenzene	0.0041	0.1040	0.0610	55	0.1040	0.0737	67	19	71-129	35	X
m_p-Xylenes	0.0296	0.2080	0.1506	58	0.2080	0.1777	71	17	70-135	35	X
o-Xylene	0.0013	0.1040	0.0703	66	0.1040	0.0817	77	15	71-133	35	X

Lab Batch ID: 839642 **QC- Sample ID:** 403434-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/13/2011 **Date Prepared:** 01/13/2011 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.6	1020	911	89	1020	898	88	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.6	1020	760	75	1020	721	71	5	70-135	35	

rix Spike Percent Recovery [D] = 100*(C-A)/B Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E
ıtive Percent Difference RPD = 200*|(C-F)/(C+F)|

= Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not licableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Peterson "C" Well # 1

Work Order #: 403457

Lab Batch #: 839550 **Project ID:**

Date Analyzed: 01/13/2011 09:01 **Date Prepared:** 01/13/2011 **Analyst:** LATCOR

QC- Sample ID: 403434-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	260	260	0	20	

Lab Batch #: 839545

Date Analyzed: 01/13/2011 09:00 **Date Prepared:** 01/13/2011 **Analyst:** WRU

QC- Sample ID: 403434-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.25	2.31	3	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Ronnie Nickell
Company Name: Endeavor Energy
Company Address:
City/State/Zip: Midland Tx
Telephone No:
Sampler Signature: Kassi Joe Cypert

Project Name: Peterson "C" Well #1
Project #:
Project Loc: Roosevelt Co, NM
PO #:
Report Format: [X] Standard [ ] TRRP [ ] NPDES
Fax No:
e-mail: ronnie, kassi, joe @ southernv.com

(lab use only)
ORDER #: 403457

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1	8015M	TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	TOTAL:	TURN AROUND TIME: RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	PWN1-001	0"	10'	12 Jan 11	10:10am		1	1								Soil	1				1						1				1	

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Kassi Joe Cypert	12 Jan 11	2:53pm			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andria Elam	1-12-11	14:53

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star
402 glass
Temperature Upon Receipt: 3.6 °C

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Endeavor Energy
Date/Time: 1 12 11 14:53
Lab ID # : 403457
Initials: AE

Sample Receipt Checklist

1. Samples on ice?						Blue	(Water)	No			
2. Shipping container in good condition?						(Yes)	No	None			
3. Custody seals intact on shipping container (cooler) and bottles?						Yes	No	(N/A)			
4. Chain of Custody present?						(Yes)	No				
5. Sample instructions complete on chain of custody?						(Yes)	No				
6. Any missing / extra samples?						Yes	(No)				
7. Chain of custody signed when relinquished / received?						(Yes)	No				
8. Chain of custody agrees with sample label(s)?						(Yes)	No				
9. Container labels legible and intact?						(Yes)	No				
10. Sample matrix / properties agree with chain of custody?						(Yes)	No				
11. Samples in proper container / bottle?						(Yes)	No				
12. Samples properly preserved?						(Yes)	No	N/A			
13. Sample container intact?						(Yes)	No				
14. Sufficient sample amount for indicated test(s)?						(Yes)	No				
15. All samples received within sufficient hold time?						(Yes)	No				
16. Subcontract of sample(s)?						Yes	No	(N/A)			
17. VOC sample have zero head space?						(Yes)	No	N/A			
18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.			
lbs	3.6 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C		

Nonconformance Documentation

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

Regarding: _____

_____

Corrective Action Taken: _____

_____

_____

_____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis