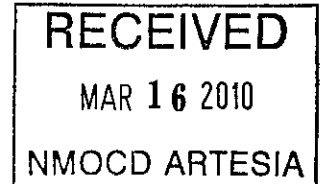


# *Basin Environmental Consulting, LLC*

2800 Plains Highway  
P. O. Box 381  
Lovington, New Mexico 88260  
cdstanley@basin-consulting.com  
Office: (575) 396-2378 Fax: (575) 396-1429



## **REMEDIATION SUMMARY AND SITE CLOSURE REQUEST**

**PLAINS PIPELINE, L.P. (231735)  
Loco Hills Station Bypass Line  
Eddy County, New Mexico  
Plains SRS# 2009-251**

**UNIT "G" (SW/NE), Section 23, Township 17 South, Range 31 East  
Latitude 32° 49' 23.4" North, Longitude 103° 50' 15.6" West**

Prepared For:

Plains Pipeline, L.P.  
333 Clay Street  
Suite 1600  
Houston, Texas 77002

Prepared By:  
Basin Environmental Consulting, LLC

**February 2010**

Curt D. Stanley

Project Manager

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## **FIGURES**

Figure 1 – Site Location Map

Figure 2 – Site and Sample Location Map

## **TABLES**

Table 1 – Concentrations of BTEX and TPH in Soil

## **APPENDICES**

Appendix A – Cultural Resource Survey

Appendix B – Laboratory Analytical Reports

Appendix C – Photographs

Appendix D – Release Notification and Corrective Action (Form C-141)

## **1.0 INTRODUCTION**

Basin Environmental Consulting, LLC (Basin), on behalf of Plains Pipeline, L.P. (Plains), has prepared this Remediation Summary and Site Closure Request for the release site known as Loco Hills Station Bypass Line (SRS# 2009-251). The site is located in Unit Letter "G" (SW ¼ NE ¼), Section 23, Township 17 South, Range 31 East, in Eddy County, New Mexico. The property is owned by the United States Department of the Interior, Bureau of Land Management (BLM). The site latitude is 32° 49' 23.4" North, and the longitude is 103° 50' 15.6" West. The Site Location and Site and Sample Location Map are provided as Figure 1 and Figure 2, respectively. The Release Notification and Corrective Action (NMOCD Form C-141) indicated approximately thirty-five (35) barrels of crude oil was released from the Plains pipeline and twenty-five (25) barrels were recovered during the initial response activities, resulting in a net loss of ten (10) barrels of crude oil. The Release Notification and Corrective Action is provided as Appendix C.

The release occurred on November 19, 2009, on a four (4) inch bypass line at the Plains Loco Hills Station facility. Plains operations personnel mitigated the crude oil release by installing a temporary clamp on the pipeline. Crude oil released from the pipeline was recovered using a vacuum truck and the impacted soil excavated during initial response activities was stockpiled on a 6-mil poly liner adjacent to the excavation. The initial visually stained area covered an area measuring approximately thirty (30) feet in width and forty (40) feet in length.

As required by the BLM, a Cultural Resource Survey was conducted by Boone Archaeological Services of Carlsbad, New Mexico. The results of the survey indicated no cultural resources were affected by the release or the subsequent remediation activities. The results of the Cultural Resource Survey are provided as Appendix A.

## **2.0 NMOCD SITE CLASSIFICATION**

A search of the New Mexico Office of the State Engineer (NMOSE) database indicated no registered water wells were located in the above referenced section. A depth to groundwater reference map utilized by the New Mexico Oil Conservation Division (NMOCD) indicated groundwater should be encountered at approximately two hundred fifty (250) feet below ground surface (bgs). The depth to groundwater at the Loco Hills Station Bypass Line release site results in a score of zero (0) points being assigned to the site, based on the NMOCD depth to groundwater criteria.

The water well database, maintained by the NMOSE, indicated there are no registered water wells located less than 1,000 feet from the release, resulting in zero (0) points being assigned to this site as a result of this criteria.

There are no surface water bodies located within 1,000 feet of the site. Based on the NMOCD ranking system zero (0) points will be assigned to the site as a result of the criteria.

The NMOCD guidelines indicate the Loco Hills Station Bypass Line release site has a ranking score of zero (0). Based on this score, the soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 5,000 mg/Kg (ppm)

### 3.0 SUMMARY OF FIELD ACTIVITIES

On November 24 and 25, 2009, hydrocarbon impacted soil was excavated at the release site. Approximately 150 cubic yards (cy) of impacted soil was stockpiled adjacent to the excavation pending final disposition. The final dimensions of the excavation were approximately eighteen (18) feet in length and ten (10) feet in width and approximately ten (10) feet bgs in depth. An irregular shaped flowpath extended to the west and south of the release point, measuring approximately ninety (90) feet in length and two (2) to twelve (12) feet in width and one (1) to two (2) feet in depth.

On November 25, 2009, four (4) soil samples (NSW @ 8', ESW @ 8', WSW @ 8' and SSW @ 8') were collected from the sidewalls of the excavation and submitted to the laboratory for analysis. The soil samples were analyzed for concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) using method EPA 8021b and concentrations of total petroleum hydrocarbon (TPH) using method SW-8015 modified. The laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory method detection limit (MDL) in each of the four (4) soil samples. TPH concentrations ranged from less than the laboratory MDL in soil samples NSW @ 8', WSW @ 8' and SSW @ 8' to 45.2 mg/Kg in soil sample ESW @ 8'. A summary of the analytical results are included in Table 1, Concentrations of BTEX and TPH in Soil. Laboratory results are included in Appendix B and soil sample locations are depicted on Figure 2, Site and Sample Location Map. Photographs of the site are provided in Appendix C.

On November 25, 2009, an excavation floor soil sample (Floor @ 10') and two (2) release flowpath soil samples (WFP and SFP) were collected and submitted to the laboratory for analysis. The laboratory analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL in each of the three (3) soil samples.

A five-point composite baseline stockpile soil sample (Baseline SP) was collected and analyzed to determine the final disposition of the excavated soil. The analytical results indicated the benzene concentration was less than the laboratory MDL of 0.0106 mg/Kg. The BTEX and TPH concentrations were 8.594 mg/Kg and 2,773 mg/Kg, respectively.

On December 9, 2009, in a meeting with Plains, Basin and NMOCD representatives, Plains requested NMOCD approval to backfill the excavation with the on-site stockpiled soil. The NMOCD representative requested Plains blend the stockpile and resample the blended soil prior to granting permission to backfill the excavation.

On December 11, 2009, the stockpile was mechanically blended, as requested by the NMOCD. On December 22, 2009, a five-point composite stockpile soil was collected and submitted to the laboratory. The analytical results indicated the benzene concentration was less than the

laboratory MDL of 0.001 mg/Kg, the BTEX concentration was 0.3007 mg/Kg and the TPH concentration was 1,139 mg/Kg.

On January 4, 2010, in a meeting with Basin and NMOCD representatives, Plains requested NMOCD approval to backfill the excavation with the on-site stockpiled soil. The NMOCD approved the backfilling activities and on January 12, 2009, the excavation was backfilled with the on-site soil and compacted with the aid of fresh water transported to the site. Following the backfill activities the site was contoured to fit the surrounding topography.

#### **4.0 QA/QC PROCEDURES**

##### **4.1 Soil Sampling**

Soil samples were delivered to Xenco Laboratories, Inc. in Odessa, Texas for BTEX and/or TPH analyses using the methods described below. Soil samples were analyzed for BTEX and/or TPH within fourteen days following the collection date.

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- TPH-GRO/DRO concentrations in accordance with modified EPA Method 8015M GRO/DRO

##### **4.2 Decontamination of Equipment**

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox<sup>®</sup> detergent and rinsed with distilled water.

##### **4.3 Laboratory Protocol**

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form. These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

#### **5.0 SITE CLOSURE REQUEST**

Based on the analytical results of confirmation soil samples, Basin recommends Plains provide the NMOCD Artesia District Office and the BLM Carlsbad District Office, a copy of this Remediation Summary and Site Closure Request and request the NMOCD and BLM grant site closure to the Loco Hills Station Bypass Line release site.

#### **6.0 LIMITATIONS**

Basin Environmental Consulting, LLC has prepared this Remediation Summary and Site Closure Proposal to the best of its ability. No other warranty, expressed or implied, is made or intended.

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

This report has been prepared for the benefit of Plains Pipeline, L.P. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Consulting, LLC and/or Plains Pipeline, L.P.

## **7.0 DISTRIBUTION:**

- Copy 1: Mike Bratcher  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division (District 2)  
1301 W. Grand Avenue  
Artesia, New Mexico 88210
- Copy 2: James Amos  
U.S. Department of the Interior  
Bureau of Land Management  
620 East Greene Street  
P.O. Box 1778  
Carlsbad, New Mexico 88220
- Copy 3: Jeff Dann  
Plains Pipeline, L.P.  
333 Clay Street, Suite 1600  
Houston, Texas 77002  
[jpdann@paalp.com](mailto:jpdann@paalp.com)
- Copy 4: Jason Henry  
Plains Pipeline, L.P.  
2530 State Highway 214  
Denver City, Texas 79323  
[jhenry@paalp.com](mailto:jhenry@paalp.com)
- Copy 5: Curt D. Stanley  
Basin Environmental Consulting, LLC  
P.O. Box 381  
Lovington, New Mexico 88260  
[cdstanley@basin-consulting.com](mailto:cdstanley@basin-consulting.com)

## Figures



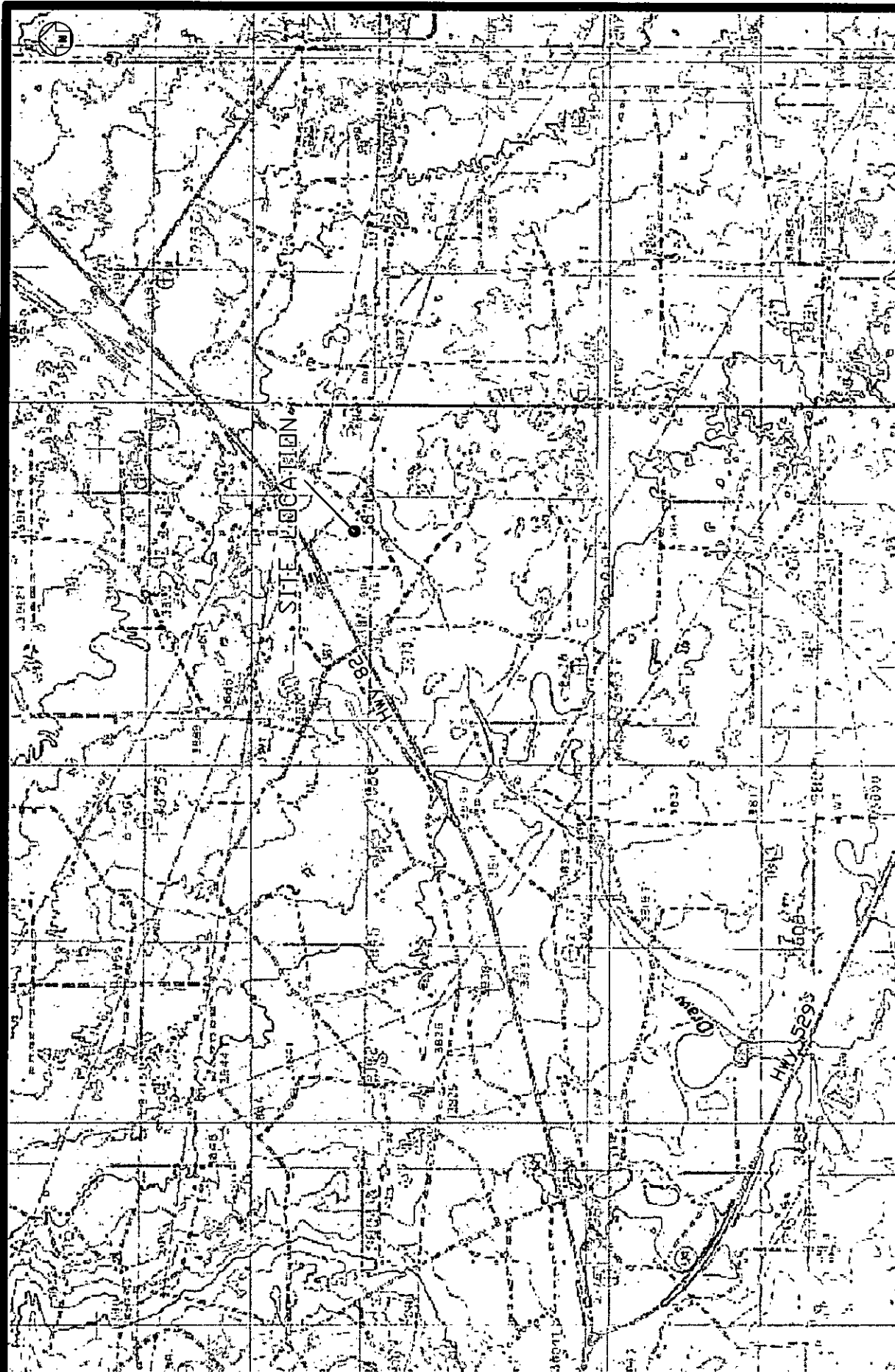
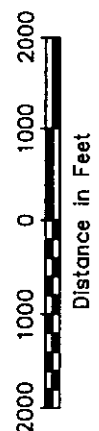
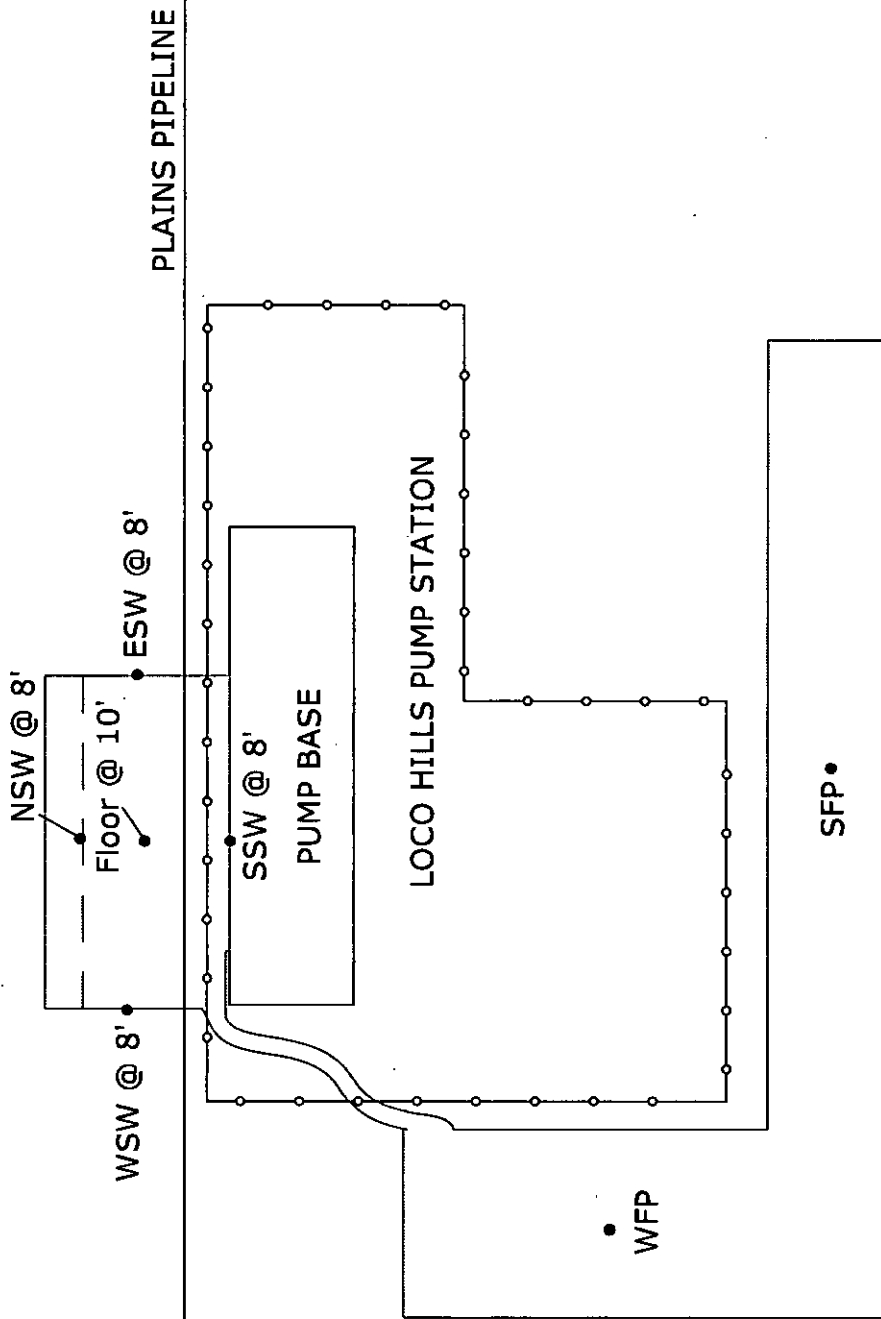


Figure 1  
 Site Location Map  
 Plains Marketing, L.P.  
 Loco Hills Station Bypass Line  
 Eddy County, New Mexico  
 SRS # 2009-251



# Basin Environmental Consulting

Prep By: CDS  
 February 15, 2010  
 Checked By: CDS  
 Scale 1"=3000'



— Excavation Extents  
— Pipeline  
— Fence

**Figure 2**  
**Site Map**  
**Plains Pipeline, L.P.**  
**Loco Hills Station**  
**Bypass Line**  
**Eddy County, New Mexico**  
**SRS # 2009-251**

## Basin Environmental Consulting

Prep By: CDS	Checked By: CDS
September 8, 2008	1" = 10 feet

## Tables

TABLE 1

## CONCENTRATIONS OF BTEX AND TPH IN SOIL

PLAINS PIPELINE, L.P.

LOCO HILLS STATION BYPASS LINE

EDDY COUNTY, NEW MEXICO

SRS: 2009-251

SAMPLE LOCATION	SAMPLE DEPTH (below ground surface)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	MLP- XYLENE (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)	TPH GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	TPH DRO C <sub>13</sub> -C <sub>28</sub> (mg/Kg)	TPH ORO C <sub>29</sub> -C <sub>36</sub> (mg/Kg)	TOTAL TPH C <sub>6</sub> -C <sub>36</sub> (mg/Kg)
NSW @ 8'	8 Feet	11/25/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0
ESW @ 8'	8 Feet	11/25/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.1	45.2	<16.1	45.2
WSW @ 8'	8 Feet	11/25/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9
SSW @ 8'	8 Feet	11/25/09	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5
Floor @ 10'	10 Feet	11/25/09	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6
WFP	6 Inches	11/25/09	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.3	<15.3	<15.3	<15.3
SFP	6 Inches	11/25/09	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9
Base line SP	N/A	11/25/09	N/A	<0.0106	0.2955	2.464	3.955	1.879	8.594	873	1,900	<159	2,773
Blended	N/A	12/22/09	N/A	<0.0010	<0.0021	0.0130	0.1697	0.118	0.3007	279	802	58.1	1,139
NMOCD REGULATORY STANDARD				10					50				5,000

## Appendices

# Appendix A

## Cultural Resource Survey

# **NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)**

1. NMCRIS Activity No.: 115951	2a. Lead (Sponsoring) Agency: BLM-CFO	2b. Other Permitting Agency(ies):	3. Lead Agency Report No.:
Title of Report: <b>An Archaeological Survey of a work area at the Loco Hills Station Bypass Line</b>			5. Type of Report <input checked="" type="checkbox"/> Negative <input type="checkbox"/> Positive
Author(s) Jeffrey Pangburn			
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic study <input type="checkbox"/> Site specific visit <input type="checkbox"/> Other			
7. Description of Undertaking (what does the project entail?): On 7 December 2009 Jeffrey Pangburn, of Boone Archaeological Services, conducted a class III survey of a work area at the Loco Hills Station Bypass Line. The project was conducted at the request of Plains Pipeline LP and is needed to allow for clean up of an oil field related spill. The project consists of a 300' x 300' survey area for the work area the impact area is unknown but estimated to be 100' x 100'. The work area will be accessed by existing bladed and caliche capped lease roads. The project is within a coppice dune field and portions of the proposed project area are impacted by existing bladed and caliche capped lease roads, overhead electric lines, pipelines, and various oil field installations. The survey located no cultural materials and is recommended to proceed as it is currently delineated. The project area is plotted on the attached maps. Location plots for the project were obtained by utilizing a hand held GPS unit. The client, prior to fieldwork, delineated the project with an orange barricade fence.			
8. Dates of Investigation: 7 Dec 2009		9. Report Date: 8 Dec 2009	
10. Performing Agency/Consultant: Boone Archaeological Services, LLC 2030 North Canal Carlsbad NM 88220  Principal Investigator: Danny Boone Field Supervisor: Jeffrey Pangburn Field Personnel Names:		11. Performing Agency/Consultant Report No.: BAS 12-09-01	
13. Client/Customer (project proponent): Plains Pipeline, LP. Contact: Camille Bryant Address: P.O. Box 3119 Midland TX 79702  Phone: (432) 686-1767		12. Applicable Cultural Resource Permit No(s): BLM 190-2920-09-L    STATE: NM-09-157-S  14. Client/Customer Project No.: SRS#2009-251	
15. Land Ownership Status ( <i>Must be indicated on project map</i> ):			
Land Owner		Acres Surveyed	Acres in APE
BLM		2.07 (+/-)	0.23 (+/-)
TOTALS		2.07 (+/-)	0.23 (+/-)
16 Records Search(es):			
Date(s) of ARMS File Review 7 Dec 2009	Name of Reviewer(s) Jeffrey Pangburn		
Date(s) of NR/SR File Review	Name of Reviewer(s)		
Date(s) of Other Agency File Review 7 Dec 2009	Name of Reviewer(s) Jeffrey Pangburn		Agency BLM-CFO
Findings: A review of the BLM and ARMS data bases located LA: 79570 and 100787 within a quarter mile of the current undertaking.			

## 17. Survey Data:

- a. Source Graphics ☒ NAD 27 ☐ NAD 83  
☒ USGS 7.5' (1:24,000) topo map ☐ Other topo map, Scale:  
☒ GPS Unit Accuracy ☐ <1.0m ☒ 1-10m ☐ 10-100m ☐ >100m

## b. USGS 7.5' Topographic Map Name USGS Quad Code

MALJAMAR, New Mexico (Prov. Ed. 1985)	32103-G7
---------------------------------------	----------

c. County: Eddy, New Mexico

## 17. Survey Data (continued):

d. Nearest City or Town: Maljamar, New Mexico

## e. Legal Description:

Township (N/S)	Range (E/W)	Section	1/4	1/4	1/4
17 S	31 E	23 (anchored in the southwest corner)	SW NE,		

Projected legal description? Yes ☐ No ☒ Unplatted ☒

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

## 18. Survey Field Methods:

Intensity: ☒ 100% coverage ☐ <100% coverageConfiguration: ☒ block survey units ☐ linear survey units (l x w): ☐ other survey units (specify):Scope: ☒ non-selective (all sites recorded) ☐ selective/thematic (selected sites recorded)Coverage Method: ☒ systematic pedestrian coverage ☐ other method (describe)

Survey Interval (m): 15 Crew Size: 1 Fieldwork Dates: 7 Dec 2009

Survey Person Hours: 2 Recording Person Hours: 0 Total Hours: 2

Additional Narrative:

## 19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Topography: Relatively Flat

Vegetative community: Mesquite, yucca, thistle drop seed grass and various other desert grasses and forbes

NRCS: Kermit-Berino association: Sandy, deep soils from wind-worked mixed sand deposits

Elevation: 3880' (+/-)

20. a. Percent Ground Visibility: 95% b. Condition of Survey Area (grazed, bladed, undisturbed, etc.): Developed Oil field

21. CULTURAL RESOURCE FINDINGS ☐ Yes, See Page 3 ☒ No, Discuss Why: Unknown

## 22. Required Attachments (check all appropriate boxes):

- ☒ USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn  
☒ Copy of NMCRIS Mapserver Map Check  
☐ LA Site Forms - new sites (*with sketch map & topographic map*)  
☐ LA Site Forms (update) - previously recorded & un-relocated sites (*first 2 pages minimum*)  
☐ Historic Cultural Property Inventory Forms  
☐ List and Description of Isolates, if applicable  
☐ List and Description of Collections, if applicable

23. Other Attachments:  
☐ Photographs and Log  
☐ Other Attachments  
 (Describe):

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Crew Chief/Responsible Archaeologist: Jeffrey Pangburn

Signature 

Date: 8 Dec 2009 Title (if not PI): Field Supervisor



25. Reviewing Agency: Reviewer's Name/Date  Accepted (    )    Rejected (    )  Tribal Consultation (if applicable): <input type="checkbox"/> Yes <input type="checkbox"/> No	26. SHPO Reviewer's Name/Date:  HPD Log #: SHPO File Location: Date sent to ARMS:
--	--

## CULTURAL RESOURCE FINDINGS

*[fill in appropriate section(s)]*

1. NMCRIS Activity No.: 115951	2. Lead (Sponsoring) Agency: BLM-CFO	3. Lead Agency Report No.:
-----------------------------------	---	----------------------------

**SURVEY RESULTS:**

Sites discovered and registered: 0  
Sites discovered and NOT registered: 0  
Previously recorded sites revisited *(site update form required)*: 0  
Previously recorded sites not relocated *(site update form required)*: 0  
TOTAL SITES VISITED: 0  
Total isolates recorded: 0      Non-selective isolate recording? ☐  
Total structures recorded *(new and previously recorded, including acequias)*: 0

**MANAGEMENT SUMMARY:** Archaeological clearance is recommended, as the project is currently delineated, for the proposed work area at the Loco Hills Station Bypass Line to clean up an oil spill for Plains Pipeline LP. Should cultural material be encountered, at any time, all work should cease and a BLM-CFO staff archaeologist notified immediately.

IF REPORT IS NEGATIVE YOU ARE DONE AT THIS POINT.

**SURVEY LA NUMBER LOG**  
Sites Discovered:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)

Previously recorded revisited sites:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)

**MONITORING LA NUMBER LOG** *(site form required)*  
Sites Discovered *(site form required)*:      Previously recorded sites *(Site update form required)*:

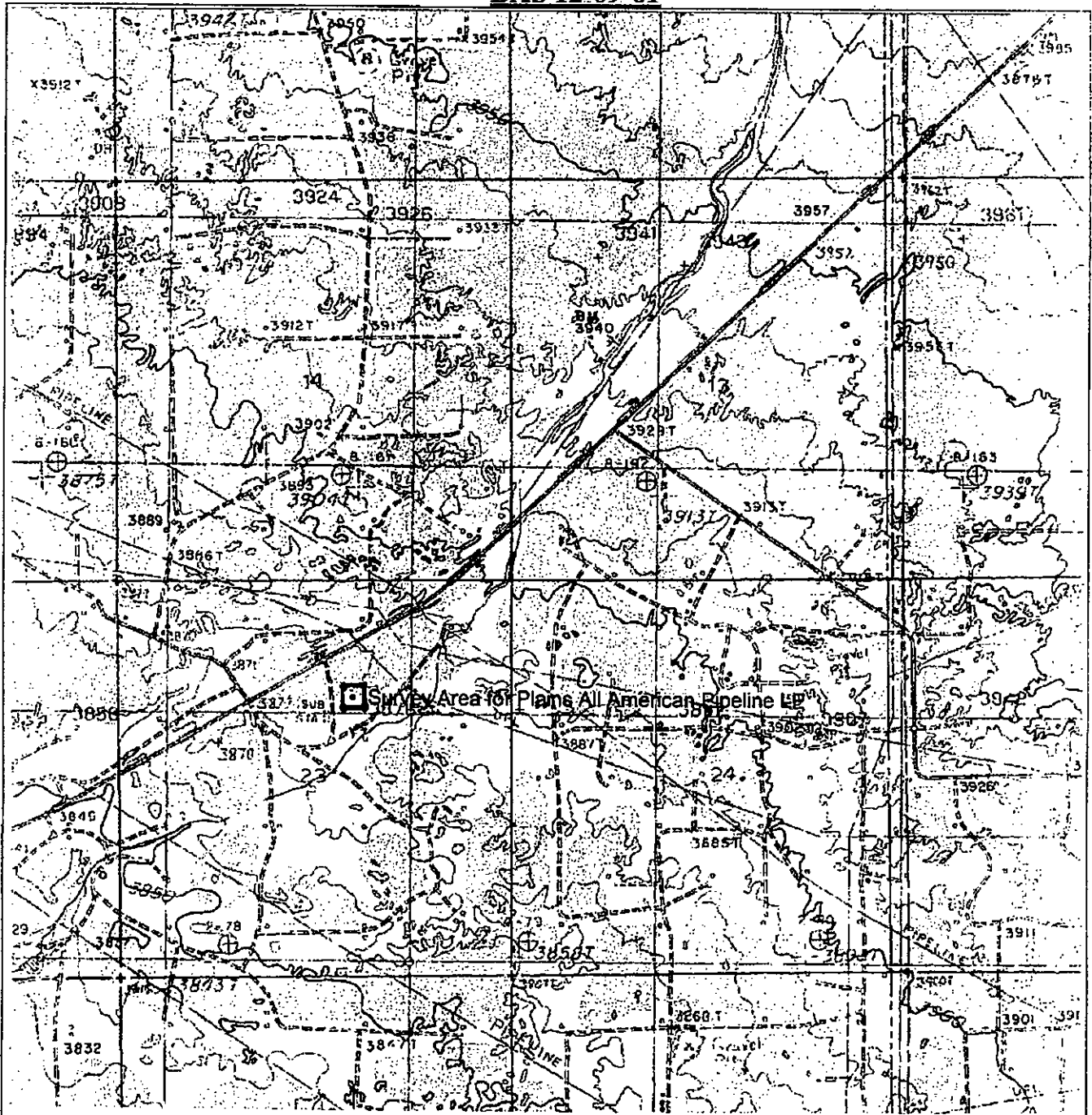
LA No.	Field/Agency No.	LA No.	Field/Agency No.

Areas outside known nearby site boundaries monitored? Yes ☐, No ☐ If no explain why:

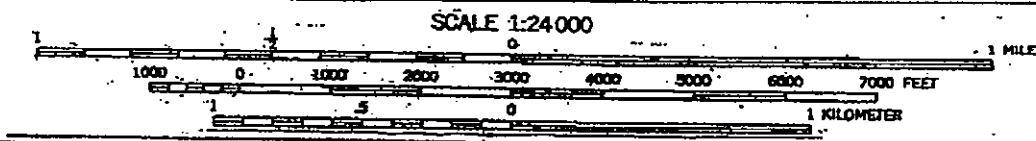
**TESTING & EXCAVATION LA NUMBER LOG** *(site form required)*

Tested LA number(s)	Excavated LA number(s)

# **Project Map** **BAS 12-09-01**



A location map for a proposed work area to clean up an oil spill for Plains All American LP. The project is located in the T 17S, R 31E, Section 23 SW ¼ NE ¼. Eddy County, New Mexico. USGS 7.5' minute series Quadrangle MALJAMAR, New Mexico (Prov. Ed. 1985) 32103-G7



## Appendix B

### Laboratory Analytical Reports

**Analytical Report 353698**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Loco Hills Station By Pass Line**

**2009-251**

**08-DEC-09**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-08-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87428), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX)

Xenco-Boca Raton (EPA Lab Code: FL00449): Florida (E86240),

South Carolina (96031001), Louisiana (04154), Georgia (917)



08-DEC-09

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

Reference: XENCO Report No: **353698**  
**Loco Hills Station By Pass Line**  
Project Address: Eddy County, NM

**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 353698. 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. 353698 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 353698



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

Loco Hills Station By Pass Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
NSW @ 8'	S	Nov-25-09 14:30		353698-001
ESW @ 8'	S	Nov-25-09 14:35		353698-002
WSW @ 8'	S	Nov-25-09 14:40		353698-003
SSW @ 8'	S	Nov-25-09 14:45		353698-004
Floor @ 10'	S	Nov-25-09 14:50		353698-005
WFP	S	Nov-25-09 14:55		353698-006
SFP	S	Nov-25-09 15:00		353698-007
Base Line SP	S	Nov-25-09 15:10		353698-008



## CASE NARRATIVE

**Client Name:** PLAINS ALL AMERICAN EH&S

**Project Name:** Loco Hills Station By Pass Line

**Project ID:** 2009-251

**Work Order Number:** 353698

**Report Date:** 08-DEC-09

**Date Received:** 11/27/2009

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

**Batch:** LBA-783756 Percent Moisture

None

**Batch:** LBA-783801 TPH by SW8015 Mod  
SW8015MOD\_NM

Batch 783801, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 353698-002.

**Batch:** LBA-784017 BTEX by EPA 8021  
SW8021BM

Batch 784017, Toluene recovered below QC limits in the Matrix Spike. Benzene, Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 353698-006, -002, -003, -007, -005, -001, -004.

The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Loco Hills Station By Pass Line*

*Project ID: 2009-251*

*Work Order Number: 353698*

*Report Date: 08-DEC-09*

*Date Received: 11/27/2009*

---

*Batch: LBA-784762 BTEX by EPA 8021*

*SW8021BM*

*Batch 784762, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.*

*Samples affected are: 353698-008.*

*The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits*

*SW8021BM*

*Batch 784762, 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis*

*Samples affected are: 353698-008.*



# Certificate of Analysis Summary 353698

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

### Project Name: Loco Hills Station By Pass Line

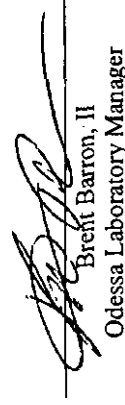


Project Id: 2009-251  
 Contact: Jason Henry  
 Project Location: Eddy County, NM  
 Date Received in Lab: Fri Nov-27-09 01:39 pm  
 Report Date: 08-DEC-09  
 Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	353698-001	353698-002	353698-003	353698-004	353698-005	353698-006
	Field Id: Depth: Matrix: Sampled:	NSW @ 8' SOIL Nov-25-09 14:30	ESW @ 8' SOIL Nov-25-09 14:35	WSW @ 8' SOIL Nov-25-09 14:40	SSW @ 8' SOIL Nov-25-09 14:45	Floor @ 10' SOIL Nov-25-09 14:50	WFP SOIL Nov-25-09 14:55
BTEX by EPA 8021	Extracted:	Dec-01-09 08:45	Dec-01-09 08:45	Dec-01-09 08:45	Dec-01-09 08:45	Dec-01-09 08:45	Dec-01-09 08:45
	Analyzed:	Dec-01-09 12:36	Dec-01-09 12:57	Dec-01-09 13:18	Dec-01-09 13:39	Dec-01-09 14:00	Dec-01-09 14:21
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
	Toluene	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0020
Percent Moisture	Ethylbenzene	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
	m,p-Xylenes	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0020
	o-Xylene	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
	Xylenes, Total	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
	Total BTEX	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0010
TPH by SW8015 Mod	Extracted:	Nov-30-09 17:00	Nov-30-09 17:00	Nov-30-09 17:00	Nov-30-09 17:00	Nov-30-09 17:00	Nov-30-09 17:00
	Analyzed:	Nov-30-09 16:00	Nov-30-09 16:00	Nov-30-09 16:00	Nov-30-09 16:00	Nov-30-09 16:00	Nov-30-09 16:00
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
	Percent Moisture	6.81 1.00	6.83 1.00	6.17 1.00	3.40 1.00	3.81 1.00	2.41 1.00
	C6-C12 Gasoline Range Hydrocarbons	ND 16.0	ND 16.1	ND 15.9	ND 15.5	ND 15.6	ND 15.3
Total TPH	C12-C28 Diesel Range Hydrocarbons	ND 16.0	45.2 16.1	ND 15.9	ND 15.5	ND 15.6	ND 15.3
	C28-C35 Oil Range Hydrocarbons	ND 16.0	ND 16.1	ND 15.9	ND 15.5	ND 15.6	ND 15.3
	Total TPH	ND 16.0	45.2 16.1	ND 15.9	ND 15.5	ND 15.6	ND 15.3

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, II  
 Odessa Laboratory Manager



# Certificate of Analysis Summary 353698

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

### Project Name: Loco Hills Station By Pass Line



Project Id: 2009-251  
Contact: Jason Henry  
Project Location: Eddy County, NM

Date Received in Lab: Fri Nov-27-09 01:39 pm  
Report Date: 08-DEC-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	353698-007	353698-008			
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL:	SFP SOIL Nov-25-09 15:00 Dec-01-09 08:45 Dec-01-09 14:42 mg/kg RL ND 0.0011 ND 0.0021 ND 0.0011 ND 0.0021 ND 0.0011 ND 0.0011 ND 0.0011	Base Line SP SOIL Nov-25-09 15:10 Dec-07-09 14:35 Dec-07-09 18:29 mg/kg RL ND 0.0106 0.2955 0.0211 2.464 0.0106 3.955 0.0211 1.879 0.0106 5.834 0.0106 8.594 0.0106			
BTEX by EPA 8021						
Benzene						
Toluene						
Ethylbenzene						
m,p-Xylenes						
o-Xylene						
Xylenes, Total						
Total BTEX						
Percent Moisture						
TPH by SW8015 Mod						
C6-C12 Gasoline Range Hydrocarbons						
C12-C28 Diesel Range Hydrocarbons						
C28-C35 Oil Range Hydrocarbons						
Total TPH						

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Brent Barron, II  
Odessa Laboratory Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116

## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 353698,

Project ID: 2009-251

Lab Batch #: 784017

Sample: 544531-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/01/09 09:25

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 784017

Sample: 544531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/01/09 09:46

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 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	0.0303	0.0300	101	80-120	

Lab Batch #: 784017

Sample: 544531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/01/09 12:15

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 784017

Sample: 353698-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 12:36

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 784017

Sample: 353698-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 12:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 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	0.0318	0.0300	106	80-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 353698,

Project ID: 2009-251

Lab Batch #: 784017

Sample: 353698-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 13:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 784017

Sample: 353698-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 13:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 784017

Sample: 353698-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 14:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 784017

Sample: 353698-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 14:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 784017

Sample: 353698-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 14:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 353698,

Project ID: 2009-251

Lab Batch #: 784017

Sample: 353698-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 20:43

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 784017

Sample: 353698-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 21:04

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 784762

Sample: 544968-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/09 15:24

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	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	0.0325	0.0300	108	80-120	

Lab Batch #: 784762

Sample: 544968-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/09 16:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 784762

Sample: 353698-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/09 18:29

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0931	0.0300	310	80-120	**

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 \cdot A / B$

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

## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 353698,

Project ID: 2009-251

Lab Batch #: 784762

Sample: 353806-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/09 19:59

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 784762

Sample: 353806-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/09 20:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0335	0.0300	112	80-120	

Lab Batch #: 783801

Sample: 544420-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/01/09 01:39

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	99.9	127	70-135	
o-Terphenyl	59.8	50.0	120	70-135	

Lab Batch #: 783801

Sample: 544420-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/01/09 02:05

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	124	99.7	124	70-135	
o-Terphenyl	53.9	49.9	108	70-135	

Lab Batch #: 783801

Sample: 544420-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/01/09 02:30

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.2	100	92	70-135	
o-Terphenyl	58.1	50.0	116	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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

## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 353698,

Project ID: 2009-251

Lab Batch #: 783801

Sample: 353698-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 03:48

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	99.6	88	70-135	
o-Terphenyl	55.1	49.8	111	70-135	

Lab Batch #: 783801

Sample: 353698-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 04:13

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.7	112	70-135	
o-Terphenyl	69.6	49.9	139	70-135	*

Lab Batch #: 783801

Sample: 353698-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 04:39

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.4	99.6	87	70-135	
o-Terphenyl	54.1	49.8	109	70-135	

Lab Batch #: 783801

Sample: 353698-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 05:05

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.3	100	86	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 783801

Sample: 353698-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 05:30

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.2	100	84	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits: data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 353698,

Project ID: 2009-251

Lab Batch #: 783801

Sample: 353698-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 05:56

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.6	99.5	82	70-135	
o-Terphenyl	49.8	49.8	100	70-135	

Lab Batch #: 783801

Sample: 353698-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 06:22

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.7	100	85	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 783801

Sample: 353698-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 06:47

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	63.7	50.0	127	70-135	

Lab Batch #: 783801

Sample: 353698-001 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 07:13

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.6	122	70-135	
o-Terphenyl	54.5	49.8	109	70-135	

Lab Batch #: 783801

Sample: 353698-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/01/09 07:39

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.9	125	70-135	
o-Terphenyl	58.1	50.0	116	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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



## Blank Spike Recovery



Project Name: Loco Hills Station By Pass Line

Work Order #: 353698

Project ID:

2009-251

Lab Batch #: 784762

Sample: 544968-1-BKS

Matrix: Solid

Date Analyzed: 12/07/2009

Date Prepared: 12/07/2009

Analyst: ASA

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.1000	0.0943	94	70-130	
Toluene	ND	0.1000	0.0979	98	70-130	
Ethylbenzene	0.0010	0.1000	0.0952	95	71-129	
m,p-Xylenes	ND	0.2000	0.1956	98	70-135	
o-Xylene	ND	0.1000	0.1027	103	71-133	

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

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

BRL - Below Reporting Limit

**Project Name: Loco Hills Station By Pass Line**

Work Order #: 353698

Analyst: ASA

Lab Batch ID: 784017

Sample: 544531-1-BKS

Units: mg/kg

Project ID: 2009-251

Date Analyzed: 12/01/2009

Batch #: 1

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	BTEX by EPA 8021										
	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	0.0928	93	0.1	0.0939	94	1	70-130	35	
Toluene	ND	0.1000	0.0947	95	0.1	0.0949	95	0	70-130	35	
Ethylbenzene	ND	0.1000	0.0920	92	0.1	0.0929	93	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.1973	99	0.2	0.1987	99	1	70-135	35	
o-Xylene	ND	0.1000	0.0988	99	0.1	0.0998	100	1	71-133	35	

Analyst: BEV

Lab Batch ID: 783801

Sample: 544420-1-BKS

Units: mg/kg

Date Prepared: 11/30/2009

Batch #: 1

Date Analyzed: 12/01/2009

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units: mg/kg	TPH by SW8015 Mod	Analytes	Blank Sample Result	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
			[A]	[B]	[C]	[D]	[E]	[F]	[G]				
			ND	999	934	93	997	930	93	0	70-135	35	
			ND	999	917	92	997	755	76	19	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

Work Order #: 353698

Lab Batch ID: 784017

Date Analyzed: 12/01/2009

Reporting Units: mg/kg

Project ID: 2009-251

QC- Sample ID: 353698-001 S

Date Prepared: 12/01/2009

Batch #: 1 Matrix: Soil

Analyst: ASA

Reporting Units: mg/kg												
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021  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	0.1073	0.0653	61	0.1073	0.0693	65	6	70-130	35	X
	Toluene	ND	0.1073	0.0740	69	0.1073	0.0749	70	1	70-130	35	X
	Ethylbenzene	ND	0.1073	0.0660	62	0.1073	0.0667	62	1	71-129	35	X
	m,p-Xylenes	ND	0.2146	0.1458	68	0.2146	0.1424	66	2	70-135	35	X
	o-Xylene	ND	0.1073	0.0743	69	0.1073	0.0724	67	3	71-133	35	X

Lab Batch ID: 784762

Date Analyzed: 12/07/2009

Reporting Units: mg/kg

QC- Sample ID: 353806-001 S

Date Prepared: 12/07/2009

Batch #: 1 Matrix: Soil

Analyst: ASA

Reporting Units: mg/kg												
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021  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	0.1187	0.0664	56	0.1184	0.0773	65	15	70-130	35	X
	Toluene	0.0172	0.1187	0.0589	35	0.1184	0.0649	40	10	70-130	35	X
	Ethylbenzene	ND	0.1187	0.0545	46	0.1184	0.0600	51	10	71-129	35	X
	m,p-Xylenes	ND	0.2374	0.1040	44	0.2369	0.1122	47	8	70-135	35	X
	o-Xylene	ND	0.1187	0.0604	51	0.1184	0.0660	56	9	71-133	35	X

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

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

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

Work Order # : 353698

Lab Batch ID: 783801

Date Analyzed: 12/01/2009

Reporting Units: mg/kg

Project ID: 2009-251

QC- Sample ID: 353698-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 11/30/2009

Analyst: BEV

Reporting Units: mg/kg											
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH by SW8015 Mod  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	C6-C12 Gasoline Range Hydrocarbons	ND	1070	1010	94	1070	990	93	2	70-135	35
	C12-C28 Diesel Range Hydrocarbons	ND	1070	772	72	1070	798	75	3	70-135	35

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

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

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: Loco Hills Station By Pass Line

Work Order #: 353698

Lab Batch #: 783756

Project ID: 2009-251

Date Analyzed: 11/30/2009

Date Prepared: 11/30/2009

Analyst: LATCOR

QC- Sample ID: 353696-001 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	6.90	7.55	9	20	

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



# Environmental Lab of Texas

## Variance/ Corrective Action Report- Sample Log-In

Client: Basin / Plains  
 Date/ Time: 11.27.09 13:39  
 Lab ID #: 353698  
 Initials: AL

### Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>4.1</u> °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present	
#5	Chain of Custody present?	<u>Yes</u>	No		
#6	Sample instructions complete of Chain of Custody?	<u>Yes</u>	No		
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No		
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No		
#11	Containers supplied by EL0T?	<u>Yes</u>	No		
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below	
#13	Samples properly preserved?	<u>Yes</u>	No	See Below	
#14	Sample bottles intact?	<u>Yes</u>	No		
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No		
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No		
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below	
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	Not Applicable	
#20	VOC samples have zero headspace?	<u>Yes</u>	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 356644**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Loco Hills Station By Pass Line**

**2009-251**

**30-DEC-09**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-08-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00308), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-08-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-08-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370-08-TX)

Xenco-Boca Raton (EPA Lab Code: FL00449): Florida (E86240),

South Carolina (96031001), Louisiana (04154), Georgia (917)



30-DEC-09

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

Reference: XENCO Report No: **356644**  
**Loco Hills Station By Pass Line**  
Project Address: Eddy County, NM

**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 356644. 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. 356644 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 356644



PLAINS ALL AMERICAN EH&S, Midland, TX

Loco Hills Station By Pass Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Blended	S	Dec-22-09 13:05		356644-001



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Loco Hills Station By Pass Line*

*Project ID: 2009-251*

*Work Order Number: 356644*

*Report Date: 30-DEC-09*

*Date Received: 12/23/2009*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-786928 Percent Moisture

None

Batch: LBA-787280 TPH by SW8015 Mod

None

Batch: LBA-787636 BTEX by EPA 8021

SW8021BM

Batch 787636, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 356644-001.



# Certificate of Analysis Summary 356644


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

Project Id: 2009-251      Date Received in Lab: Wed Dec-23-09 08:17 am  
Contact: Jason Henry      Report Date: 30-DEC-09  
Project Location: Eddy County, NM      Project Manager: Brent Barron, II  
Project Name: Loco Hills Station By Pass Line

Analysis Requested	Lab Id:	356644-001				
	Field Id:	Blended				
BTEX by EPA 8021	Depth:					
	Matrix:	SOIL				
	Sampled:	Dec-22-09 13:05				
	Extracted:	Dec-29-09 11:00				
	Analyzed:	Dec-29-09 15:37				
Benzene	Units/RL:	mg/kg RL				
		ND 0.0010				
		ND 0.0021				
		0.0130 0.0010				
		0.1697 0.0021				
Ethylbenzene		0.1180 0.0010				
		0.2877 0.0010				
		0.3007 0.0010				
m,p-Xylenes						
o-Xylene						
Xylenes, Total						
Total BTEX						
Percent Moisture						
TPH by SW8015 Mod						
C6-C12 Gasoline Range Hydrocarbons						
C12-C28 Diesel Range Hydrocarbons						
C28-C35 Oil Range Hydrocarbons						
Total TPH						

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, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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



## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 356644,

Project ID: 2009-251

Lab Batch #: 787636

Sample: 546631-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/29/09 08:43

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 787636

Sample: 546631-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/29/09 09:07

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 787636

Sample: 546631-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/29/09 10:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 787636

Sample: 356644-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/09 15:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 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	0.1633	0.0300	544	80-120	*

Lab Batch #: 787636

Sample: 357001-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/09 22:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021 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	0.0302	0.0300	101	80-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 \times A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 356644,

Project ID: 2009-251

Lab Batch #: 787636

Sample: 357001-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/09 23:05

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 787280

Sample: 546413-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/09 13:25

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	117	99.8	117	70-135	
o-Terphenyl	54.5	49.9	109	70-135	

Lab Batch #: 787280

Sample: 546413-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/09 13:52

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	119	99.5	120	70-135	
o-Terphenyl	55.1	49.8	111	70-135	

Lab Batch #: 787280

Sample: 546413-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/09 14:19

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	57.2	50.0	114	70-135	

Lab Batch #: 787280

Sample: 356644-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/09 17:54

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	99.8	113	70-135	
o-Terphenyl	57.9	49.9	116	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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





## Form 2 - Surrogate Recoveries

Project Name: Loco Hills Station By Pass Line

Work Orders : 356644,

Project ID: 2009-251

Lab Batch #: 787280

Sample: 356667-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/09 22:17

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	55.7	50.0	111	70-135	

Lab Batch #: 787280

Sample: 356667-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/09 22:43

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	55.5	50.0	111	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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

**Project Name:** Loco Hills Station By Pass Line

**Work Order #:** 356644

**Analyst:** ASA

**Lab Batch ID:** 787636

**Sample:** 546631-1-BKS

**Batch #:** 1

**Date Prepared:** 12/29/2009

**Project ID:** 2009-251

**Date Analyzed:** 12/29/2009

**Matrix:** Solid

**Units:** mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021		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												
Benzene		ND	0.1000	0.1014	101	0.1	0.1089	109	7	70-130	35	
Toluene		ND	0.1000	0.1047	105	0.1	0.1123	112	7	70-130	35	
Ethylbenzene		ND	0.1000	0.1049	105	0.1	0.1121	112	7	71-129	35	
m,p-Xylenes		ND	0.2000	0.2315	116	0.2	0.2467	123	6	70-135	35	
o-Xylene		ND	0.1000	0.1157	116	0.1	0.1234	123	6	71-133	35	

**Analyst:** BEV

**Lab Batch ID:** 787280

**Sample:** 546413-1-BKS

**Date Prepared:** 12/23/2009

**Batch #:** 1

**Date Analyzed:** 12/25/2009

**Matrix:** Solid

**Units:** mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH by SW8015 Mod		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												
C6-C12 Gasoline Range Hydrocarbons		ND	998	966	97	995	958	96	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons		ND	998	703	70	995	767	77	9	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

Work Order # : 356644

Lab Batch ID: 787636

Date Analyzed: 12/29/2009

Reporting Units: mg/kg

Project ID: 2009-251

QC- Sample ID: 357001-006 S

Batch #: 1 Matrix: Soil

Date Prepared: 12/29/2009

Analyst: ASA

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY**

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										Flag
	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	
BTEX by EPA 8021											
Benzene	ND	0.1039	0.0798	77	0.1031	0.0855	83	7	70-130	35	
Toluene	ND	0.1039	0.0796	77	0.1031	0.0857	83	7	70-130	35	
Ethylbenzene	ND	0.1039	0.0739	71	0.1031	0.0807	78	9	71-129	35	
m,p-Xylenes	ND	0.2079	0.1605	77	0.2062	0.1742	84	8	70-135	35	
o-Xylene	ND	0.1039	0.0774	74	0.1031	0.0847	82	9	71-133	35	

Lab Batch ID: 787280

Date Analyzed: 12/25/2009

Reporting Units: mg/kg

QC- Sample ID: 356667-002 S

Batch #: 1 Matrix: Soil

Date Prepared: 12/23/2009

Analyst: BEV

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY**

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										Flag
	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	
TPH by SW8015 Mod											
C6-C12 Gasoline Range Hydrocarbons	ND	1070	1040	97	1070	1030	96	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	28.8	1070	842	76	1070	843	76	0	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:** Loco Hills Station By Pass Line

**Work Order #:** 356644

**Lab Batch #:** 786928

**Project ID:** 2009-251

**Date Analyzed:** 12/23/2009

**Date Prepared:** 12/23/2009

**Analyst:** MOV

**QC- Sample ID:** 356606-001 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	7.64	7.71	1	20	

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

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

BRL - Below Reporting Limit

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

**12600 West I-20 East  
Odessa, Texas 79785**

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

cstanley@basinenv.com

402 C. g.

# Environmental Lab of Texas

## Variance/ Corrective Action Report- Sample Log-In

Client: Basin Environmental/Plains

Date/ Time: 12/23/09 8:17

Lab ID #: 350644

Initials: AS

### Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<u>Yes</u>	No	2.6 °C
#2	Shipping container in good condition?	<u>Yes</u>	No	
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<u>Not Present</u>
#4	Custody Seals intact on sample bottles/ container?	<u>Yes</u>	No	Not Present
#5	Chain of Custody present?	<u>Yes</u>	No	
#6	Sample Instructions complete of Chain of Custody?	<u>Yes</u>	No	
#7	Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No	
#8	Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No	
#11	Containers supplied by ELOT?	<u>Yes</u>	No	
#12	Samples in proper container/ bottle?	<u>Yes</u>	No	See Below
#13	Samples properly preserved?	<u>Yes</u>	No	See Below
#14	Sample bottles intact?	<u>Yes</u>	No	
#15	Preservations documented on Chain of Custody?	<u>Yes</u>	No	
#16	Containers documented on Chain of Custody?	<u>Yes</u>	No	
#17	Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below
#18	All samples received within sufficient hold time?	<u>Yes</u>	No	See Below
#19	Subcontract of sample(s)?	<u>Yes</u>	<u>No</u>	Not Applicable
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable

### Variance Documentation

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

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

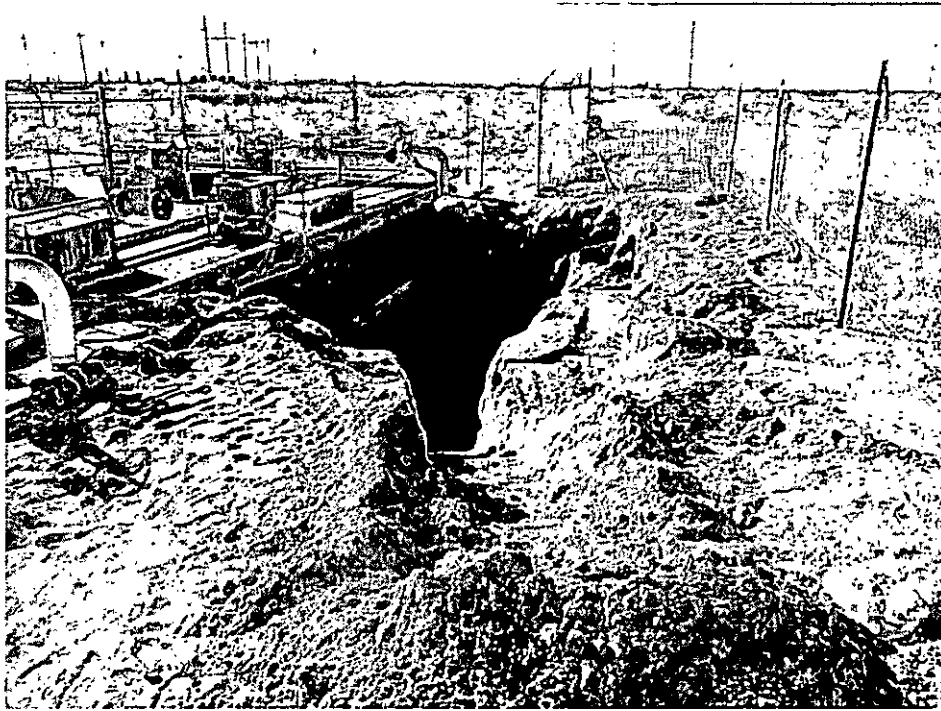
Corrective Action Taken: \_\_\_\_\_

Check all that Apply:

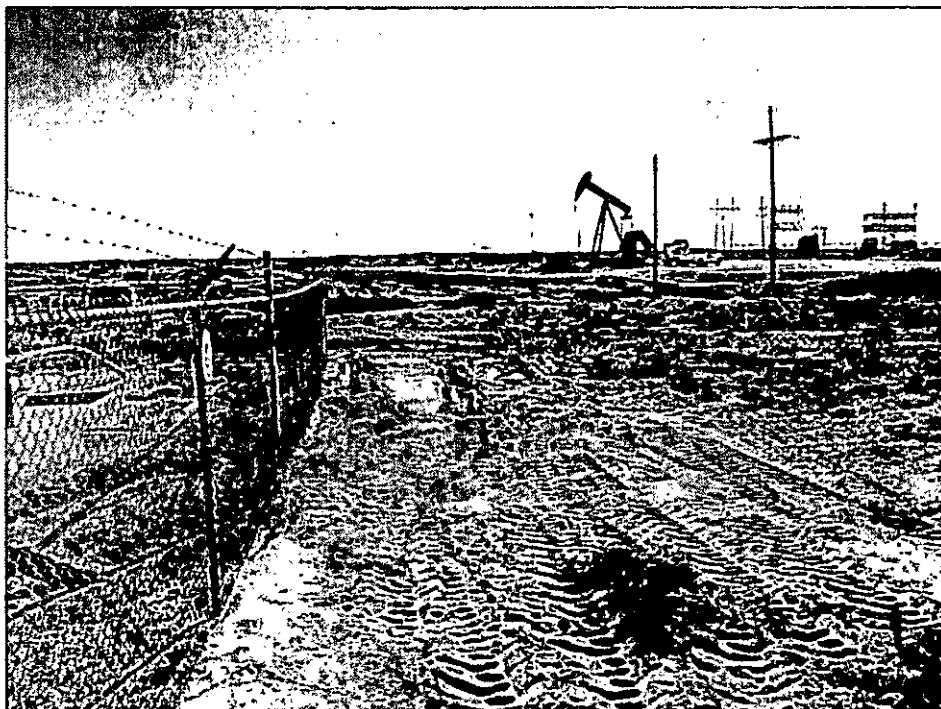
- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

## Appendix C

### Photographs



Loco Hill Station Bypass Line Excavation, looking west

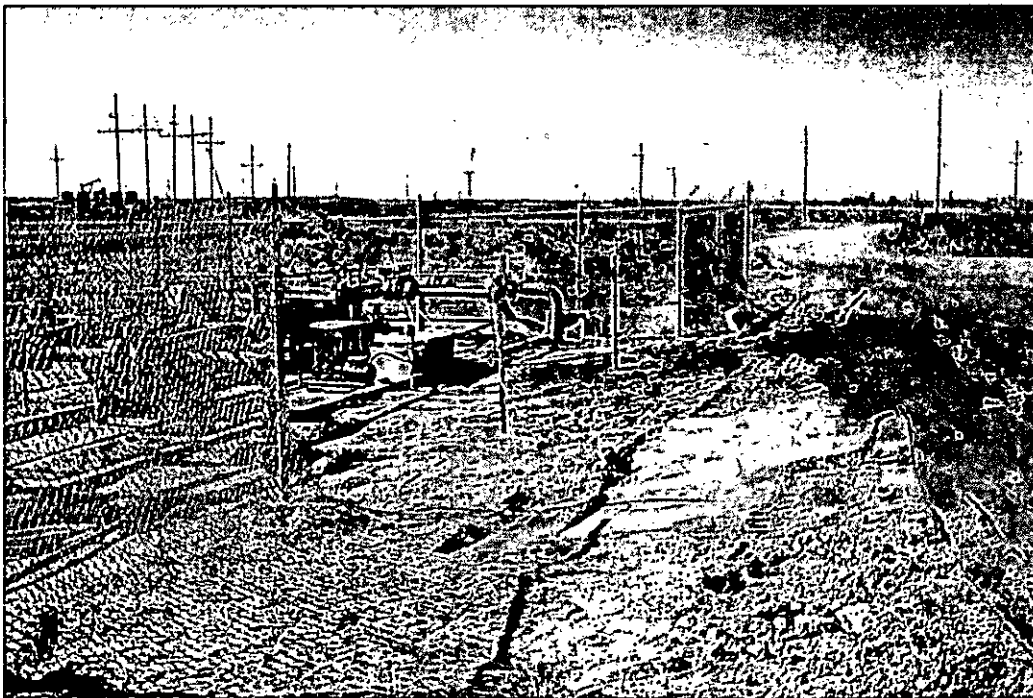


Loco Hill Station Bypass Line west flowpath, looking south





Loco Hills Station Bypass Line, south flowpath backfilled, looking west

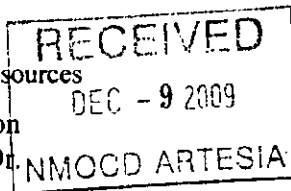


Loco Hills Station Bypass Line, excavation backfilled and water packed, looking west

Appendix D  
Release Notification and Corrective Action  
(Form C-141)

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

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505



Form C-141  
Revised October 10, 2003

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

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Plains Pipeline, LP	Contact	Jason Henry
Address	2530 Hwy 214 - Denver City, Tx 79323	Telephone No.	(575) 441-1099
Facility Name	Loco Hills Station Bypass Line	Facility Type	Pipeline
Surface Owner	BLM	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
G	23	17S	31E					Eddy

Latitude N 32° 49' 23.4" Longitude W 103° 50' 15.6"

#### NATURE OF RELEASE

Type of Release	Crude Oil	Volume of Release	35 bbls	Volume Recovered	25 bbls
Source of Release	4" Steel Bypass Line	Date and Hour of Occurrence	11/19/2009	Date and Hour of Discovery	11/19/2009 11:00
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Verbal notification to Mike Bratcher on 11/20/2009		
By Whom?	Jason Henry	Date and Hour	11/20/2009 @ 10:30		
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.\*

Describe Cause of Problem and Remedial Action Taken.\*

Internal corrosion of a 4-inch bypass line resulted in a release of crude oil, the free product was recovered with a vacuum truck, and the impacted soil has been excavated and stockpiled.

Describe Area Affected and Cleanup Action Taken.\*

The released crude resulted in a surface stain that measured approximately 40' x 30'. The impacted area will be remediated per applicable BLM/NMOCD guidelines.

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.

#### OIL CONSERVATION DIVISION

Signature:	Approved by District Supervisor:		
Printed Name: Jason Henry			
Title: Remediation Coordinator	Approval Date:	Expiration Date:	
E-mail Address: jhenry@paalp.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 12/09/2009	Phone: (575) 441-1099		

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

RECEIVED

MAR 16 2010

NMOCD ARTESIA

Form C-141  
Revised October 10, 2003

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	Loco Hills Station Bypass Line	Facility Type	Pipeline
Surface Owner	BLM	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
G	23	17S	31E					Eddy

Latitude N 32° 49' 23.4" Longitude W 103° 50' 15.6"

NATURE OF RELEASE

Type of Release	Crude Oil	Volume of Release	35 bbls	Volume Recovered	25 bbls
Source of Release	4" Steel Bypass Line	Date and Hour of Occurrence	11/19/2009	Date and Hour of Discovery	11/19/2009 11:00
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Verbal notification to Mike Bratcher on 11/20/2009		
By Whom?	Jason Henry	Date and Hour	11/20/2009 @ 10:30		
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.\*

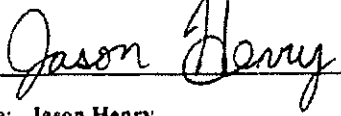
Describe Cause of Problem and Remedial Action Taken.\*

Internal corrosion of a 4-inch bypass line resulted in a release of crude oil, the free product was recovered with a vacuum truck, and the impacted soil was excavated, stockpiled, and remediated on-site. The excavated area was backfilled with the remediated stockpile.

Describe Area Affected and Cleanup Action Taken.\*

The released crude resulted in a surface stain that measured approximately 40' x 30'. The impacted area was remediated per applicable BLM/NMOCD guidelines. Please see the attached Basin Environmental Consulting Remediation Summary and Site Closure Request 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: 	OIL CONSERVATION DIVISION		
Printed Name: Jason Henry	Approved by District Supervisor:		
Title: Remediation Coordinator	Approval Date:	Expiration Date:	
E-mail Address: jhenry@paalp.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 02/26/2010	Phone: (575) 441-1099		

\* Attach Additional Sheets If Necessary