

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003

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

**Release Notification and Corrective Action**

1RP-2012

**OPERATOR**

Initial Report  Final Report

Name of Company	Plains Pipeline, LP	Contact	Jason Henry
Address	2530 Hwy 214 - Denver City, Tx 79323	Telephone No.	(575) 441-1099
Facility Name	Hugh Gathering Eubanks Discharge 4"	Facility Type	Pipeline

Surface Owner	Charlie Bettis	Mineral Owner		Lease No.	
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	22	21S	37E					Lea

Latitude N 32.46682° Longitude W 103.14531°

**NATURE OF RELEASE**

Type of Release	Crude Oil	Volume of Release	1940 bbls	Volume Recovered	1280 bbls
Source of Release	4" steel pipeline	Date and Hour of Occurrence	11/23/2008	Date and Hour of Discovery	11/23/2008 08:00
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Larry Johnson			
By Whom?	Daniel Bryant	Date and Hour	11/24/2008 08:30		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

**RECEIVED**  
JAN 12 2010  
HOBBSOCD

Describe Cause of Problem and Remedial Action Taken.\*

Thermal expansion behind a stuck brush pig caused a 4" pipeline to rupture along the pipe seam at a corroded soil air interface releasing crude oil. Pipeline was replaced on 11/24/2008. Throughput on the line is approximately 1774 bbls per day. Operating pressure of the pipeline is 90 psi. The pipeline was above ground at the release location. H2S content of the crude is less than 10 ppm. The gravity of the crude is 38.5.

Describe Area Affected and Cleanup Action Taken.\*

Released crude oil collected in two low-lying areas impacting an area which measured approximately 500' X 300'. Please see the attached Terracon Soil Closure Compliance Report for details of remedial activities conducted at the site.

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

Signature:	<i>Jason Henry</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name:	Jason Henry	Approved by District	<i>L. Johnson</i> ENVIRONMENTAL ENGINEER
Title:	Remediation Coordinator	Approval Date:	1.12.10
E-mail Address:	jhenry@paalp.com	Expiration Date:	—
Date:	01-12-2010	Conditions of Approval:	Attached <input type="checkbox"/> IRP - 2012
Phone:	(575) 441-1099		

\* Attach Additional Sheets If Necessary

**Soil Closure Compliance Report**

**Hugh Gathering Eubanks Discharge 4”  
Unit Letter H, Section 22, Township 21 South, Range 37 East  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Lea County, New Mexico**

**Terracon Project Number: A4087125**

**August 5, 2009**

***Prepared for:***

**Plains Pipeline, L.P.  
2530 State Highway 214  
Denver City, Texas 79323**

***Prepared by:***

**Terracon**  
Midland, Texas

August 5, 2009

Plains Pipeline, L.P.  
2530 State Highway 214  
Denver City, Texas 79323  
Attn: Mr. Jason Henry

Telephone: (575) 441-1099  
Facsimile: (806) 592-8305

Re: Hugh Gathering Eubanks Discharge 4"  
Unit Letter H, Section 22, Township 21 South, Range 37 East  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Lea County, New Mexico  
Terracon Project Number A4087125

**Terracon**  
Consulting Engineers & Scientists

Terracon Consultants, Inc.  
24 Smith Road, Suite 261  
Midland, Texas 79705  
Phone 432.684.9600  
Fax 432.684.9608  
www.terracon.com

Dear Mr. Henry:

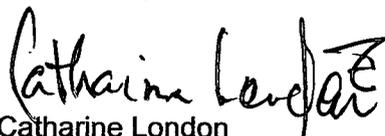
Terracon is pleased to submit four copies of the Soil Closure Compliance Report for the above referenced site.

We appreciate the opportunity to participate in the site remediation project at Hugh Gathering Eubanks Discharge 4" site for Plains Pipeline, L.P. Please contact either of the undersigned at (432) 684-9600 if you have questions regarding the information provided in the report.

Sincerely,

**Terracon**

Prepared by:

  
Catharine London  
Senior Project Manager

Reviewed by:

  
Barrett W. Bole  
Senior Associate  
*for Barrett W. Bole*

## TABLE OF CONTENTS

	Page No.
1.0 INTRODUCTION.....	1
2.0 FIELD ACTIVITIES .....	4
3.0 FINDINGS AND CONCLUSIONS .....	6

### LIST OF APPENDICES

- Appendix A: Figure 1- Topographic Map  
Figure 2 – Site Plan and Sample Location Map
- Appendix B: Tables
- Appendix C: Laboratory Data Sheets
- Appendix D: Site Photographs
- Appendix E: Regulatory Documents
- Appendix F: CD of the Soil Closure Compliance Report

# Soil Closure Compliance Report

Hugh Gathering Eubanks Discharge 4"  
Unit Letter H, Section 22, Township 21 South, Range 37 East  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Lea County, New Mexico

Terracon Project Number A4087125

## 1.0 INTRODUCTION

The Hugh Gathering Eubanks Discharge 4" project site is located approximately 2.5 miles north of the intersection of Highway 137 and Highway 18, thence approximately 1.1 miles west on a gravel road, and thence approximately ½ mile south, near the town of Eunice in Lea County, New Mexico. The crude oil release was located on property owned by Mr. Charlie Bettis. The release was discovered on November 23, 2008, with a reported 1,940 barrels (bbls) of crude oil released. Approximately 1,280 bbls of crude oil was recovered by Plains. At the time of the discovery, the four-inch diameter pipeline had ruptured due to thermal expansion of a stuck brush pig along the pipe seam at a corroded soil air interface, causing the crude oil release. Plains notified the New Mexico Oil Conservation Division (OCD) by phone on November 23, 2008. The New Mexico OCD assigned the site a file number of 1RP-2012.

A visual site assessment was conducted on November 24, 2008 by Plains and Terracon representatives. The decision was made to conduct a limited site investigation using a backhoe, prior to remedial activities, in an effort to evaluate the vertical and horizontal extent of soil contamination. A utility locate call was placed to identify unknown utilities in the area and a backhoe and crew was scheduled.

## 1.1 Site Description

<b>Site Name</b>	Hugh Gathering Eubanks Discharge 4"
<b>Site Location/GPS</b>	The legal description of the site is the Unit Letter H, Section 22, Township 21 South, Range 37 East, Latitude/Longitude N 32.466267 / W 103.1445
<b>General Site Description</b>	The immediate area surrounding the pipeline right-of-way is native pasture land.

A topographic map is included as Figure 1; a Site Plan and Sample Locations map is included as Figure 2 in Appendix A.

**Soil Closure Compliance Report  
Hugh Gathering Eubanks Discharge 4"  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Terracon Project Number A4087125  
August 5, 2008**

## 1.2 Scope of Services

The Scope of Services for Terracon as requested by Plains Pipeline included:

- Investigation and remediation of impacted soil;
- Subsequent to analytical data indicating adherence to New Mexico OCD closure requirements, backfill and site restoration; and
- Submittal of a Soil Closure Compliance Report detailing field activities, site maps and photographs.

## 1.3 Regulatory Framework

Crude oil facilities in New Mexico are generally regulated by the New Mexico OCD. Contamination of soil due to a surface release of crude oil is addressed within a New Mexico OCD guideline titled *Guidelines for Remediation of Leaks, Spills and Releases*, dated August 13, 1993.

Soils which are impacted by petroleum constituents are scored according to the ranking criteria to determine their relative threat to public health, fresh water, and the environment. Such limits are defined by the depth to groundwater, wellhead protection area, and distance to surface water. Based on these ranking criteria, the remediation action level at this site is as follows:

Depth to Ground Water <50 feet Ranking Score = 20  
(As defined as vertical distance from lowermost contaminants to seasonal high water level).  
Groundwater was not encountered during excavation activities; confirmation soil samples were collected approximately four to 16 feet below ground surface (bgs). According to information obtained from the New Mexico Tech groundwater database groundwater at the site is approximately 53 feet bgs.

Wellhead Protection Area >1000 feet to water source  
>200 feet to domestic well Ranking Score = 0

Distance to Surface Water >1000 horizontal feet Ranking Score = 0

Total Ranking Score = 20

**Soil Closure Compliance Report  
Hugh Gathering Eubanks Discharge 4"  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Terracon Project Number A4087125  
August 5, 2008**

Based on total ranking criteria of 20, the remediation levels are as follows:

Benzene = 10 parts per million (ppm)  
BTEX = 50 ppm  
TPH = 100 ppm

#### **1.4 Standard of Care**

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report.

#### **1.5 Additional Scope Limitations**

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this remediation activities. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

#### **1.6 Reliance**

This report has been prepared for the exclusive use of Plains Pipeline, LP, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Plains Pipeline, LP and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in this report, and Terracon's Terms and Conditions. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

**Soil Closure Compliance Report  
Hugh Gathering Eubanks Discharge 4"  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Terracon Project Number A4087125  
August 5, 2008**

## **2.0 FIELD ACTIVITIES**

### **2.1 Site Investigation**

On November 24, 2008 a backhoe was transported to the site to begin site investigation of the vertical and horizontal extent of the impacted surface soil. The pipeline was located aboveground at the release location. The crude oil release collected in two low-lying areas impacting an area which measured approximately 500 feet by 300 feet at the site. A series of test trenches with total depths which ranged from eight to 13 feet bgs were advanced at the site. Based on a visual inspection of the trenches, it appeared the impact to surface soils ranged in depth from eight to 13 feet bgs. Confirmation soil samples were collected from the bottom of each of the test trenches and labeled T-1 (13'), T-2 (8') and T-2 (11'). The soil samples were placed in laboratory provided glass jars with a custody seal, placed on ice and relinquished to Xenco Laboratories, in Odessa, Texas for analysis of benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA Method 8021B, and total petroleum hydrocarbons (TPH), using EPA Method 8015M.

Laboratory results indicated TPH concentrations of 74.1 mg/kg in the soil sample T-2 (11') and 168.4 mg/kg and 14,410 mg/kg in soil samples T-1 (13') and T-2 (8'), respectively. BTEX constituents were not detected above laboratory reporting limits and/or New Mexico OCD remediation action levels in the soil samples collected from the trenches. The laboratory analytical reports and soil summary tables are included in Appendix B and C of this report.

### **2.2 Site Remediation**

On November 24, 2008, an excavator, bulldozer, back-hoe and front-loader were mobilized to the site and excavation of the impacted soil commenced. Excavation activities continued through December 5, 2008. The excavation was divided into three sections (Section 1, Section 2, and Section 3). Section 1 was the western portion of the excavation, Section 2 was the center of the excavation and Section 3 was the eastern portion of the excavation. On December 8, 2008, December 10, 2008, and December 11, 2008, confirmation soil samples were collected from the bottom and side walls of the excavated area and labeled SEC.1 BH-1 through BH-3, SEC.1 SW-1 through SW-5, SEC.2 BH-9 and BH-10, and SEC.3 BH-4 through BH-8, and SEC.3 SW-6 through SW-10. The soil samples were placed in laboratory provided glass jars with a custody seal, placed on ice and relinquished to Xenco Laboratories, in Odessa, Texas for analysis of BTEX and TPH. With the exception of soil samples SEC.1 BH-2, SEC.1 BH-3 and SEC.1 BH-5, laboratory results indicated TPH, benzene and BTEX concentrations below laboratory detection limits and/or New Mexico OCD Remediation Action Levels in the soil confirmation samples collected on December 8, 2008, December 10, 2008 and December 11, 2008.

**Soil Closure Compliance Report  
Hugh Gathering Eubanks Discharge 4"  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Terracon Project Number A4087125  
August 5, 2008**

A composite soil sample of the impacted material (Stock Pile 1) was collected on December 2, 2008, placed in laboratory provided glass jars with a custody seal, placed on ice and relinquished to Xenco Laboratories for analysis of toxicity characteristic leaching procedure (TCLP) semi-volatile organic compounds (SVOCs) using EPA Method 8270C, TCLP volatile organic analysis (VOA) using EPA Method 8260B, chloride using EPA Method 300, RCRA-8 Metals using Methods SW-846 6010B and 7471A, paint filter liquids test using Method SW-846 SW 9095, and percent moisture. Additionally, the sample was analyzed for naturally occurring radioactive materials (NORM). Laboratory results indicated the soil was acceptable to be transported to and remediated in a New Mexico OCD approved land farm.

On December 22, 2008, a composite soil sample (Stock Pile 1A) was collected from the stockpiled excavated materials at the site. The soil sample was analyzed for Flash Point using Method SW-846 1010, Reactive Cyanide using EPA Method 9010, Reactive Sulfide by Method SW 9030B and pH using EPA Method 9045C. The soil sample was placed in laboratory provided glass jars with a custody seal, placed on ice and relinquished to Xenco Laboratories for analysis. Laboratory results indicated that the flash point was >150 Degrees F, cyanide and sulfide were less than 50 mg/kg, and the soil had a pH of 7.65 pH units. The laboratory analytical reports and soil summary tables are included in Appendix B and C of this report.

TPH in the soil samples collected from SEC.1 BH-2, SEC.1 BH-3 and SEC. 1 BH-5 exceeded the New Mexico OCD remediation action level of 100 mg/kg. BTEX in the soil sample collected from SEC.3 BH-5 exceeded the New Mexico OCD remediation action level of 50 mg/kg. On December 22, 2008, a back-hoe was mobilized to the site and the areas that exceeded the New Mexico OCD remediation action levels were over excavated. Confirmation soil samples Sec. 1 BH-2A, Sec. 1 BH-3A, and Sec. 3 BH-5A were collected from the newly excavated areas. The soil samples were placed in laboratory provided glass jars with a custody seal, placed on ice and relinquished to Xenco Laboratories in Odessa, Texas, for analysis of TPH and BTEX. Laboratory results indicated TPH and BTEX concentrations below laboratory detection limits and/or New Mexico OCD remediation action levels in samples Sec. 1 BH-2A, Sec. 1 BH-3A, and Sec. 1 BH-5A. Laboratory analytical results and soil summary tables are included in Appendix B and C of this report.

## **2.2 Site Restoration**

The site was fenced to prevent livestock from entering the excavation. Several remedial objectives were discussed from January 2009 until April 2009. Ultimately at the landowner's request, the excavated stockpile (approximately 7,280 cubic yards (yds<sup>3</sup>)) was transported it to the Plains Lea Station Land Farm for remediation. Site restoration was completed using ambient soil and caliche material provided by the landowner, Mr. Charlie Bettis. Approximately 4,466 yds<sup>3</sup> of caliche and

**Soil Closure Compliance Report  
Hugh Gathering Eubanks Discharge 4"  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Terracon Project Number A4087125  
August 5, 2008**

3,304 yds<sup>3</sup> ambient soil was transported to the excavation and used as backfill. Additionally approximately 400 bbls of water was used to compact the material into the excavation. A front end loader was utilized to backfill the excavated area and the site was restored as near possible to the surrounding topography during May 2009 and June 2009.

### **3.0 FINDINGS AND CONCLUSIONS**

The Plains Pipeline, Hugh Gathering Eubanks Discharge 4" project site was investigated and remediated following the New Mexico OCD *Guidelines for Remediation of Leaks, Spills and Releases*, dated August 13, 1993. Based on a total ranking criteria of 20, the remediation levels were established as Benzene - 10 ppm, BTEX - 50 ppm and TPH - 100 ppm.

Terracon respectfully submits this closure compliance report to Plains Pipeline, L.P. as documentation of the site soil closure activities. Based on the results of our field activities and laboratory analyses, Terracon recommends that Plains Pipeline, L.P. submit this report to the New Mexico Oil Conservation Division as documentation that remediation was completed to New Mexico OCD standards. Terracon further recommends Plains requests a "no further action" letter for closure of this project site.

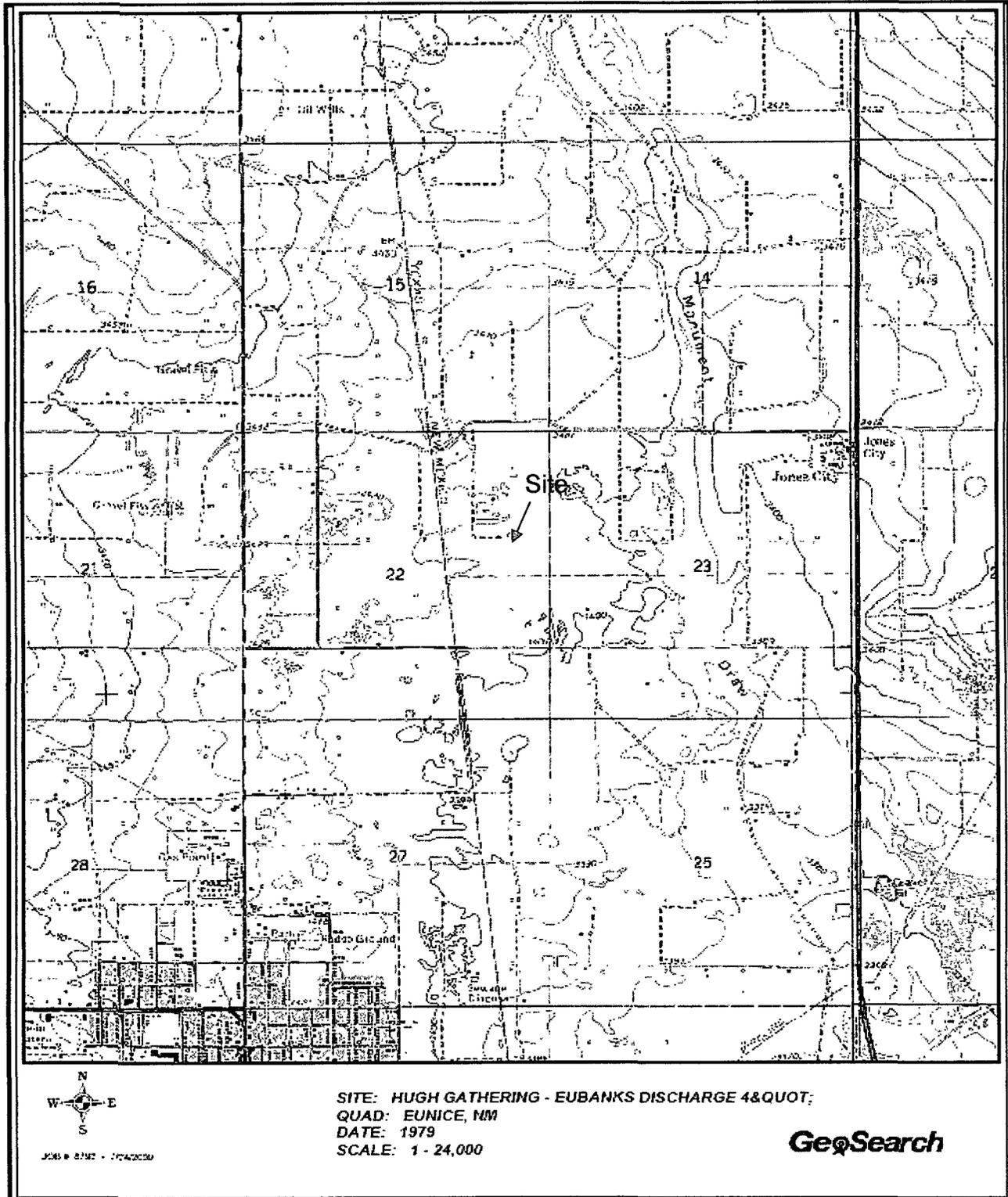
Soil Closure Compliance Report  
Hugh Gathering Eubanks Discharge 4"  
Plains Pipeline SRS Number 2008-311  
New Mexico Oil Conservation Division Number 1RP-2012  
Terracon Project Number A4087125  
August 5, 2008

## DISTRIBUTION

- Copy 1: Mr. Larry Johnson  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division, District 1  
1625 French Drive  
Hobbs, New Mexico 88240
- Copy 2: Mr. Jason Henry  
Plains Pipeline, L.P.  
2530 State Highway 214  
Denver City, Texas 79323  
[jhenry@paalp.com](mailto:jhenry@paalp.com)
- Copy 3: Mr. Jeff Dann  
Plains Pipeline, L.P.  
333 Clay Street, Suite 1600  
Houston, Texas 77002  
[ipdann@paalp.com](mailto:ipdann@paalp.com)
- Copy 4: Mr. Charlie Bettis  
P. O. Box 969  
Eunice, New Mexico 88231  
575-390-8111
- Copy 5: Ms. Catharine London  
Terracon Consultants  
24 Smith Road, Suite 261  
Midland, Texas 79705  
[chlondon@terracon.com](mailto:chlondon@terracon.com)

**APPENDIX A**

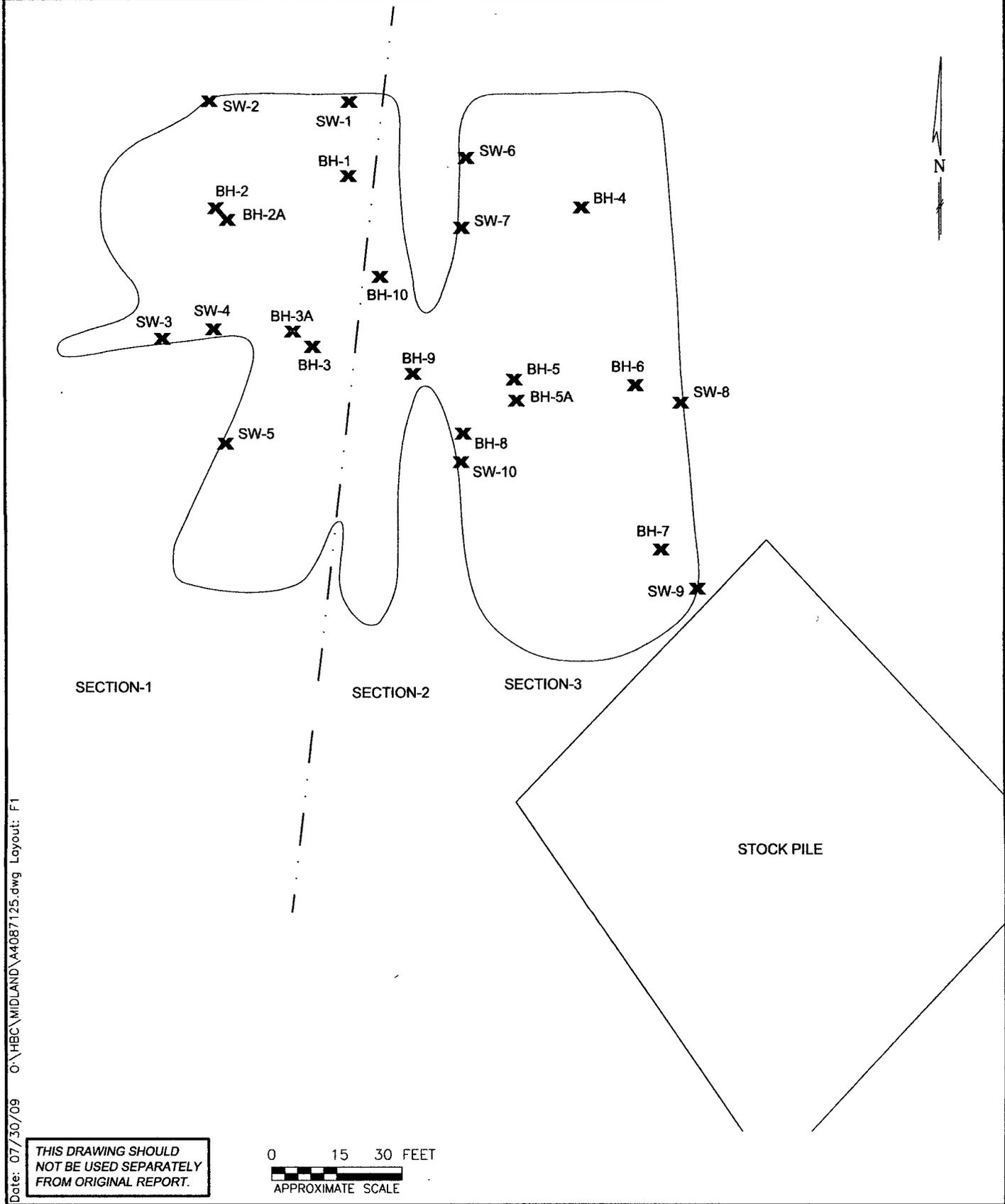
**Figure 1 – Topographic Map**  
**Figure 2 – Site Plan and Sample Location Map**



**USGS TOPOGRAPHIC QUADRANGLE MAP**  
 Eunice, New Mexico  
 Dated: 1979  
 SCALE: 1" = 1,600'  
 PROJECT NO. A4087125

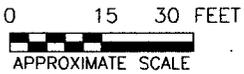


**Hugh Gathering Eubanks Discharge 4"**  
 Unit Letter H, Section 22, T21S-R37E  
 Plains SRS Number 1RP-2012  
 Lea County, New Mexico  
**FIGURE 1: TOPOGRAPHIC MAP**



Date: 07/30/09 O:\HBC\MIDLAND\A4087125.dwg Layout: F1

**THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.**



Project Mgr:	~	Project No.	A4087125
Drawn By:	JJD	Scale	AS SHOWN
Checked By:	~	Date:	01/30/09
Approved By:	~		

**Terracon**  
Consulting Engineers and Scientists

8901 CARPENTER FREEWAY DALLAS, TEXAS 75217  
PH. (214) 630-1010 FAX. (214) 630-7070

**SITE PLAN & SAMPLE LOCATION MAP**

PLAINS MARKETING, L.P.  
HUGH GATHERING - EUBANKS DISCHARGE 4"  
PLAINS SRS No. 2009-311 - NEW MEXICO OCD No. 1RP-2012  
EUNICE, LEA COUNTY, NEW MEXICO

FIG. No.	2
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**APPENDIX B**

**Tables**

Table 1

## CONCENTRATIONS OF TPH &amp; BTEX IN SOIL

Plains Pipeline, L.P.  
 Hugh Gathering Eubanks Discharge 4"  
 SE 1/4 of NE 1/4 Section 22, Township 21S, Range 37E  
 2.5 Miles North of Eunice, Lea County, New Mexico  
 New Mexico Oil Conservation Division Number 1RP-2012  
 Plains All American Pipeline Leak Number 2008-311  
 Terracon Project Number A4087125

All concentrations are in mg/kg

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH (FEET)	EPA 8015 Modified				EPA Method 8021B					
			TPH C <sub>8</sub> -C <sub>12</sub>	TPH >C <sub>12</sub> -C <sub>28</sub>	TPH C <sub>28</sub> -C <sub>35</sub>	TPH Total	BENZENE	TOLUENE	ETHYL-BENZENE	M,P-XYLENES	O-XYLENES	BTEX
11/26/08	T-1 (13')	13	28.4	140	<16.6	<b>168.4</b>	<0.0055	0.0325	0.0819	0.2007	0.1458	0.4609
11/26/08	T-2 (8')	8	5,580	7,850	980	<b>14,410</b>	NA	NA	NA	NA	NA	NA
11/26/08	T-2 (11')	11	21.5	52.6	<18.7	74.1	0.0261	0.3677	0.4416	0.9571	0.4676	2.2601
12/08/08	SEC.1 BH-1	14	<17.6	<17.6	<17.6	<17.6	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0012
12/08/08	SEC.1 BH-2	14	222	934	122	<b>1,278</b>	<0.055	0.2634	0.8629	2.268	1.223	4.6173
12/22/08	Sec. 1 BH-2A	16	<16.4	<16.4	<16.4	<16.4	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0011
12/08/08	SEC.1 BH-3	12	514	1,420	211	<b>2,145</b>	<0.0532	1.766	5.109	11.17	4.829	22.874
12/22/08	Sec. 1 BH-3A	14	<16.6	<16.6	<16.6	<16.6	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0011
12/08/08	SEC 1 SW-1	7	<15.2	19.2	<15.2	19.2	<0.001	0.0448	0.0794	0.152	0.0527	0.3289
12/08/08	SEC.1 SW-2	5	<15.2	<15.2	<15.2	<15.2	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001
12/10/08	SEC.1 SW-3	6.5	<15.6	<15.6	<15.6	<15.6	<0.001	<0.0021	0.0022	0.0027	0.0019	0.0068
12/10/08	SEC.1 SW-4	8	<15.5	<15.5	<15.5	<15.5	<0.001	<0.0021	<0.001	<0.0021	<0.001	<0.001
12/10/08	SEC.1 SW-5	6.5	<15.5	<15.5	<15.5	<15.5	<0.001	<0.0021	<0.001	<0.0021	<0.001	<0.001
12/10/08	SEC.3 BH-4	12	<16.2	<16.2	<16.2	<16.2	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0011
12/10/08	SEC.3 BH-5	12	1,150	1,950	260	<b>3,360</b>	0.2538	15.04	18.04	33.48	13.11	<b>79.9238</b>
12/22/08	Sec. 3 BH-5A	15	<16.4	<16.4	<16.4	<16.4	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0011
12/10/08	SEC.3 BH-6	12	<17.7	<17.7	<17.7	<17.7	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0012
12/10/08	SEC.3 BH-7	16	<15.7	44.8	<15.7	44.8	<0.001	0.0033	0.0015	0.0024	0.0012	0.0084
12/10/08	SEC.3 BH-8	15	<17.6	<17.6	<17.6	<17.6	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0012
12/10/08	SEC 3 SW-6	4	<15.9	<15.9	<15.9	<15.9	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0011
12/10/08	SEC 3 SW-7	9	<15.7	<15.7	<15.7	<15.7	<0.001	<0.0021	<0.001	<0.0021	<0.001	<0.001
12/10/08	SEC.3 SW-8	8	<15.4	<15.4	<15.4	<15.4	<0.001	0.0022	0.0016	0.0032	0.0013	0.0083
12/10/08	SEC.3 SW-9	7	<15.9	<15.9	<15.9	<15.9	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0011
12/10/08	SEC.3 SW-10	9	<15.5	<15.5	<15.5	<15.5	<0.001	0.0024	0.0031	0.006	0.003	0.0145
12/11/08	SEC 2 BH-9	14	<16.4	<16.4	<16.4	<16.4	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0011
12/11/08	SEC.2 BH-10	15	<17	32.4	<17	32.4	<0.0011	<0.0023	<0.0011	<0.0023	0.0011	0.0011
New Mexico Oil Conservation Division Remediation Action Levels			N/L	N/L	N/L	100	10	N/L	N/L	N/L	N/L	50

Concentrations in **BOLD** are above regulatory limits

N/A - Sample not analyzed for a particular constituent

N/L - Remediation Action Levels not listed for a particular constituent

**Table 2**

**WASTE CHARACTERIZATION SOIL SAMPLE**

**Plains Pipeline, L.P.  
Hugh Gathering Eubanks Discharge 4"  
Unit Letter H, Section 22, Township 21S, Range 37E  
2.5 Miles North of Eunice, Lea County, New Mexico  
New Mexico Oil Conservation Division Number 1RP-2012  
Plains All American Pipeline Leak Number 2008-311  
Terracon Project Number A4087125**

*Concentrations are noted in the table*

Sample Date	Sample Identification	Method SW-846 1010	Method EPA 9045C	Method EPA 9010	Method SW 9030B
		Ignitability (°F)	pH (pH Units)	Reactive Cyanide (mg/kg)	Reactive Sulfide (mg/kg)
12/22/08	Stock Pile 1A	>150	7.65	<50	<50

Table 3

LAND FARM CHARACTERIZATION OF SOIL

Plains Pipeline, L.P.  
 Hugh Gathering Eubanks Discharge 4"  
 SE 1/4 of NE 1/4 Section 22, Township 21S, Range 37E  
 2.5 Miles North of Eunice, Lea County, New Mexico  
 New Mexico Oil Conservation Division Number 1RP-2012  
 Plains All American Pipeline Leak Number 2008-311  
 Terracon Project Number A4087125

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH (FEET)	None	EPA Method 300 (mg/kg)	EPA Method 8270C (mg/kg)	EPA Method 8260B (mg/kg)	SW-846 Methods 6010B and 7471A (mg/kg)								SW-9095 (Pass/Fail)
			Percent Moisture	Chloride	TCLP SVOCs	TCLP VOAs	Mercury	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Paint Filter
12/02/08	Stock Pile 1	Composite	4.36	<5.23	All ND	ALL ND	<0.0082	1.69	29.2	<0.225	6.49	3.79	<0.45	<0.18	Pass

All ND - None of the constituents analyzed exceeded laboratory reporting limits

**APPENDIX C**

**Laboratory Data Sheets**

# Analytical Report 318990

for

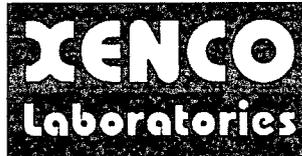
## PLAINS ALL AMERICAN EH&S

**Project Manager: Daniel Bryant**

**Hugh Gathering, Eubanks Discharge 4"**

**SRS # 2008-311**

**08-DEC-08**



**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:

Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

Norcross(Atlanta), GA E87429

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

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



08-DEC-08

Project Manager: **Daniel Bryant**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **318990**  
**Hugh Gathering, Eubanks Discharge 4"**  
Project Address: New Mexico

**Daniel Bryant:**

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 318990. 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. 318990 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

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**Sample Cross Reference 318990**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
High Gathering, Eubanks Discharge 4"

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
T-1 (13')	S	Nov-26-08 13:10	13 - 13 ft	318990-001
T-2 (11')	S	Nov-26-08 12:20	11 - 11 ft	318990-002
T-2 (8')	S	Nov-26-08 12:25	8 - 8 ft	318990-003



# Certificate of Analysis Summary 318990

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Hugh Gathering, Eubanks Discharge 4"



Project Id: SRS # 2008-311

Contact: Daniel Bryant

Project Location: New Mexico

Date Received in Lab: Wed Nov-26-08 04:35 pm

Report Date: 08-DEC-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	318990-001	318990-002	318990-003			
	<i>Field Id:</i>	T-1 (13')	T-2 (11')	T-2 (8')			
	<i>Depth:</i>	13-13 ft	11-11 ft	8-8 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Nov-26-08 13:10	Nov-26-08 12:20	Nov-26-08 12:25			
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Nov-28-08 08:20	Nov-28-08 08:20				
	<i>Analyzed:</i>	Nov-28-08 15:49	Nov-28-08 16:11				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Benzene		ND 0.0055	0.0261 0.0062				
Toluene		0.0325 0.0110	0.3677 0.0125				
Ethylbenzene		0.0819 0.0055	0.4416 0.0062				
m,p-Xylenes		0.2007 0.0110	0.9571 0.0125				
o-Xylene		0.1458 0.0055	0.4676 0.0062				
Total Xylenes		0.3465 0.0110	1.4247 0.0125				
Total BTEX		0.4609 0.0055	2.2601 0.0062				
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-02-08 17:00	Dec-02-08 17:00	Dec-02-08 17:00			
	<i>Units/RL:</i>	% RL	% RL	% RL			
Percent Moisture		9.43 1.00	19.78 1.00	7.76 1.00			
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-02-08 07:00	Dec-02-08 07:00	Dec-02-08 07:00			
	<i>Analyzed:</i>	Dec-03-08 06:17	Dec-03-08 06:41	Dec-03-08 07:05			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		28.4 16.6	21.5 18.7	5580 163			
C12-C28 Diesel Range Hydrocarbons		140 16.6	52.6 18.7	7850 163			
C28-C35 Oil Range Hydrocarbons		ND 16.6	ND 18.7	980 163			
Total TPH		168.4 16.6	74.1 18.7	14410 163			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron  
Odessa Laboratory Director



# 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.

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5332 Blackberry Drive, San Antonio TX 78238	(214) 902 0300	(214) 351-9139
2505 North Falkenburg Rd, Tampa, FL 33619	(210) 509-3334	(210) 509-3335
5757 NW 158th St, Miami Lakes, FL 33014	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(305) 823-8500	(305) 823-8555
842 Cantwell Lane, Corpus Christi, TX 78408	(432) 563-1800	(432) 563-1713
	(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering, Eubanks Discharge 4''

Work Orders : 318990,

Project ID: SRS # 2008-311

Lab Batch #: 741812

Sample: 318486-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.3486	0.0300	1162	80-120	**
4-Bromofluorobenzene	0.0668	0.0300	223	80-120	**

Lab Batch #: 741812

Sample: 318486-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 741812

Sample: 318990-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0516	0.0300	172	80-120	**

Lab Batch #: 741812

Sample: 318990-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0373	0.0300	124	80-120	**
4-Bromofluorobenzene	0.0500	0.0300	167	80-120	**

Lab Batch #: 741812

Sample: 520201-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	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	0.0254	0.0300	85	80-120	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering, Eubanks Discharge 4"

Work Orders : 318990,

Project ID: SRS # 2008-311

Lab Batch #: 741812

Sample: 520201-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0216	0.0300	72	80-120	**

Lab Batch #: 741812

Sample: 520201-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0246	0.0300	82	80-120	

Lab Batch #: 742207

Sample: 318913-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	61.2	50.0	122	70-135	

Lab Batch #: 742207

Sample: 318913-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	54.8	50.0	110	70-135	

Lab Batch #: 742207

Sample: 318990-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	100	99	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering, Eubanks Discharge 4"

Work Orders : 318990,

Project ID: SRS # 2008-311

Lab Batch #: 742207

Sample: 318990-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	100	94	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 742207

Sample: 318990-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	132	100	132	70-135	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 742207

Sample: 520421-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	54.3	50.0	109	70-135	

Lab Batch #: 742207

Sample: 520421-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	100	95	70-135	
o-Terphenyl	48.7	50.0	97	70-135	

Lab Batch #: 742207

Sample: 520421-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.2	50.0	108	70-135	

\*\* 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: Hugh Gathering, Eubanks Discharge 4"**

**Work Order #: 318990**

**Project ID: SRS # 2008-311**

**Analyst: ASA**

**Date Prepared: 11/28/2008**

**Date Analyzed: 11/28/2008**

**Lab Batch ID: 741812**

**Sample: 520201-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.0958	96	0.1	0.0970	97	1	70-130	35	
Toluene	ND	0.1000	0.0881	88	0.1	0.0881	88	0	70-130	35	
Ethylbenzene	ND	0.1000	0.0855	86	0.1	0.0842	84	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.1718	86	0.2	0.1680	84	2	70-135	35	
o-Xylene	ND	0.1000	0.0836	84	0.1	0.0818	82	2	71-133	35	

**Analyst: BHW**

**Date Prepared: 12/02/2008**

**Date Analyzed: 12/03/2008**

**Lab Batch ID: 742207**

**Sample: 520421-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>TPH By SW8015 Mod</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	879	88	1000	900	90	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	941	94	1000	960	96	2	70-135	35	

Relative Percent Difference RPD = 200\*(C-F)/(C+F)

Blank Spike Recovery [D] = 100\*(C)/[B]

Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



Project Name: Hugh Gathering, Eubanks Discharge 4"

Work Order #: 318990

Project ID: SRS # 2008-311

Lab Batch ID: 741812

QC- Sample ID: 318486-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 11/28/2008

Date Prepared: 11/28/2008

Analyst: ASA

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.1270	0.2163	170	0.1270	0.1815	143	17	70-130	35	X
Toluene	ND	0.1270	0.4314	340	0.1270	0.3048	240	34	70-130	35	X
Ethylbenzene	ND	0.1270	0.2357	186	0.1270	0.1344	106	55	71-129	35	XF
m,p-Xylenes	ND	0.2540	0.4950	195	0.2540	0.2554	101	64	70-135	35	XF
o-Xylene	ND	0.1270	0.3250	256	0.1270	0.1267	100	88	71-133	35	XF

Lab Batch ID: 742207

QC- Sample ID: 318913-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/03/2008

Date Prepared: 12/02/2008

Analyst: BHW

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	1000	890	89	1000	906	91	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	53.2	1000	945	89	1000	982	93	4	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot |(C-F)/(C+F)|$

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

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



# Sample Duplicate Recovery



**Project Name: Hugh Gathering, Eubanks Discharge 4"**

**Work Order #: 318990**

**Lab Batch #: 742132**

**Project ID: SRS # 2008-311**

**Date Analyzed: 12/02/2008**

**Date Prepared: 12/02/2008**

**Analyst: BEV**

**QC- Sample ID: 318990-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

## SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.43	7.61	21	20	F

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



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

Client Terracoin Plastics  
Date/ Time 11/26/08 16:35  
Lab ID # 318990  
Initials CEL

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	Yes	No	5 °C
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present
#5	Chain of Custody present?	Yes	No	
#6	Sample instructions complete of Chain of Custody?	Yes	No	
#7	Chain of Custody signed when relinquished/ received?	Yes	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont / Lid
#9	Container label(s) legible and intact?	Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	Yes	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	Yes	No	
#15	Preservations documented on Chain of Custody?	Yes	No	
#16	Containers documented on Chain of Custody?	Yes	No	
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18	All samples received within sufficient hold time?	Yes	No	See Below
#19	Subcontract of sample(s)?	Yes	No	Not Applicable
#20	VOC samples have zero headspace?	Yes	No	Not Applicable

**Variance Documentation**

Contact \_\_\_\_\_ Contacted by \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken:

\_\_\_\_\_  
\_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# **Analytical Report 319261**

**for**

## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Hugh Gathering Eubanks Discharge 4"**

**2008-311**

**12-DEC-08**



**12600 West I-20 East Odessa, Texas 79765**

**Texas certification numbers:**

**Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX**

**Florida certification numbers:**

**Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675**

**Norcross(Atlanta), GA E87429**

**South Carolina certification numbers:**

**Norcross(Atlanta), GA 98015**

**North Carolina certification numbers:**

**Norcross(Atlanta), GA 483**

**Houston - Dallas - San Antonio - Tampa - Miami - Latin America**

**Midland - Corpus Christi - Atlanta**



12-DEC-08

Project Manager: **Jason Henry**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **319261**  
**Hugh Gathering Eubanks Discharge 4"**  
Project Address:

**Jason Henry:**

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 319261. 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. 319261 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

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**Sample Cross Reference 319261**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
**Hugh Gathering Eubanks Discharge 4"**

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
Stock Pile 1	S	Dec-02-08 12:35		319261-001



# Certificate of Analysis Summary 319261

## PLAINS ALL AMERICAN EH&S, Midland, TX



**Project Name: Hugh Gathering Eubanks Discharge 4"**

**Project Id:** 2008-311  
**Contact:** Jason Henry  
**Project Location:**

**Date Received in Lab:** Dec-02-08 04:35 pm  
**Report Date:** 12-DEC-08  
**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	319261-001				
	<i>Field Id:</i>	Stock Pile 1				
	<i>Depth:</i>					
	<i>Matrix:</i>	SOIL				
	<i>Sampled:</i>	Dec-02-08 12:35				
<b>TCLP SVOCs by EPA 8270C</b>	<i>Extracted:</i>	Dec-09-08 08:42				
	<i>Analyzed:</i>	Dec-09-08 13:18				
	<i>Units/RL:</i>	mg/L	RL			
	1,4-Dichlorobenzene	ND	0.020			
2,4-Dinitrotoluene	ND	0.020				
Hexachlorobenzene	ND	0.020				
Hexachlorobutadiene	ND	0.020				
Hexachloroethane	ND	0.020				
2-methylphenol	ND	0.020				
3&4-Methylphenol	ND	0.020				
Nitrobenzene	ND	0.020				
Pentachlorophenol	ND	0.020				
Pyridine	ND	0.020				
2,4,5-Trichlorophenol	ND	0.020				
2,4,6-Trichlorophenol	ND	0.020				
<b>TCLP VOAs by EPA 8260B</b>	<i>Extracted:</i>	Dec-09-08 15:10				
	<i>Analyzed:</i>	Dec-09-08 23:24				
	<i>Units/RL:</i>	mg/L	RL			
	Benzene	ND	0.025			
2-Butanone	ND	0.250				
Carbon Tetrachloride	ND	0.025				
Chlorobenzene	ND	0.025				
Chloroform	ND	0.025				
1,4-Dichlorobenzene	ND	0.025				
1,2-Dichloroethane	ND	0.025				
1,1-Dichloroethene	ND	0.025				
Tetrachloroethylene	ND	0.025				
Trichloroethene	ND	0.025				
Vinyl Chloride	ND	0.010				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron

Odessa Laboratory Director



# Certificate of Analysis Summary 319261

## PLAINS ALL AMERICAN EH&S, Midland, TX



**Project Name: Hugh Gathering Eubanks Discharge 4"**

**Project Id:** 2008-311  
**Contact:** Jason Henry

**Date Received in Lab:** Dec-02-08 04:35 pm  
**Report Date:** 12-DEC-08

**Project Location:**

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	319261-001			
	<b>Field Id:</b>	Stock Pile 1			
	<b>Depth:</b>				
	<b>Matrix:</b>	SOIL			
	<b>Sampled:</b>	Dec-02-08 12:35			
<b>Anions by EPA 300</b>	<b>Extracted:</b>				
	<b>Analyzed:</b>	Dec-04-08 10:00			
	<b>Units/RL:</b>	mg/kg RL			
Chloride		ND	5.23		
<b>Mercury by SW 7471A</b>	<b>Extracted:</b>	Dec-05-08 06:50			
	<b>Analyzed:</b>	Dec-05-08 10:16			
	<b>Units/RL:</b>	mg/kg RL			
Mercury		ND	0.0082		
<b>Metals per ICP by SW846 6010B</b>	<b>Extracted:</b>	Dec-04-08 10:30			
	<b>Analyzed:</b>	Dec-05-08 10:45			
	<b>Units/RL:</b>	mg/kg RL			
Arsenic		1.69	0.450		
Barium		29.2	0.450		
Cadmium		ND	0.225		
Chromium		6.49	0.225		
Lead		3.79	0.541		
Selenium		ND	0.450		
Silver		ND	0.180		
<b>Paint Filter Liquids Test by SW-9095</b>	<b>Extracted:</b>				
	<b>Analyzed:</b>	Dec-03-08 13:00			
	<b>Units/RL:</b>				
Paint Filter		PASS			
<b>Percent Moisture</b>	<b>Extracted:</b>				
	<b>Analyzed:</b>	Dec-03-08 17:00			
	<b>Units/RL:</b>	% RL			
Percent Moisture		4.36	1.00		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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**Brent Barron**  
 Odessa Laboratory Director



# 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.

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 5332 Blackberry Drive, San Antonio TX 78238  
 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubanks Discharge 4"

Work Orders : 319261,

Project ID: 2008-311

Lab Batch #: 742874

Sample: 319261-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/L

### SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.051	0.100	51	43-116	
2-Fluorophenol	0.012	0.100	12	21-100	**
Nitrobenzene-d5	0.061	0.100	61	35-114	
Phenol-d6	0.043	0.100	43	10-94	
Terphenyl-D14	0.060	0.100	60	33-141	
2,4,6-Tribromophenol	0.054	0.100	54	10-123	

Lab Batch #: 742874

Sample: 520739-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.086	0.100	86	43-116	
2-Fluorophenol	0.062	0.100	62	21-100	
Nitrobenzene-d5	0.088	0.100	88	35-114	
Phenol-d6	0.048	0.100	48	10-94	
Terphenyl-D14	0.095	0.100	95	33-141	
2,4,6-Tribromophenol	0.094	0.100	94	10-123	

Lab Batch #: 742874

Sample: 520739-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.100	0.100	100	43-116	
2-Fluorophenol	0.066	0.100	66	21-100	
Nitrobenzene-d5	0.096	0.100	96	35-114	
Phenol-d6	0.049	0.100	49	10-94	
Terphenyl-D14	0.104	0.100	104	33-141	
2,4,6-Tribromophenol	0.110	0.100	110	10-123	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubanks Discharge 4"

Work Orders : 319261,

Project ID: 2008-311

Lab Batch #: 742874

Sample: 520739-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.085	0.100	85	43-116	
2-Fluorophenol	0.062	0.100	62	21-100	
Nitrobenzene-d5	0.088	0.100	88	35-114	
Phenol-d6	0.046	0.100	46	10-94	
Terphenyl-D14	0.093	0.100	93	33-141	
2,4,6-Tribromophenol	0.097	0.100	97	10-123	

Lab Batch #: 743339

Sample: 319261-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/L

### SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0505	0.0500	101	86-115	
Dibromofluoromethane	0.0495	0.0500	99	86-118	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0519	0.0500	104	88-110	

Lab Batch #: 743339

Sample: 521027-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0501	0.0500	100	86-115	
Dibromofluoromethane	0.0460	0.0500	92	86-118	
1,2-Dichloroethane-D4	0.0462	0.0500	92	80-120	
Toluene-D8	0.0504	0.0500	101	88-110	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubanks Discharge 4"

Work Orders : 319261,

Project ID: 2008-311

Lab Batch #: 743339

Sample: 521027-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

## SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0507	0.0500	101	86-115	
Dibromofluoromethane	0.0498	0.0500	100	86-118	
1,2-Dichloroethane-D4	0.0484	0.0500	97	80-120	
Toluene-D8	0.0516	0.0500	103	88-110	

\*\* 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.



# Blank Spike Recovery



**Project Name: Hugh Gathering Eubanks Discharge 4"**

Work Order #: 319261

Project ID:

2008-311

Lab Batch #: 742486

Sample: 742486-1-BKS

Matrix: Solid

Date Analyzed: 12/04/2008

Date Prepared: 12/04/2008

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.1	101	80-120	

Lab Batch #: 743339

Sample: 521027-1-BKS

Matrix: Water

Date Analyzed: 12/09/2008

Date Prepared: 12/09/2008

Analyst: JEA

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

TCLP VOAs by EPA 8260B	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.050	0.050	100	66-142	
2-Butanone	ND	0.500	0.429	86	60-140	
Carbon Tetrachloride	ND	0.050	0.051	102	62-125	
Chlorobenzene	ND	0.050	0.051	102	60-133	
Chloroform	ND	0.050	0.047	94	74-125	
1,4-Dichlorobenzene	ND	0.050	0.051	102	75-125	
1,2-Dichloroethane	ND	0.050	0.045	90	68-127	
1,1-Dichloroethene	ND	0.050	0.049	98	59-172	
Tetrachloroethylene	ND	0.050	0.053	106	71-125	
Trichloroethene	ND	0.050	0.051	102	62-137	
Vinyl Chloride	ND	0.050	0.049	98	75-125	

Blank Spike Recovery [D] = 100\*[C]/[B]

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



# BS / BSD Recoveries



**Project Name: Hugh Gathering Eubanks Discharge 4"**

Work Order #: 319261

Project ID: 2008-311

Analyst: DAT

Date Prepared: 12/05/2008

Date Analyzed: 12/05/2008

Lab Batch ID: 742416

Sample: 520562-1-BKS

Batch #: 1

Matrix: Solid

Units: ug/kg

## BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Mercury by SW 7471A	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
Mercury	ND	166.7	164.7	99	166.7	166.5	100	1	75-125	25	

Analyst: DAT

Date Prepared: 12/04/2008

Date Analyzed: 12/05/2008

Lab Batch ID: 742575

Sample: 520506-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by SW846 6010B	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
Arsenic	ND	100	103	103	100	101	101	2	75-125	30	
Barium	ND	100	100	100	100	101	101	1	75-125	30	
Cadmium	ND	100	98.4	98	100	99.6	100	1	75-125	30	
Chromium	ND	100	113	113	100	110	110	3	75-125	30	
Lead	ND	100	101	101	100	99.6	100	1	75-125	30	
Selenium	ND	100	101	101	100	100	100	1	75-125	30	
Silver	ND	100	101	101	100	100	100	1	75-125	30	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



# BS / BSD Recoveries



Project Name: Hugh Gathering Eubanks Discharge 4"

Work Order #: 319261

Project ID: 2008-311

Analyst: MAA

Date Prepared: 12/09/2008

Date Analyzed: 12/09/2008

Lab Batch ID: 742874

Sample: 520739-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

## BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C	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
Analytes											
1,4-Dichlorobenzene	ND	0.100	0.077	77	0.1	0.074	74	4	19-121	28	
2,4-Dinitrotoluene	ND	0.100	0.091	91	0.1	0.088	88	3	22-135	38	
Hexachlorobenzene	ND	0.100	0.083	83	0.1	0.084	84	1	46-133	25	
Hexachlorobutadiene	ND	0.100	0.082	82	0.1	0.082	82	0	44-125	25	
Hexachloroethane	ND	0.100	0.075	75	0.1	0.076	76	1	25-153	25	
2-methylphenol	ND	0.100	0.074	74	0.1	0.073	73	1	14-176	25	
3&4-Methylphenol	ND	0.200	0.155	78	0.2	0.148	74	5	14-176	25	
Nitrobenzene	ND	0.100	0.083	83	0.1	0.082	82	1	65-135	25	
Pentachlorophenol	ND	0.100	0.077	77	0.1	0.100	100	26	17-117	50	
Pyridine	ND	0.100	0.053	53	0.1	0.050	50	6	16-86	28	
2,4,5-Trichlorophenol	ND	0.100	0.082	82	0.1	0.081	81	1	65-135	25	
2,4,6-Trichlorophenol	ND	0.100	0.082	82	0.1	0.079	79	4	65-135	25	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/(B)$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/(E)$

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: Hugh Gathering Eubanks Discharge 4"

Work Order #: 319261

Lab Batch #: 742486

Project ID: 2008-311

Date Analyzed: 12/04/2008

Date Prepared: 12/04/2008

Analyst: LATCOR

QC- Sample ID: 319261-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	20.9	22.1	106	80-120	

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

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

All Results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



Project Name: Hugh Gathering Eubanks Discharge 4"

Work Order #: 319261

Project ID: 2008-311

Lab Batch ID: 742416

QC- Sample ID: 319303-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/05/2008

Date Prepared: 12/05/2008

Analyst: DAT

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Mercury by SW 7471A  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
	Mercury	0.0087	0.1287	0.1336	97	0.1299	0.1325	95	2	75-125	25

Lab Batch ID: 742575

QC- Sample ID: 319303-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/05/2008

Date Prepared: 12/04/2008

Analyst: DAT

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by SW846 6010B  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
	Arsenic	4.74	93.5	89.7	91	95.2	92.1	92	1	75-125	30
Barium	43.8	93.5	131	93	95.2	132	93	0	75-125	30	
Cadmium	ND	93.5	78.5	84	95.2	79.3	83	1	75-125	30	
Chromium	46.5	93.5	142	102	95.2	137	95	7	75-125	30	
Lead	10.6	93.5	89.3	84	95.2	92.6	86	2	75-125	30	
Selenium	0.487	93.5	84.7	90	95.2	86.5	90	0	75-125	30	
Silver	ND	93.5	80.8	86	95.2	89.2	94	9	75-125	30	

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

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

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



# Sample Duplicate Recovery



**Project Name: Hugh Gathering Eubanks Discharge 4"**

**Work Order #: 319261**

**Lab Batch #: 742486**

**Project ID: 2008-311**

**Date Analyzed: 12/04/2008**

**Date Prepared: 12/04/2008**

**Analyst: LATCOR**

**QC- Sample ID: 319261-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by EPA 300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	ND	ND	NC	20	

**Lab Batch #: 742667**

**Date Analyzed: 12/03/2008**

**Date Prepared: 12/03/2008**

**Analyst: BEV**

**QC- Sample ID: 319261-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units:**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Paint Filter Liquids Test by SW-9095  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Paint Filter	ND	ND	NC		

**Lab Batch #: 742247**

**Date Analyzed: 12/03/2008**

**Date Prepared: 12/03/2008**

**Analyst: BEV**

**QC- Sample ID: 319208-003 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	5.41	5.11	6	20	

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



A Xenco Company

**Plains All American**  
 ATTN: Jason Henry  
 1301 S. County Road 1150  
 Midland, TX 79706  
 FAX: 432-687-4914

Sample Type: Soil  
 Sample Condition: Intact/ 5.0 degrees C  
 Lab ID#: 319261-001  
 Project Name: Hugh Gathering Eubanks Discharge 4"  
 Project # : 2008-311  
 Project  
 Location: N/A

Sample Date: 12/02/08  
 Sample Time: 12:35  
 Receiving Date: 12/02/08  
 Analysis Date: 12/09/08  
 Field Code: Stock Pile 1

Analysis Description	Analysis Results pCi/gm	Analysis Error +/- 2s	Analysis Results Bq/gm	Analysis Error +/- 2s	Analysis Test Method	Analysis Technician
Ra-226	8.60	2.64	0.32	0.10	EPA 901.1M	JM
Ra-228	<0.11	N/A	<0.01	N/A	EPA 901.1M	JM
Pb-210	<0.68	N/A	<0.02	N/A	EPA 901.1M	JM
Th-228	<2.90	N/A	<0.11	N/A	EPA 901.1M	JM
Total Activity	14.27	N/A	0.52	N/A	EPA 901.1M	JM

Notes:  
 This sample was subcontracted to Xenco Laboratories' Corpus Christi.

  
 Quality Assurance Review

Environmental Lab of Texas assumes no liability for the use or interpretation of any analytical results other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

## Notes:

### Comments

- 1 Soil and Sludge analysis results are reported on a wet basis or as received basis unless otherwise indicated.
- 2 The data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.
- 3 Modified analysis procedures are procedures that are modified to meet certain specifications. An example would be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4 Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B.
- 5 Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring decay chains and other prominent radioactive isotopes. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of isotopes that emit solely alpha or beta radiation.
- 6 Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only)
- 7 U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only)
- 8 All Gamma Spectroscopy was performed using high purity germanium detectors (HPGE).

### Method References:

- 1 EPA 600/4-80-032, Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, August 1980.
- 2 Standard Methods for the Examination of Water and Waste Water, 18<sup>th</sup>, 1992.
- 3 EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995)
- 4 EPA 600/4/79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5 HIASL 300

### Definitions

1	BDL	Analyte not detected because the value was below the detection limit.
2	ND	Not detected above the detection limit.
3	Detection Limit	The minimum amount of the analyte that can be detected utilizing the specific analysis.
4	B	Method Blank
5	D	Method Duplicate
6	MS	Matrix Spike
7	S	Spike
8	RS	Reference Spike
9	SC	Subcontracted to qualified laboratory
10	NR	Not Referenced
11	N/A	Not applicable
12	MDA	Minimum detectable activity

Environmental Lab of Texas 1, Ltd. assumes no liability for the use or interpretation of any analytical results other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

## Terracon

Consulting Engineers & Scientists

Office Location A4 Terracon  
Midland, TX

Project Manager B. Gule

Sampler's Name  
SEAN CARTER

Proj. No.  
A4C87125

Matrix	Date	Time	C S M P	G P B	Identifying Mark of Sample(s)	Start Depth	End Depth	VOA	A/G 1L	250 ml	P/O
	<u>12.2.08</u>	<u>12.35</u>	<u>X</u>		<u>Stock Pile 1</u>						

Laboratory: XENCO

Address: \_\_\_\_\_

Contact: Emmett Izola

Phone: 432-681-9600

PO/SO #: 2008-311

Sampler's Signature  
Sean Carter

Project Name  
High Gathering Embankment Discharge

No./Type of Containers  
5-4oz Jars

ANALYSIS REQUESTED

Chlorides  
Nitrogen  
ACRAB Total Metals  
TCLP Metals  
Paint Semi-Metals  
Paint Filter Test

Lab use only  
Due Date: \_\_\_\_\_

Temp of coolers when received (°C): 30

Page 1 of 1

Lab Sample ID (Lab Use Only)  
319201-01

Turn around time  Normal  25% Rush  50% Rush  100% Rush

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	NOTES: <u>Bill Plans</u>  <u>will need soil containers.</u>  <u>Terracon Heavy Metals</u>
<u>Sean Carter</u>	<u>12.2.08</u>	<u>16:55</u>				

Matrix Container: WW - Wastewater VOA - 40 ml vial    W - Water A/G - Amber / Or Glass 1 Liter    S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube P/O - Plastic or other    SL - sludge O - Oil

<b>Houston Office</b> 11555 Clay Road, Suite 100 Houston, Texas 77043 (713) 690-8989 Fax (713) 690-8787	<b>Dallas Office</b> 8901 Carpenter Freeway, Suite 100 Dallas, Texas 75247 (214) 630-1010 Fax (214) 630-7070	<b>Fort Worth Office</b> 2601 Grevel Drive Fort Worth, Texas 76118 (817) 268-8600 Fax (817) 268-8602	<b>Austin Office</b> 2307 Industrial Oaks Blvd. # 160 Austin, Texas 78735 (512) 442-1122 Fax (512) 442-1181
<b>Midland Office</b> 24 Smith Rd., # 261 Midland, Texas 79705 (432) 684-9600 Fax (432) 684-9608			

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

Client: Terricon / Phins  
 Date/ Time: 12-7-03 16:35  
 Lab ID #: 311201  
 Initials: AL

**Sample Receipt Checklist**

				Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	50 °C	
#2 Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#3 Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<del>Not Present</del>	
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Present	
#5 Chain of Custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#13 Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#14 Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Below	
#19 Subcontract of sample(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<del>Not Applicable</del>	
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable	

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# **Analytical Report 320213**

**for**

## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Hugh Gathering Eubank Discharge 4"**

**2008-311**

**17-DEC-08**



**12600 West I-20 East Odessa, Texas 79765**

**Texas certification numbers:**

**Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX**

**Florida certification numbers:**

**Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675**

**Norcross(Atlanta), GA E87429**

**South Carolina certification numbers:**

**Norcross(Atlanta), GA 98015**

**North Carolina certification numbers:**

**Norcross(Atlanta), GA 483**

**Houston - Dallas - San Antonio - Tampa - Miami - Latin America**

**Midland - Corpus Christi - Atlanta**



17-DEC-08

Project Manager: **Jason Henry**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **320213**  
**Hugh Gathering Eubank Discharge 4"**  
Project Address:

**Jason Henry:**

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 320213. 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. 320213 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

*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 - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



**Sample Cross Reference 320213**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
**Hugh Gathering Eubank Discharge 4"**

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
SEC.1 BH-1	S	Dec-08-08 13:35		320213-001
SEC.1 BH-2	S	Dec-08-08 13:40		320213-002
SEC.1 BH-3	S	Dec-08-08 13:45		320213-003
SEC.1 SW-1	S	Dec-08-08 15:50		320213-004
SEC.1 SW-2	S	Dec-08-08 14:00		320213-005
SEC.1 SW-3	S	Dec-10-08 10:00		320213-006
SEC.1 SW-4	S	Dec-10-08 10:05		320213-007
SEC.1 SW-5	S	Dec-10-08 10:10		320213-008
SEC.3 BH-4	S	Dec-10-08 13:05		320213-009
SEC.3 BH-5	S	Dec-10-08 13:10		320213-010
SEC.3 BH-6	S	Dec-10-08 13:20		320213-011
SEC.3 BH-7	S	Dec-10-08 13:30		320213-012
SEC.3 BH-8	S	Dec-10-08 13:35		320213-013
SEC.3 SW-6	S	Dec-10-08 13:40		320213-014
SEC.3 SW-7	S	Dec-10-08 13:45		320213-015
SEC.3 SW-8	S	Dec-10-08 13:55		320213-016
SEC.3 SW-9	S	Dec-10-08 14:00		320213-017
SEC.3 SW-10	S	Dec-10-08 14:10		320213-018
SEC.2 BH-9	S	Dec-11-08 13:10		320213-019
SEC.2 BH-10	S	Dec-11-08 13:15		320213-020



# Certificate of Analysis Summary 320213

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Hugh Gathering Eubank Discharge 4"



Project Id: 2008-311

Contact: Jason Henry

Project Location:

Date Received in Lab: Fri Dec-12-08 09:15 am

Report Date: 17-DEC-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	320213-001	320213-002	320213-003	320213-004	320213-005	320213-006
	<i>Field Id:</i>	SEC.1 BH-1	SEC.1 BH-2	SEC.1 BH-3	SEC.1 SW-1	SEC.1 SW-2	SEC.1 SW-3
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-08-08 13:35	Dec-08-08 13:40	Dec-08-08 13:45	Dec-08-08 15:50	Dec-08-08 14:00	Dec-10-08 10:00
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-12-08 15:00	Dec-12-08 15:45	Dec-12-08 15:45	Dec-12-08 15:00	Dec-12-08 15:00	Dec-12-08 15:00
	<i>Analyzed:</i>	Dec-12-08 18:02	Dec-13-08 06:16	Dec-13-08 07:03	Dec-12-08 18:26	Dec-12-08 18:49	Dec-12-08 19:13
	<i>Units/RL:</i>	mg/kg RL					
Benzene		ND 0.0012	ND 0.0550	ND 0.0532	ND 0.0010	ND 0.0010	ND 0.0010
Toluene		ND 0.0023	0.2634 0.1100	1.766 0.1065	0.0448 0.0020	ND 0.0020	ND 0.0021
Ethylbenzene		ND 0.0012	0.8629 0.0550	5.109 0.0532	0.0794 0.0010	ND 0.0010	0.0022 0.0010
m,p-Xylenes		ND 0.0023	2.268 0.1100	11.17 0.1065	0.1520 0.0020	ND 0.0020	0.0027 0.0021
o-Xylene		ND 0.0012	1.223 0.0550	4.829 0.0532	0.0527 0.0010	ND 0.0010	0.0019 0.0010
Total Xylenes		ND 0.0023	3.491 0.1100	15.999 0.1065	0.2047 0.0020	ND 0.0020	0.0046 0.0021
Total BTEX		ND 0.0012	4.6173 0.0550	22.874 0.0532	0.3289 0.0010	ND 0.0010	0.0068 0.0010
<b>Percent Moisture</b>	<i>Extracted:</i>	Dec-12-08 17:00					
	<i>Analyzed:</i>	Dec-12-08 17:00					
	<i>Units/RL:</i>	% RL					
Percent Moisture		14.72 1.00	9.09 1.00	6.07 1.00	1.35 1.00	1.51 1.00	3.55 1.00
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-15-08 14:30					
	<i>Analyzed:</i>	Dec-16-08 10:31	Dec-16-08 10:57	Dec-16-08 11:23	Dec-16-08 11:49	Dec-16-08 12:14	Dec-16-08 12:39
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 17.6	222 16.5	514 16.0	ND 15.2	ND 15.2	ND 15.6
C12-C28 Diesel Range Hydrocarbons		ND 17.6	934 16.5	1420 16.0	19.2 15.2	ND 15.2	ND 15.6
C28-C35 Oil Range Hydrocarbons		ND 17.6	122 16.5	211 16.0	ND 15.2	ND 15.2	ND 15.6
Total TPH		ND 17.6	1278 16.5	2145 16.0	19.2 15.2	ND 15.2	ND 15.6

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 320213

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Hugh Gathering Eubank Discharge 4"



Project Id: 2008-311

Contact: Jason Henry

Project Location:

Date Received in Lab: Fri Dec-12-08 09:15 am

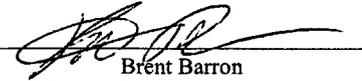
Report Date: 17-DEC-08

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	320213-007	320213-008	320213-009	320213-010	320213-011	320213-012
	Field Id:	SEC.1 SW-4	SEC.1 SW-5	SEC.3 BH-4	SEC.3 BH-5	SEC.3 BH-6	SEC.3 BH-7
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-10-08 10:05	Dec-10-08 10:10	Dec-10-08 13:05	Dec-10-08 13:10	Dec-10-08 13:20	Dec-10-08 13:30
BTEX by EPA 8021B	Extracted:	Dec-12-08 15:00	Dec-12-08 15:00	Dec-12-08 15:00	Dec-12-08 15:45	Dec-12-08 15:00	Dec-12-08 15:00
	Analyzed:	Dec-12-08 19:37	Dec-12-08 20:00	Dec-12-08 20:24	Dec-13-08 07:50	Dec-12-08 20:47	Dec-12-08 21:11
	Units/RL:	mg/kg RL					
Benzene		ND 0.0010	ND 0.0010	ND 0.0011	0.2538 0.0542	ND 0.0012	ND 0.0010
Toluene		ND 0.0021	ND 0.0021	ND 0.0022	15.04 0.1084	ND 0.0024	0.0033 0.0021
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0011	18.04 0.0542	ND 0.0012	0.0015 0.0010
m,p-Xylenes		ND 0.0021	ND 0.0021	ND 0.0022	33.48 0.1084	ND 0.0024	0.0024 0.0021
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0011	13.11 0.0542	ND 0.0012	0.0012 0.0010
Total Xylenes		ND 0.0021	ND 0.0021	ND 0.0022	46.59 0.1084	ND 0.0024	0.0036 0.0021
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0011	79.9238 0.0542	ND 0.0012	0.0084 0.0010
Percent Moisture	Extracted:	Dec-12-08 17:00					
	Analyzed:						
	Units/RL:	% RL					
Percent Moisture		3.34 1.00	3.12 1.00	7.56 1.00	7.79 1.00	15.06 1.00	4.52 1.00
TPH By SW8015 Mod	Extracted:	Dec-15-08 14:30					
	Analyzed:	Dec-16-08 13:03	Dec-16-08 13:27	Dec-16-08 13:50	Dec-16-08 14:14	Dec-16-08 15:02	Dec-16-08 15:25
	Units/RL:	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 15.5	ND 15.5	ND 16.2	1150 16.3	ND 17.7	ND 15.7
C12-C28 Diesel Range Hydrocarbons		ND 15.5	ND 15.5	ND 16.2	1950 16.3	ND 17.7	44.8 15.7
C28-C35 Oil Range Hydrocarbons		ND 15.5	ND 15.5	ND 16.2	260 16.3	ND 17.7	ND 15.7
Total TPH		ND 15.5	ND 15.5	ND 16.2	3360 16.3	ND 17.7	44.8 15.7

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 320213

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Hugh Gathering Eubank Discharge 4"



Project Id: 2008-311

Contact: Jason Henry

Date Received in Lab: Fri Dec-12-08 09:15 am

Report Date: 17-DEC-08

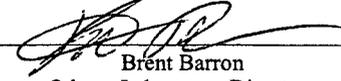
Project Location:

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	320213-013	320213-014	320213-015	320213-016	320213-017	320213-018
	<i>Field Id:</i>	SEC.3 BH-8	SEC.3 SW-6	SEC.3 SW-7	SEC.3 SW-8	SEC.3 SW-9	SEC.3 SW-10
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-10-08 13:35	Dec-10-08 13:40	Dec-10-08 13:45	Dec-10-08 13:55	Dec-10-08 14:00	Dec-10-08 14:10
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-12-08 15:00					
	<i>Analyzed:</i>	Dec-12-08 21:35	Dec-12-08 22:46	Dec-12-08 23:09	Dec-12-08 23:33	Dec-12-08 23:57	Dec-13-08 00:21
	<i>Units/RL:</i>	mg/kg RL					
Benzene		ND 0.0012	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010
Toluene		ND 0.0023	ND 0.0021	ND 0.0021	0.0022 0.0021	ND 0.0021	0.0024 0.0021
Ethylbenzene		ND 0.0012	ND 0.0011	ND 0.0010	0.0016 0.0010	ND 0.0011	0.0031 0.0010
m,p-Xylenes		ND 0.0023	ND 0.0021	ND 0.0021	0.0032 0.0021	ND 0.0021	0.0060 0.0021
o-Xylene		ND 0.0012	ND 0.0011	ND 0.0010	0.0013 0.0010	ND 0.0011	0.0030 0.0010
Total Xylenes		ND 0.0023	ND 0.0021	ND 0.0021	0.0045 0.0021	ND 0.0021	0.009 0.0021
Total BTEX		ND 0.0012	ND 0.0011	ND 0.0010	0.0083 0.0010	ND 0.0011	0.0145 0.0010
<b>Percent Moisture</b>	<i>Extracted:</i>	Dec-12-08 17:00					
	<i>Analyzed:</i>						
	<i>Units/RL:</i>	% RL					
Percent Moisture		14.71 1.00	5.51 1.00	4.47 1.00	2.44 1.00	5.44 1.00	3.51 1.00
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-15-08 14:30					
	<i>Analyzed:</i>	Dec-16-08 15:48	Dec-16-08 16:12	Dec-16-08 16:34	Dec-16-08 16:57	Dec-16-08 17:21	Dec-16-08 17:44
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 17.6	ND 15.9	ND 15.7	ND 15.4	ND 15.9	ND 15.5
C12-C28 Diesel Range Hydrocarbons		ND 17.6	ND 15.9	ND 15.7	ND 15.4	ND 15.9	ND 15.5
C28-C35 Oil Range Hydrocarbons		ND 17.6	ND 15.9	ND 15.7	ND 15.4	ND 15.9	ND 15.5
Total TPH		ND 17.6	ND 15.9	ND 15.7	ND 15.4	ND 15.9	ND 15.5

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 320213

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Hugh Gathering Eubank Discharge 4"



Project Id: 2008-311

Contact: Jason Henry

Date Received in Lab: Fri Dec-12-08 09:15 am

Report Date: 17-DEC-08

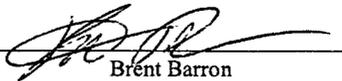
Project Location:

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	320213-019	320213-020				
	<i>Field Id:</i>	SEC.2 BH-9	SEC.2 BH-10				
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL				
	<i>Sampled:</i>	Dec-11-08 13:10	Dec-11-08 13:15				
	<i>Extracted:</i>	Dec-12-08 15:00	Dec-12-08 15:00				
	<i>Analyzed:</i>	Dec-13-08 00:44	Dec-13-08 01:08				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
<b>BTEX by EPA 8021B</b>							
Benzene		ND 0.0011	ND 0.0011				
Toluene		ND 0.0022	ND 0.0023				
Ethylbenzene		ND 0.0011	ND 0.0011				
m,p-Xylenes		ND 0.0022	ND 0.0023				
o-Xylene		ND 0.0011	0.0011 0.0011				
Total Xylenes		ND 0.0022	0.0011 0.0023				
Total BTEX		ND 0.0011	0.0011 0.0011				
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-12-08 17:00	Dec-12-08 17:00				
	<i>Units/RL:</i>	% RL	% RL				
Percent Moisture		8.36 1.00	11.66 1.00				
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-15-08 14:30	Dec-15-08 14:30				
	<i>Analyzed:</i>	Dec-16-08 18:07	Dec-16-08 18:30				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16.4	ND 17.0				
C12-C28 Diesel Range Hydrocarbons		ND 16.4	32.4 17.0				
C28-C35 Oil Range Hydrocarbons		ND 16.4	ND 17.0				
Total TPH		ND 16.4	32.4 17.0				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron  
Odessa Laboratory Director



# 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.

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(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743466

Sample: 320213-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0109	0.0300	36	80-120	*

Lab Batch #: 743466

Sample: 320213-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0369	0.0300	123	80-120	*
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 743466

Sample: 320213-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0356	0.0300	119	80-120	
4-Bromofluorobenzene	0.0114	0.0300	38	80-120	*

Lab Batch #: 743466

Sample: 320213-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 743466

Sample: 320213-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743466

Sample: 320213-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 743466

Sample: 320213-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0094	0.0300	31	80-120	*

Lab Batch #: 743466

Sample: 320213-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0353	0.0300	118	80-120	
4-Bromofluorobenzene	0.0160	0.0300	53	80-120	*

Lab Batch #: 743466

Sample: 320213-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0098	0.0300	33	80-120	*

Lab Batch #: 743466

Sample: 320213-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0103	0.0300	34	80-120	*

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743466

Sample: 320213-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0382	0.0300	127	80-120	*
4-Bromofluorobenzene	0.0235	0.0300	78	80-120	*

Lab Batch #: 743466

Sample: 320213-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0357	0.0300	119	80-120	
4-Bromofluorobenzene	0.0126	0.0300	42	80-120	*

Lab Batch #: 743466

Sample: 320213-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0090	0.0300	30	80-120	*

Lab Batch #: 743466

Sample: 320213-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0116	0.0300	39	80-120	*

Lab Batch #: 743466

Sample: 320213-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0366	0.0300	122	80-120	*
4-Bromofluorobenzene	0.0151	0.0300	50	80-120	*

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743466

Sample: 320213-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0368	0.0300	123	80-120	*
4-Bromofluorobenzene	0.0117	0.0300	39	80-120	*

Lab Batch #: 743466

Sample: 320213-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0355	0.0300	118	80-120	
4-Bromofluorobenzene	0.0199	0.0300	66	80-120	*

Lab Batch #: 743466

Sample: 320213-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 743466

Sample: 320213-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 743466

Sample: 521085-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743466

Sample: 521085-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0094	0.0300	31	80-120	*

Lab Batch #: 743466

Sample: 521085-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0238	0.0300	79	80-120	*

Lab Batch #: 743473

Sample: 320213-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0356	0.0300	119	80-120	
4-Bromofluorobenzene	0.0519	0.0300	173	80-120	*

Lab Batch #: 743473

Sample: 320213-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0398	0.0300	133	80-120	*
4-Bromofluorobenzene	0.0703	0.0300	234	80-120	*

Lab Batch #: 743473

Sample: 320213-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0466	0.0300	155	80-120	*
4-Bromofluorobenzene	0.1136	0.0300	379	80-120	*

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743473

Sample: 521091-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0243	0.0300	81	80-120	

Lab Batch #: 743473

Sample: 521091-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0344	0.0300	115	80-120	
4-Bromofluorobenzene	0.0083	0.0300	28	80-120	*

Lab Batch #: 743473

Sample: 521091-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 743770

Sample: 320213-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.0	100	91	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

Lab Batch #: 743770

Sample: 320213-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	100	94	70-135	
o-Terphenyl	53.4	50.0	107	70-135	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743770

Sample: 320213-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	100	100	70-135	
o-Terphenyl	56.8	50.0	114	70-135	

Lab Batch #: 743770

Sample: 320213-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	100	90	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 743770

Sample: 320213-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Lab Batch #: 743770

Sample: 320213-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 743770

Sample: 320213-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	100	92	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743770

Sample: 320213-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	100	91	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

Lab Batch #: 743770

Sample: 320213-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.3	100	91	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 743770

Sample: 320213-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.2	100	90	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

Lab Batch #: 743770

Sample: 320213-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	100	90	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 743770

Sample: 320213-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	63.0	50.0	126	70-135	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743770

Sample: 320213-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	100	90	70-135	
o-Terphenyl	46.8	50.0	94	70-135	

Lab Batch #: 743770

Sample: 320213-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	100	90	70-135	
o-Terphenyl	46.3	50.0	93	70-135	

Lab Batch #: 743770

Sample: 320213-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.1	100	90	70-135	
o-Terphenyl	46.8	50.0	94	70-135	

Lab Batch #: 743770

Sample: 320213-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	100	90	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 743770

Sample: 320213-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.4	100	89	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743770

Sample: 320213-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.4	100	94	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 743770

Sample: 320213-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.3	100	91	70-135	
o-Terphenyl	46.7	50.0	93	70-135	

Lab Batch #: 743770

Sample: 320213-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.3	100	88	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 743770

Sample: 320213-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.3	100	89	70-135	
o-Terphenyl	46.3	50.0	93	70-135	

Lab Batch #: 743770

Sample: 320213-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.7	100	90	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Eubank Discharge 4"

Work Orders : 320213,

Project ID: 2008-311

Lab Batch #: 743770

Sample: 521297-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

Lab Batch #: 743770

Sample: 521297-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	100	88	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 743770

Sample: 521297-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

\*\* 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: Hugh Gathering Eubank Discharge 4"

Work Order #: 320213

Project ID: 2008-311

Analyst: ASA

Date Prepared: 12/12/2008

Date Analyzed: 12/12/2008

Lab Batch ID: 743466

Sample: 521085-1-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	0.1006	101	0.1	0.0995	100	1	70-130	35	
Toluene	ND	0.1000	0.0926	93	0.1	0.0918	92	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1002	100	0.1	0.0997	100	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2001	100	0.2	0.1999	100	0	70-135	35	
o-Xylene	ND	0.1000	0.0955	96	0.1	0.0952	95	0	71-133	35	

Analyst: ASA

Date Prepared: 12/12/2008

Date Analyzed: 12/13/2008

Lab Batch ID: 743473

Sample: 521091-1-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	0.1110	111	0.1	0.1106	111	0	70-130	35	
Toluene	ND	0.1000	0.1013	101	0.1	0.1007	101	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1065	107	0.1	0.1061	106	0	71-129	35	
m,p-Xylenes	ND	0.2000	0.2138	107	0.2	0.2122	106	1	70-135	35	
o-Xylene	ND	0.1000	0.1010	101	0.1	0.1006	101	0	71-133	35	

Relative Percent Difference RPD = 200\*(C-F)/(C+F)

Blank Spike Recovery [D] = 100\*(C)/[B]

Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]

All results are based on MDL and Validated for QC Purposes



# BS / BSD Recoveries



**Project Name: Hugh Gathering Eubank Discharge 4"**

**Work Order #: 320213**

**Project ID: 2008-311**

**Analyst: BHW**

**Date Prepared: 12/15/2008**

**Date Analyzed: 12/16/2008**

**Lab Batch ID: 743770**

**Sample: 521297-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>TPH By SW8015 Mod</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	878	88	1000	876	88	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	937	94	1000	934	93	0	70-135	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



Project Name: Hugh Gathering Eubank Discharge 4"

Work Order #: 320213

Project ID: 2008-311

Lab Batch ID: 743466

QC- Sample ID: 320213-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/13/2008

Date Prepared: 12/12/2008

Analyst: ASA

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.1037	0.0815	79	0.1037	0.0816	79	0	70-130	35
Toluene	ND	0.1037	0.0759	73	0.1037	0.0760	73	0	70-130	35	
Ethylbenzene	0.0022	0.1037	0.0775	73	0.1037	0.0766	72	1	71-129	35	
m,p-Xylenes	0.0027	0.2074	0.1554	74	0.2074	0.1534	73	1	70-135	35	
o-Xylene	0.0019	0.1037	0.0702	66	0.1037	0.0699	66	0	71-133	35	X

Lab Batch ID: 743770

QC- Sample ID: 320213-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2008

Date Prepared: 12/15/2008

Analyst: BHW

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	1010	856	85	1010	869	86	1	70-135	35
C12-C28 Diesel Range Hydrocarbons	19.2	1010	942	91	1010	973	94	3	70-135	35	

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

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

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



# Sample Duplicate Recovery



Project Name: Hugh Gathering Eubank Discharge 4"

Work Order #: 320213

Lab Batch #: 743417

Project ID: 2008-311

Date Analyzed: 12/12/2008

Date Prepared: 12/12/2008

Analyst: BEV

QC- Sample ID: 320202-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.24	7.09	2	20	

Lab Batch #: 743418

Date Analyzed: 12/12/2008

Date Prepared: 12/12/2008

Analyst: BEV

QC- Sample ID: 320213-019 D

Batch #: 1

Matrix: Soil

Reporting Units: %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	8.36	8.72	4	20	

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

## Terracon

Consulting Engineers & Scientists

Office Location: AH  
M. Island TX

Project Manager: BARRETT Dole

Sampler's Name: SEAN CARTER

Proj. No: A4087125

Laboratory: XENCC

Address: \_\_\_\_\_

Contact: Barrett Dole

Phone: 432-684-7666

PO/ISO #: ZCC8-311

Sampler's Signature: Sean Carter

Project Name: Hugh Giffening Embank

No/Type of Containers: 4/8/4cc h.

Matrix	Date	Time	Comp	Gr	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AVG TL	250 ml	PVO	ANALYSIS REQUESTED	Lab Sample ID (Lab Use Only)
S	12-8-08	13:35		X	SEC 1 - BH 1							X	320213 1
		13:40			SEC 1 BH 2							X	2
		13:45			SEC 1 BH 3							X	3
		13:50			SEC 1 SW-1							X	4
	12-8-08	14:00			SEC 1 SW-2							X	5
	12-16-08	10:00			SEC 1 SW-3							X	6
		10:05			SEC 1 SW-4							X	7
	12-16-08	10:10			SEC 1 SW-5							X	8

Turn around time:  Normal  25% Rush  50% Rush  100% Rush

Relinquished by (Signature): <u>Sean Carter</u>	Date: <u>12-12-08</u>	Time: <u>9:15</u>	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: <u>1/14/09</u>	Time: <u>9:15</u>

Matrix Container: WW - Wastewater, VOA - 40 ml vial, W - Water, A/G - Amber / Or Glass 1 Liter, S - Soil, SD - Solid, L - Liquid, A - Air Bag, C - Charcoal tube, BL - sludge, O - Oil

Notes: Fill Plains  
Plains Contact Jason Henry  
lab xls as seals.

Houston Office 11595 Clay Road, Suite 100 Houston, Texas 77043 (713) 690-8989 Fax (713) 690-8787	Dallas Office 6901 Carpenter Freeway, Suite 100 Dallas, Texas 75247 (214) 630-1010 Fax (214) 630-7070	Fort Worth Office 2601 Gravel Drive Fort Worth, Texas 76118 (817) 268-8600 Fax (817) 268-8602	Austin Office 5307 Industrial Oaks Blvd. # 160 Austin, Texas 78735 (512) 442-1122 Fax (512) 442-1181
Midland Office 24 Smith Rd., # 261 Midland, Texas 79705 (432) 684-9600 Fax (432) 684-9608			



Office Location AY  
Midland, TX

Project Manager Garrett Fule

Sample's Name  
SEAN CARTER

Laboratory: XENIC

Address: \_\_\_\_\_

Contact: Garrett Fule

Phone: 432-684-7600

PO/SO #: 2008-511

Sample's Signature  
Sean Carter

ANALYSIS REQUESTED

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Lab use only  
Due Date: 2-5

Temp of coolers when received (C°):

1	2	3	4	5
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Page 2 of 3

Proj. No. AYC57125 Project Name Health Center in Midland, TX No/Type of Containers 10/4oz lids

Matrix	Date	Time	COED	Identifying Marks of Sample(s)	Start Depth	End Depth	VCA	AG TLL	250 ml	PRO	Lab Sample ID (Lab Use Only)	
4	12-09	13:45	X	SEC 3 - BH 4							X X	20C 213 - 1
		13:46		SEC 3 BH 5								10
		13:20		SEC 3 BH 6								11
		13:50		SEC 3 BH 7								12
		13:55		SEC 3 BH 8								13
		13:46		SEC 3 SL 6								14
		14:45		SEC 3 SL 7								15
		15:55		SEC 3 SL 8								16
		17:00		SEC 3 SW 9								17
		14:10		SEC 3 SL 10							Y X	18

Turn around time  Normal  25% Rush  50% Rush  100% Rush

Relinquished by (Signature) <u>Sean Carter</u>	Date: <u>12-12-08</u> Time: <u>9:15</u>	Received by (Signature) <u>Bill Plains</u>	Date: _____ Time: _____
Relinquished by (Signature)	Date: _____ Time: _____	Received by (Signature)	Date: _____ Time: _____
Relinquished by (Signature)	Date: _____ Time: _____	Received by (Signature)	Date: _____ Time: _____
Relinquished by (Signature)	Date: _____ Time: _____	Received by (Signature) <u>Jason Henry</u>	Date: <u>2/2/09</u> Time: <u>9:15</u>

NOTES:  
Bill Plains Plains Contact Jason Henry  
Labels as custody seals.

Matrix Container: WW - Wastewater VOA - 40 ml vial W - Water AG - Amber / Or Glass 1 Liter S - Soil SD - Solid L - Liquid A - Air Bag G - Charcoal tube SL - sludge O - Oil

250 ml - Glass wide mouth

PRO - Plastic or other

Houston Office 11555 Clay Road, Suite 100 Houston, Texas 77043 (713) 690-8989 Fax (713) 690-8787	Dallas Office 1801 Carpenter Freeway, Suite 100 Dallas, Texas 75247 (214) 630-1010 Fax (214) 630-7070	Fort Worth Office 2601 Grand Drive Fort Worth, Texas 76118 (817) 268-8600 Fax (817) 268-8602	Austin Office 5307 Industrial Oaks Blvd. # 160 Austin, Texas 78733 (512) 442-1122 Fax (512) 442-1181
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Midland Office  
24 Scrush Rd. # 261  
Midland, Texas 79705  
(432) 684-9600 Fax (432) 684-9608



Office Location A4  
Midland, TX

Project Manager BARRETT BOLE

Laboratory: XENCO

Address: \_\_\_\_\_

Contact: BARRETT BOLE

Phone: 432-684-9600

PO/ISO #: 2008-311

ANALYSIS REQUESTED

TPH (8015M)  
PLEX (8021B)

Temp. of coolers when received (C°)

1	2	3	4	5

Page 3 of 3

Lab use only

Due Date 25

Sampler's Name: SEAN CARTER

Sampler's Signature: [Signature]

Prop. No. A4087125

Project Name Hugh Guttering Embankment Discharge

4" No/Type of Containers 2 / 4oz Jars

Matrx	Date	Time	C O M P	G R	Identifying Marks of Sample(s)	Soil	Dist	Depth	VOL	AG 1L	250 ml	P/O	Lab Sample ID (Lab Use Only)
S	12-11-08	13:10	X		Sec 2. BH-9								320213 - 19
S	12-11-08	13:15	X		Sec 2. BH-10								↓ 20

Turn around time  Normal  28% Rush  50% Rush  100% Rush

Relinquished by (Signature): <u>[Signature]</u>	Date: <u>12.12.08</u>	Time: <u>2:15</u>	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____

NOTES: Bill Plains  
Plains Contact + Jason Henry

Labels as seeds.

Matrix: WW - Wastewater    W - Water    S - Soil    SD - Solid    L - Liquid    A - Air Bag    C - Charcoal tube    SL - sludge    O - Oil

Container: VOA - 40 ml vial    AVG - Amber / Or Glass 1 Liter    250 ml - Glass wide mouth    P/O - Plastic or other

Houston Office  
11555 Clay Road, Suite 100  
Houston, Texas 77043  
(713) 690-8989 Fax (713) 690-8787

Dallas Office  
8901 Carpenter Freeway, Suite 100  
Dallas, Texas 75247  
(214) 630-1010 Fax (214) 630-7070

Fort Worth Office  
2601 Gravel Drive  
Fort Worth, Texas 76118  
(817) 268-8600 Fax (817) 268-8602

Austin Office  
5307 Industrial Oaks Blvd. # 160  
Austin, Texas 78735  
(512) 442-1122 Fax (512) 442-1181

Midland Office  
24 Smith Rd., # 261  
Midland, Texas 79705  
(432) 684-2600 Fax (432) 684-9608

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

Client: Terrace/Plains  
 Date/ Time: 12/12/08 9:15  
 Lab ID #: 52C213  
 Initials: lyl

**Sample Receipt Checklist**

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/>	No	25 °C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/>	No	
#3 Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/>	No	(Not Present)
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/>	No	Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/>	No	
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/>	No	
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/>	No	
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/>	No	ID written on Cont./ Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/>	No	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/>	No	
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/>	No	
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/>	No	See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/>	No	See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/>	No	
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/>	No	See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	No	See Below
#19 Subcontract of sample(s)?	<input checked="" type="checkbox"/>	No	(Not Applicable)
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/>	No	Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken:  
 \_\_\_\_\_  
 \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# **Analytical Report 321100**

**for**

## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Hugh Gathering Enbanks Discharge 4"**

**2008-311**

**29-DEC-08**



**12600 West I-20 East Odessa, Texas 79765**

**Texas certification numbers:**

**Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX**

**Florida certification numbers:**

**Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675**

**Norcross(Atlanta), GA E87429**

**South Carolina certification numbers:**

**Norcross(Atlanta), GA 98015**

**North Carolina certification numbers:**

**Norcross(Atlanta), GA 483**

**Houston - Dallas - San Antonio - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta**



29-DEC-08

Project Manager: **Jason Henry**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **321100**  
**Hugh Gathering Enbanks Discharge 4"**  
Project Address:

**Jason Henry:**

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 321100. 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. 321100 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

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**Sample Cross Reference 321100**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Hugh Gathering Enbanks Discharge 4"

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
Sec. 1 BH-2A	S	Dec-22-08 12:05		321100-001
Sec. 3 BH-5A	S	Dec-22-08 14:40		321100-002
Sec. 1 BH-3A	S	Dec-22-08 15:55		321100-003



# Certificate of Analysis Summary 321100

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Hugh Gathering Enbanks Discharge 4"



Project Id: 2008-311

Contact: Jason Henry

Project Location:

Date Received in Lab: Tue Dec-23-08 08:58 am

Report Date: 29-DEC-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	321100-001	321100-002	321100-003			
	<i>Field Id:</i>	Sec. 1 BH-2A	Sec. 3 BH-5A	Sec 1 BH-3A			
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Dec-22-08 12:05	Dec-22-08 14:40	Dec-22-08 15:55			
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-23-08 14:00	Dec-23-08 14:00	Dec-23-08 14:00			
	<i>Analyzed:</i>	Dec-23-08 17:25	Dec-23-08 17:49	Dec-23-08 18:13			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.0011	ND 0.0011	ND 0.0011			
Toluene		ND 0.0022	ND 0.0022	ND 0.0022			
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0011			
m,p-Xylenes		ND 0.0022	ND 0.0022	ND 0.0022			
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0011			
Total Xylenes		ND 0.0022	ND 0.0022	ND 0.0022			
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0011			
<b>Percent Moisture</b>	<i>Extracted:</i>	Dec-23-08 17:00	Dec-23-08 17:00	Dec-23-08 17:00			
	<i>Analyzed:</i>						
	<i>Units/RL:</i>	% RL	% RL	% RL			
Percent Moisture		8.35 1.00	9.58 1.00	8.72 1.00			
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-24-08 10:00	Dec-24-08 10:00	Dec-24-08 10:00			
	<i>Analyzed:</i>	Dec-24-08 13:25	Dec-24-08 13:50	Dec-24-08 14:15			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		ND 16.4	ND 16.6	ND 16.4			
C12-C28 Diesel Range Hydrocarbons		ND 16.4	ND 16.6	ND 16.4			
C28-C35 Oil Range Hydrocarbons		ND 16.4	ND 16.6	ND 16.4			
Total TPH		ND 16.4	ND 16.6	ND 16.4			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

  
Brent Barron  
Odessa Laboratory Director



# 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.

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 5332 Blackberry Drive, San Antonio TX 78238  
 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Enbanks Discharge 4"

Work Orders : 321100,

Project ID: 2008-311

Lab Batch #: 744576

Sample: 321100-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0152	0.0300	51	80-120	**

Lab Batch #: 744576

Sample: 321100-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 744576

Sample: 321100-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0279	0.0300	93	80-120	

Lab Batch #: 744576

Sample: 321100-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0142	0.0300	47	80-120	**

Lab Batch #: 744576

Sample: 321100-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0217	0.0300	72	80-120	**

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Enbanks Discharge 4"

Work Orders : 321100,

Project ID: 2008-311

Lab Batch #: 744576

Sample: 521792-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 744576

Sample: 521792-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.0137	0.0300	46	80-120	**

Lab Batch #: 744576

Sample: 521792-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 744836

Sample: 321100-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.4	50.0	101	70-135	

Lab Batch #: 744836

Sample: 321100-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

\*\* 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.



## Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Enbanks Discharge 4"

Work Orders : 321100,

Project ID: 2008-311

Lab Batch #: 744836

Sample: 321100-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	56.9	50.0	114	70-135	

Lab Batch #: 744836

Sample: 321100-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.5	100	99	70-135	
o-Terphenyl	49.3	50.0	99	70-135	

Lab Batch #: 744836

Sample: 321100-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 744836

Sample: 521969-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

Lab Batch #: 744836

Sample: 521969-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	50.5	50.0	101	70-135	

\*\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Hugh Gathering Enbanks Discharge 4"

Work Orders : 321100,

Project ID: 2008-311

Lab Batch #: 744836

Sample: 521969-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	55.8	50.0	112	70-135	

\*\* 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: Hugh Gathering Enbanks Discharge 4"**

Work Order #: 321100

Project ID: 2008-311

Analyst: ASA

Date Prepared: 12/23/2008

Date Analyzed: 12/23/2008

Lab Batch ID: 744576

Sample: 521792-1-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	0.1060	106	0.1	0.1081	108	2	70-130	35	
Toluene	ND	0.1000	0.1007	101	0.1	0.1029	103	2	70-130	35	
Ethylbenzene	ND	0.1000	0.1035	104	0.1	0.1059	106	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.2083	104	0.2	0.2129	106	2	70-135	35	
o-Xylene	ND	0.1000	0.0978	98	0.1	0.0998	100	2	71-133	35	

Analyst: BHW

Date Prepared: 12/24/2008

Date Analyzed: 12/24/2008

Lab Batch ID: 744836

Sample: 521969-1-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	978	98	1000	990	99	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1010	101	1000	1040	104	3	70-135	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



Project Name: Hugh Gathering Enbanks Discharge 4"

Work Order #: 321100

Project ID: 2008-311

Lab Batch ID: 744576

QC- Sample ID: 321100-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/23/2008

Date Prepared: 12/23/2008

Analyst: ASA

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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	0.1091	0.0866	79	0.1091	0.0901	83	5	70-130	35
Toluene	ND	0.1091	0.0804	74	0.1091	0.0850	78	5	70-130	35	
Ethylbenzene	ND	0.1091	0.0800	73	0.1091	0.0869	80	9	71-129	35	
m,p-Xylenes	ND	0.2182	0.1625	74	0.2182	0.1762	81	9	70-135	35	
o-Xylene	ND	0.1091	0.0744	68	0.1091	0.0813	75	10	71-133	35	X

Lab Batch ID: 744836

QC- Sample ID: 321100-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/24/2008

Date Prepared: 12/24/2008

Analyst: BHW

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	1040	95	1090	1040	95	0	70-135	35
C12-C28 Diesel Range Hydrocarbons	ND	1090	1080	99	1090	1100	101	2	70-135	35	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B  
Relative Percent Difference RPD = 200\*(C-F)/(C+F)

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

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



# Sample Duplicate Recovery



**Project Name: Hugh Gathering Enbanks Discharge 4"**

**Work Order #: 321100**

**Lab Batch #: 744580**

**Project ID: 2008-311**

**Date Analyzed: 12/23/2008**

**Date Prepared: 12/23/2008**

**Analyst: MOV**

**QC- Sample ID: 321100-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

## SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	8.35	8.38	0	20	

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



Office Location: A4  
Midland, TX

Project Manager: BARRETT FOLE

Sample Name: SEAN CARTER

Proj. No.: AVC 87125

Laboratory: XENCO

Address: \_\_\_\_\_

Contact: BARRETT FOLE

Phone: 432 684 9666

PO/ISO #: 2008-311

Project Name: Hugh Weathering Enhancement Project

No/Type of Containers: 3/4oz 1oz

ANALYSIS REQUESTED

Lab use only  
Due Date: \_\_\_\_\_

Temp of coolers when received (C/F): 10

Page 1 of 1

Matrix	Date	Time	Comp	Identifying Marks of Sample(s)	Start Depth	End Depth	VOL	AVG 1L	250 ml	PRO	Lab Sample ID (Lab Use Only)
S	12/22/08	12:05	X	Sec. 1. RH-2A							321106-01
S	12/22/08	14:40	X	Sec. 3. RH-5A							-02
S	12/22/08	15:55	X	Sec. 1 BH-3A							-03

Turn around time:  Normal  25% Rush  50% Rush  100% Rush

Relinquished by (Signature): <u>Sean Carter</u>	Date: <u>12/23/08</u>	Time: <u>9:00</u>	Received by (Signature): <u>John Johnson</u>	Date: <u>12/23/08</u>	Time: <u>08:20</u>
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____
Relinquished by (Signature): _____	Date: _____	Time: _____	Received by (Signature): _____	Date: _____	Time: _____

NOTES: Please Invoice + CC Results to Jason Henry w/ plans Labels/Signs

Matrix: WW - Wastewater, VOA - 40 ml vial	W - Water, A/G - Arbores / Or Glass 1 Liter	S - Soil	SD - Solid	L - Liquid 250 ml - Glass wide mouth	A - Air Bag	C - Charcoal tube	SL - sludge	O - Oil
---	---	----------	------------	--------------------------------------	-------------	-------------------	-------------	---------

<b>Houston Office</b> 11555 Clay Road, Suite 100 Houston, Texas 77043 (713) 690-8989 Fax (713) 690-8787	<b>Dallas Office</b> 8901 Carpenter Freeway, Suite 100 Dallas, Texas 75247 (214) 630-1010 Fax (214) 630-7070	<b>Fort Worth Office</b> 2601 Cypress Drive Fort Worth, Texas 76118 (817) 268-8600 Fax (817) 268-8602	<b>Austin Office</b> 3307 Industrial Oaks Blvd, # 160 Austin, Texas 78735 (512) 442-1122 Fax (512) 442-1181
--	---	--	--

<b>Midland Office</b> 24 Smith Rd, # 261 Midland, Texas 79705 (432) 684-9600 Fax (432) 684-9608
--

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

Client Terracon/ Plains  
 Date/ Time 12.23.03 9:00  
 Lab ID # 32100  
 Initials AL

**Sample Receipt Checklist**

			Client Initials	
#1	Temperature of container/ cooler?	Yes	No	10 °C
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present
#5	Chain of Custody present?	Yes	No	
#6	Sample instructions complete of Chain of Custody?	Yes	No	
#7	Chain of Custody signed when relinquished/ received?	Yes	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11	Containers supplied by ELOY?	Yes	No	
#12	Samples in proper container/ bottle?	Yes	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	Yes	No	
#15	Preservations documented on Chain of Custody?	Yes	No	
#16	Containers documented on Chain of Custody?	Yes	No	
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18	All samples received within sufficient hold time?	Yes	No	See Below
#19	Subcontract of sample(s)?	Yes	No	Not Applicable
#20	VOC samples have zero headspace?	Yes	No	Not Applicable

**Variance Documentation**

Contact \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding \_\_\_\_\_

Corrective Action Taken.  
 \_\_\_\_\_  
 \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# **Analytical Report 321116**

**for**

## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Hugh Gathering Eubanks Discharge 4"**

**2008-311**

**31-DEC-08**



**12600 West I-20 East Odessa, Texas 79765**

**Texas certification numbers:**

**Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX**

**Florida certification numbers:**

**Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675**

**Norcross(Atlanta), GA E87429**

**South Carolina certification numbers:**

**Norcross(Atlanta), GA 98015**

**North Carolina certification numbers:**

**Norcross(Atlanta), GA 483**

**Houston - Dallas - San Antonio - Tampa - Miami - Latin America**

**Midland - Corpus Christi - Atlanta**



31-DEC-08

Project Manager: **Jason Henry**  
**PLAINS ALL AMERICAN EH&S**  
1301 S. COUNTY ROAD 1150  
Midland, TX 79706

Reference: XENCO Report No: **321116**  
**Hugh Gathering Eubanks Discharge 4"**  
Project Address:

**Jason Henry:**

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 321116. 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. 321116 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

*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 - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



**Sample Cross Reference 321116**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Hugh Gathering Eubanks Discharge 4"

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
Stock Pile 1A	S	Dec-22-08 11:20		321116-001



# Certificate of Analysis Summary 321116

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Hugh Gathering Eubanks Discharge 4"



Project Id: 2008-311

Contact: Jason Henry

Project Location:

Date Received in Lab: Tue Dec-23-08 08:58 am

Report Date: 31-DEC-08

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 321116-001						
	<b>Field Id:</b> Stock Pile 1A						
	<b>Depth:</b>						
	<b>Matrix:</b> SOIL						
	<b>Sampled:</b> Dec-22-08 11:20						
<b>Flash Point (CC) SW-846 1010</b>	<b>Extracted:</b>						
	<b>Analyzed:</b> Dec-30-08 14:50						
	<b>Units/RL:</b> Deg F RL						
Flash Point	> 150 50.0						
<b>Reactive Cyanide by EPA 9010</b>	<b>Extracted:</b>						
	<b>Analyzed:</b> Dec-29-08 11:40						
	<b>Units/RL:</b> mg/kg RL						
Cyanide	ND 50.0						
<b>Reactive Sulfide by SW 9030B</b>	<b>Extracted:</b>						
	<b>Analyzed:</b> Dec-29-08 12:52						
	<b>Units/RL:</b> mg/kg RL						
Sulfide	ND 50.0						
<b>Soil pH by EPA 9045C</b>	<b>Extracted:</b>						
	<b>Analyzed:</b> Dec-29-08 10:46						
	<b>Units/RL:</b> SU RL						
pH	7.65						

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

  
Brent Barron  
Odessa Laboratory Director



# 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.

\* Outside XENCO's scope of NELAC Accreditation.

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4143 Greenbriar Dr, Stafford, Tx 77477  
 9701 Harry Hines Blvd , Dallas, TX 75220  
 5332 Blackberry Drive, San Antonio TX 78238  
 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



# Blank Spike Recovery



**Project Name: Hugh Gathering Eubanks Discharge 4"**

**Work Order #: 321116**

**Project ID:**

**2008-311**

**Lab Batch #: 745104**

**Sample: 745104-1-BKS**

**Matrix: Solid**

**Date Analyzed: 12/29/2008**

**Date Prepared: 12/29/2008**

**Analyst: WRU**

**Reporting Units: mg/kg**

**Batch #: 1**

**BLANK /BLANK SPIKE RECOVERY STUDY**

<b>Reactive Cyanide by EPA 9010</b>	<b>Blank Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>						
Cyanide	ND	5.00	6.45	129	57-93	H

**Lab Batch #: 745108**

**Sample: 745108-1-BKS**

**Matrix: Solid**

**Date Analyzed: 12/29/2008**

**Date Prepared: 12/29/2008**

**Analyst: GAV**

**Reporting Units: mg/kg**

**Batch #: 1**

**BLANK /BLANK SPIKE RECOVERY STUDY**

<b>Reactive Sulfide by SW 9030B</b>	<b>Blank Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>						
Sulfide	ND	1000	1080	108	60-120	

Blank Spike Recovery [D] = 100\*[C]/[B]

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



# Sample Duplicate Recovery



Project Name: Hugh Gathering Eubanks Discharge 4"

Work Order #: 321116

Lab Batch #: 745115

Project ID: 2008-311

Date Analyzed: 12/30/2008

Date Prepared: 12/30/2008

Analyst: WRU

QC- Sample ID: 321116-001 D

Batch #: 1

Matrix: Soil

Reporting Units: Deg F

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Flash Point (CC) SW-846 1010	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Flash Point	> 150	> 150	0	25	

Lab Batch #: 745104

Date Analyzed: 12/29/2008

Date Prepared: 12/29/2008

Analyst: WRU

QC- Sample ID: 321116-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Reactive Cyanide by EPA 9010	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Cyanide	ND	ND	NC	20	

Lab Batch #: 745108

Date Analyzed: 12/29/2008

Date Prepared: 12/29/2008

Analyst: GAV

QC- Sample ID: 321116-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Reactive Sulfide by SW 9030B	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Sulfide	ND	ND	NC	20	

Lab Batch #: 744870

Date Analyzed: 12/29/2008

Date Prepared: 12/29/2008

Analyst: MOV

QC- Sample ID: 321116-001 D

Batch #: 1

Matrix: Soil

Reporting Units: SU

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Soil pH by EPA 9045C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
pH	7.65	7.66	0	20	

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



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

Client Terracon / Plains  
 Date/ Time 12-23-09 9:38  
 Lab ID # 32116  
 Initials AL

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	• 5 °C
#2	Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/> Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	No	Not Present
#5	Chain of Custody present?	<input checked="" type="checkbox"/> Yes	No	
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	No	
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	No	ID written on Cont / Lid
#9	Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#11	Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	No	
#12	Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	No	See Below
#13	Samples properly preserved?	<input checked="" type="checkbox"/> Yes	No	See Below
#14	Sample bottles intact?	<input checked="" type="checkbox"/> Yes	No	
#15	Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#16	Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	No	See Below
#18	All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	No	See Below
#19	Subcontract of sample(s)?	<input checked="" type="checkbox"/> Yes	No	-Not Applicable
#20	VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	No	< Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken  
 \_\_\_\_\_  
 \_\_\_\_\_

- Check all that Apply
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

**APPENDIX D**

**Site Photographs**



**Photo #1** View of oil-filled depressions, looking northwest.



**Photo #2** View of oil recovery efforts, looking easterly.



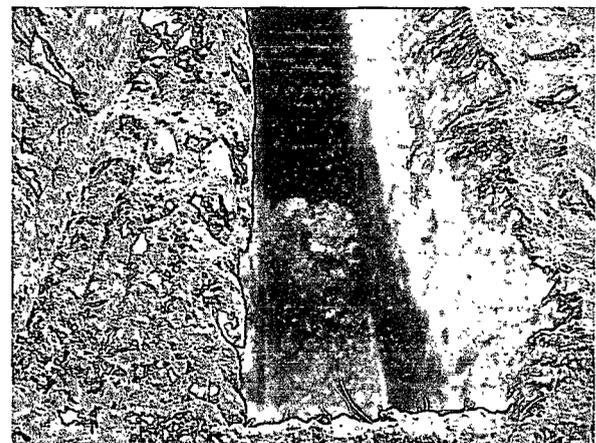
**Photo #3** View of depression following removal of free oil, looking northwest.



**Photo #4** Soil removal activities.



**Photo #5** Soil removal activities.



**Photo #6** View of delineation test trenches.

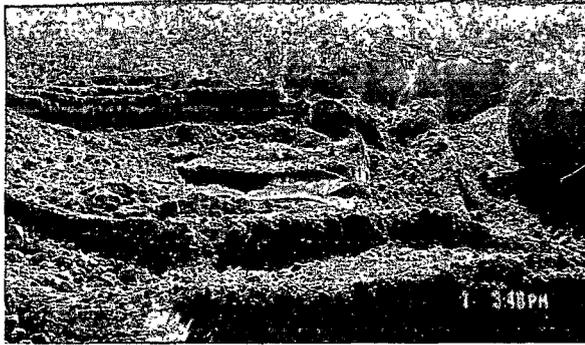


Photo #7 Continued excavation.

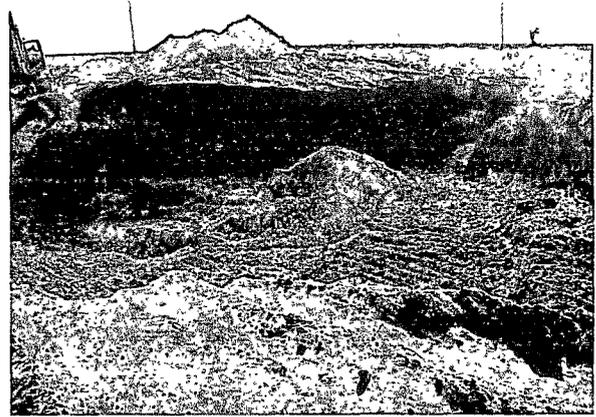


Photo #8 Continued excavation.

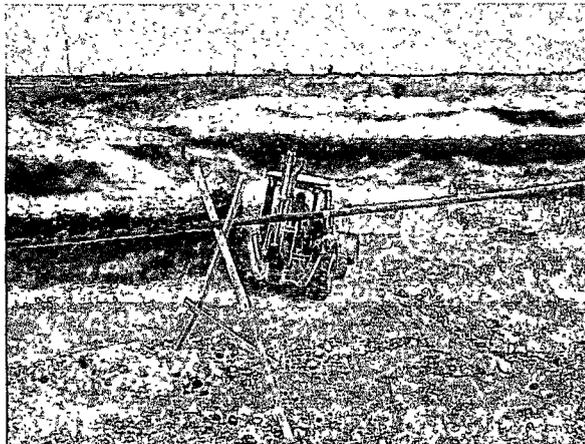


Photo #9 Continued excavation.



Photo #10 Continued excavation. Red circles denote sample collection locations.

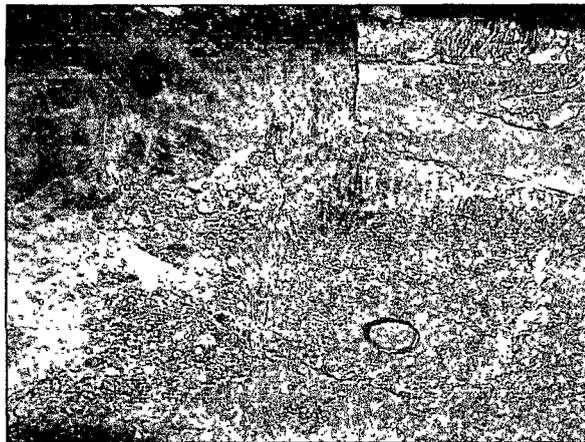


Photo #11 View of bottom hole and sidewall sampling locations.

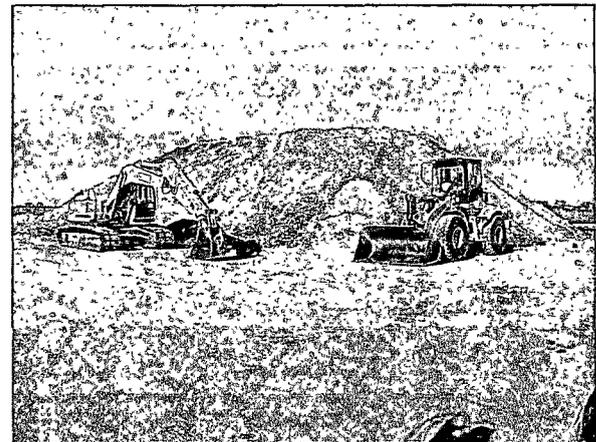
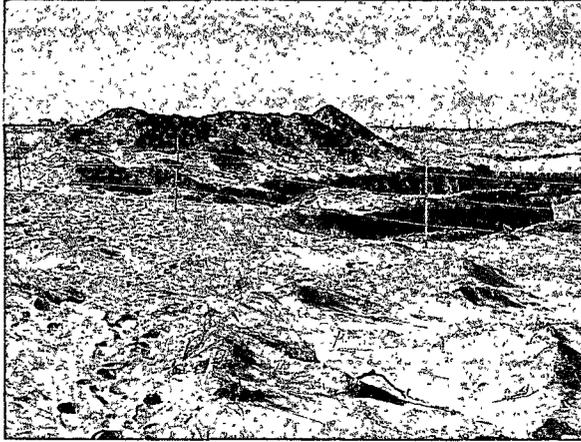
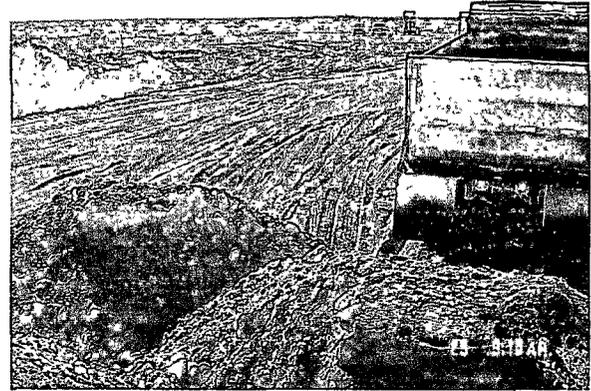


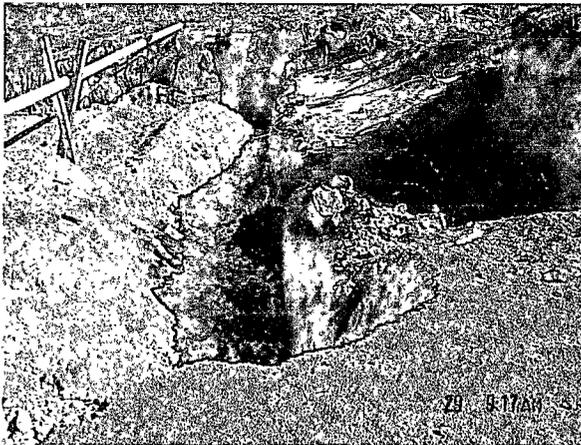
Photo #12 View of stockpile.



**Photo #13** View of stockpile and safety fencing.



**Photo #14** View of backfill (topsoil) being delivered.



**Photo #15** View of backfilling with caliche, overlaid by topsoil.



**Photo #16** Final site restoration view.



**Photo #17** Final site restoration view.



**Photo #18** Final site restoration view.

**APPENDIX E**

**Regulatory Documents**

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

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141  
Revised October 10, 2003

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

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company	Plains Pipeline, LP	Contact	Jason Henry
Address	2530 Hwy 214 - Denver City, Tx 79323	Telephone No.	(575) 441-1099
Facility Name	Hugh Gathering Eubanks Discharge 4"	Facility Type	Pipeline
Surface Owner	Charlie Bettis	Mineral Owner	
		Lease No.	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	22	21S	37E					Lea

Latitude N 32.46682° Longitude W 103.14531°

**NATURE OF RELEASE**

Type of Release	Crude Oil	Volume of Release	1940 bbls	Volume Recovered	1280 bbls
Source of Release	4" steel pipeline	Date and Hour of Occurrence	11/23/2008	Date and Hour of Discovery	11/23/2008 08:00
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Larry Johnson		
By Whom?	Daniel Bryant	Date and Hour	11/24/2008 08:00	RECEIVED	
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	DEC 04 2008		

If a Watercourse was Impacted, Describe Fully.\*

HOBBS 10/18/11

Describe Cause of Problem and Remedial Action Taken.\*

Thermal expansion behind a stuck brush pig caused a 4" pipeline to rupture along the pipe seam at a corroded soil air interface releasing crude oil. Pipeline was replaced on 11/24/2008. Throughput on the line is approximately 1774 bbls per day. Operating pressure of the pipeline is 90 psi. The pipeline was above ground at the release location. H2S content of the crude is less than 10 ppm. The gravity of the crude is 38.5.

Describe Area Affected and Cleanup Action Taken.\*

Released crude oil collected in two low-lying areas impacting an area which measured approximately 500' X 300'. Impacted area will be remediated per applicable guidelines.

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

Signature:	<i>Jason Henry</i>	OIL CONSERVATION DIVISION	
Printed Name:	Jason Henry	Approved by District Supervisor:	<i>L. Johnson</i>
Title:	Remediation Coordinator	Approval Date:	12-4-08
E-mail Address:	jhenry@paalp.com	Expiration Date:	2-4-09
Date:	12-04-2008	Conditions of Approval:	Attached <input type="checkbox"/> IRP# 2012
Phone:	(575) 441-1099	SUBMIT FINAL BY	

\* Attach Additional Sheets If Necessary

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

State of New Mexico  
Energy Minerals and Natural Resources

Form C-138  
Revised March 12, 2007

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

\*Surface Waste Management Facility Operator  
and Generator shall maintain and make this  
documentation available for Division inspection.

**REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE**

<b>1. Generator Name and Address:</b> Plains Pipeline, L.P. 3112 West US Hwy. 82 Lovington, New Mexico 88260
<b>2. Originating Site:</b> Hugh Gathering Eubanks Discharge 4-inch
<b>3. Location of Material (Street Address, City, State or ULSTR):</b> Unit Letter H, Section 22, Township 21 South, Range 37 East
<b>4. Source and Description of Waste:</b> Hugh Gathering Eubanks Discharge 4-inch site Hydrocarbon impacted soils
Estimated Volume <u>8,000</u> <u>yd<sup>3</sup></u> bbls Known Volume (to be entered by the operator at the end of the haul) <u>                    </u> <u>yd<sup>3</sup></u> bbls
<b>5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS</b> I, <u>Jason Henry</u> , representative or authorized agent for <u>Plains Pipeline, L.P.</u> do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) <input type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. <u>Operator Use Only: Waste Acceptance Frequency</u> <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Per Load <input checked="" type="checkbox"/> RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) <input type="checkbox"/> MSDS Information <input checked="" type="checkbox"/> RCRA Hazardous Waste Analysis <input type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4)
<b>GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS</b> I, <u>Jason Henry</u> , representative for <u>Plains Pipeline, L.P.</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
<b>5. Transporter:</b>

**OCD Permitted Surface Waste Management Facility**

Name and Facility Permit #: Plains All American Lea Station Land Farm #GW-351

Address of Facility: NW 1/4 of Section 28, Township 20 South, Range 37 East

Method of Treatment and/or Disposal:

- Evaporation  Injection  Treating Plant  Landfarm  Landfill  Other

Waste Acceptance Status:

APPROVED

DENIED (Must Be Maintained As Permanent Record)

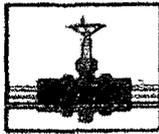
PRINT NAME: Jason Henry

TITLE: Remediation Coordinator

DATE: 05/05/2009

SIGNATURE: Jason Henry  
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 575-441-1099



**PLAINS**  
ALL AMERICAN

Lea Station Land Farm

PERMIT # GW-351

CERTIFICATE OF "NON-EXEMPT" WASTE STATUS  
AND

TRANSPORTER MANIFEST AND CHAIN-OF-CUSTODY

COMPANY PLAINS ALL AMERICAN PIPELINE

ORIGIN Unit Letter H, Section 22, Township 21 South, Range 37 East

SOURCE DESCRIPTION Crude oil impacted soil from Hugh Gathering Eubanks  
Discharge 4-inch site.

AS A CONDITION OF ACCEPTANCE FOR DISPOSAL,  
I HEREBY CERTIFY THAT THIS WASTE IS A NON-EXEMPT WASTE  
AS DEFINED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) JULY 1988  
REGULATORY DETERMINATION AND TO MY KNOWLEDGE, THIS WASTE BEEN  
CHARACTERIZED AS "NON-HAZARDOUS" PURSUANT TO THE PROVISIONS OF EPA 40 CFR  
PART 261 SUBPART C AND HAS NOT BEEN COMINGLED WITH AN EPA 40 CFR PART 261  
SUBPART D "LISTED WASTE." LIKEWISE, THIS WASTE DOES NOT CONTAIN NATURALLY  
OCCURRING RADIOACTIVE MATERIAL (NORM) PURSUANT TO 20 NMAC 3.1 SUBPART  
1403 AND CONTAINS NO FREE LIQUID PURSUANT TO THE "PAINT FILTER TEST" EPA  
METHOD 9095A.

NORM EXPOSURE RATE: N/A  $\mu$ R/HR SEE EXEMPTION, ANALYTICAL DATA  
ATTACHED.

**NMAC 20.3.14.1403 EXEMPTIONS:**

For release for unrestricted use, persons who receive, possess, use, process, transfer, distribute, transport, store or dispose of NORM are exempt from the requirements of these regulations if: the NORM present is at concentrations of 30 picocuries per gram or less of radium 226, above background, or 150 picocuries per gram or less of any other NORM radionuclide, above background, in soil, in 15 cm layers, averaged over 100 square meters. Samples should be taken if gamma radiation readings (mR/hr) are equal to or exceed twice background readings when surveyed at a distance of 1 cm from the surface of the soil, in accordance with Department guidelines.

I, JASON HENRY, THE UNDERSIGNED AGENT  
FOR, PLAINS ALL AMERICAN, HEREBY CERTIFY THAT, BASED ON  
PERSONAL KNOWLEDGE, THE ABOVE STATEMENT IS TRUE AND CORRECT.

NAME JASON HENRY  
TITLE REMEDATION COORDINATOR  
ADDRESS 2530 STATE HWY. 214  
DENVER CITY, TX 79323  
SIGNATURE *Jason Henry*  
DATE 05/05/2009

**TRANSPORTATION MANIFEST AND CHAIN-OF-CUSTODY**

Transporting Co.: _____	Driver Signature: _____
Volume: _____ yd <sup>3</sup>	Signature Date: _____
Plains All American Lea Station Landfarm Attendant Signature: _____	
Signature Date: _____	

**APPENDIX F**

**CD of the Soil Closure Confirmation Report**