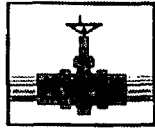


AP - 96

# STAGE 2 WORKPLANS

Date:

August 2010



**PLAINS**  
PIPELINE, L.P.

August 6, 2010

Mr. Edward Hansen  
New Mexico Oil Conservation Division  
Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

RECEIVED

AUG - 9 2010

Environmental Bureau  
Oil Conservation Division

RE: Plains Pipeline, L.P. Lovington Gathering WTI  
NMOCD Reference # 1R-838 / AP-96  
Unit Letter H of Section 6, Township 17 South, Range 37 East  
Lea County, New Mexico

Dear Mr. Hansen:

Plains Pipeline, L.P. is pleased to submit the attached *Amendment to Stage 2 Abatement Plan*, dated August 2010, for the Lovington Gathering WTI site. This site is located in Section 6 of Township 17 South, and Range 37 East of Lea County, New Mexico. This document details the site groundwater remediation activities performed to date and provides a proposed strategy for conducting future groundwater remediation activities.

Should you have any questions or comments, please contact me at (575) 441-1099.

Sincerely,

Jason Henry  
Remediation Coordinator  
Plains Pipeline, L.P.

CC: Larry Johnson, NMOCD, Hobbs Office

Enclosure

# *Basin Environmental Consulting, LLC*

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



## **AMENDMENT TO STAGE 2 ABATEMENT PLAN**

**PLAINS PIPELINE, L.P. (231735)  
Lovington Gathering WTI  
Lea County, New Mexico  
Plains SRS # 2006-142**

**UNIT LTR "H" (SE/NE), Section 6, Township 17 South, Range 37 East  
Latitude 32° 51' 56.0" North, Longitude 103° 17' 07.2" West  
NMOCD Reference # 1RP-838 / AP-96**

RECEIVED

AUG - 9 2010  
Environmental Bureau  
Oil Conservation Division

Prepared For:

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

Prepared By:  
Basin Environmental Consulting, LLC  
2800 Plains Highway  
Lovington, New Mexico 88260

**August 2010**

Joel W. Lowry  
Project Manager

Camille J. Bryant  
Project Manager

## TABLE OF CONTENTS

1.0	INTRODUCTION AND BACKGROUND INFORMATION.....	1
2.0	SUMMARY OF FIELD ACTIVITIES.....	1
3.0	GROUNDWATER MONITORING.....	2
4.0	ABATEMENT OPTIONS.....	5
5.0	SUMMARY AND CONCLUSIONS .....	7
6.0	QA/QC PROCEDURES .....	7
6.1	Groundwater Sampling .....	7
6.2	Decontamination of Equipment .....	8
6.3	Laboratory Protocol .....	8
7.0	LIMITATIONS.....	8
8.0	DISTRUBUTION.....	9

## FIGURES

Figure 1 – Site Location Map

Figure 2A – Inferred Groundwater Gradient Map March 4, 2010

Figure 2B – Inferred Groundwater Gradient Map May 25, 2010

Figure 3A –Groundwater Concentration Map March 4, 2010

Figure 3B –Groundwater Concentration Map May 25, 2010

## TABLES

Table 1 – Groundwater Elevation Data

Table 2 – Concentrations of Benzene and BTEX in Groundwater

Table 3 – Concentrations of Poly Aromatic Hydrocarbons in Groundwater

Table 4 – Concentrations of Volatile Organic Compounds in Groundwater

Table 5 – Concentrations of RCRA and NMWQCC Metals in Groundwater

Table 6 – Concentrations of Anions/Cations in Groundwater

## APPENDICES

Appendix A – Laboratory Analytical Reports

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



## **1.0 INTRODUCTION AND BACKGROUND INFORMATION**

Basin Environmental Consulting, LLC (Basin), on behalf of Plains Pipeline, L.P., (Plains), has prepared this Amendment to Stage 2 Abatement Plan in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 2010, requiring submittal of an Amended Stage 2 Abatement Plan by August 9, 2010. This Amendment to the Stage 2 Abatement Plan is intended to be viewed as a complete document with text, figures, tables, and appendices. This plan presents abatement options and proposed actions to address dissolved phase issues, as well as recent field activities and the results of the quarterly groundwater monitoring events. Site activities and remedial work are summarized in several letters and reports previously submitted to the NMOCD. Additional remedial actions and soil remediation activities conducted to advance the remedial site toward an NMOCD approved risk based closure will be addressed under a separate cover and submitted to the NMOCD upon completion. For reference, the Site Location Map is provided as Figure 1.

The legal description of the site is SE¼, NE¼ Section 6, Township 17 South, Range 37 East. The site latitude is 32° 51' 56.0" North and the site longitude is 103° 17' 07.2" West. On April 21, 2006, Basin responded to a pipeline release on behalf of Plains, to repair the pipeline and excavate the impacted soil. The Lovington Gathering WTI pipeline was repaired utilizing a pipeline clamp and the visually stained soil was excavated and placed on 6-mil plastic sheeting to mitigate hydrocarbon impact to the underlying soil. The Release Notification and Corrective Action (Form C-141) indicated approximately twelve (12) barrels of crude oil was released from the Plains pipeline and eight (8) barrels were recovered, resulting in a net loss of four (4) barrels of crude oil. The excavated area was fenced and is characterized by a Plains pipeline right-of-way adjacent to an idled Plains pump station; the release occurred in a pasture containing various oil and gas production facilities. The release resulted in a surface stain measuring approximately thirty (30) feet in length by twenty-seven (27) feet in width.

At the request of the NMOCD, initial groundwater monitoring was conducted during the third quarter of 2006 to assess any potential groundwater impact from dissolved phase benzene, toluene, ethylbenzene, and xylene (BTEX) constituents. Groundwater monitoring events consist of measuring static water levels in the monitoring wells, checking for the presence of phase-separated hydrocarbons (PSH) atop the water column, and purging and sampling of each well exhibiting sufficient recharge. Based on the results of the initial monitoring and sampling event, Plains placed this site on a quarterly groundwater monitoring program.

## **2.0 SUMMARY OF FIELD ACTIVITIES**

In July 2006, a soil investigation was conducted to delineate the horizontal and vertical extent of the on-site hydrocarbon impact, eleven (11) soil borings were advanced to a depth of approximately thirty (30) to seventy-five (75) feet below ground surface (bgs). Based on the laboratory results of the soil samples collected during advancement of the soil borings; three (3) groundwater monitor wells (MW-1, MW-2 and MW-3) were installed to evaluate the status of the groundwater.

Based on the laboratory results from the initial groundwater sampling event in October 2006, four (4) additional monitor wells (MW-4 through MW-7) were installed in November 2006. During the installation of the groundwater monitor wells (MW-4 through MW-7) there was no

visual evidence of PSH in any of the collected soil samples. The analytical results of groundwater sampling at monitor well MW-7 indicated additional monitor wells were required to fully delineate the down gradient boundary of the dissolved phase plume. Between February 7, 2007, and October 28, 2009, three (3) additional monitor wells (MW-8 through MW-10) were installed to further delineate the down gradient boundary of the dissolved phase plume. Details of the comprehensive soil and groundwater investigation were present to the NMOCD in the *Stage 1 and Stage 2 Abatement Plan*, dated August 2008.

### 3.0 GROUNDWATER MONITORING

The depth to groundwater at the Lovington Gathering WTI release site is approximately eighty-three (83) feet bgs. All site monitor wells are gauged and sampled on a quarterly basis. No PSH has been observed at any of the on-site monitor wells. Each well is monitored for the presence of PSH and depth to groundwater. All groundwater monitor wells are purged and sampled for dissolved phase BTEX constituents utilizing method EPA SW 846-8021B. Additionally, each monitor well is sampled annually for concentrations of poly aromatic hydrocarbons (PAH) compounds utilizing method EPA SW 846-8270C. Groundwater sampling methodology is described in Section 6.1 Groundwater Sampling of this Amendment to Stage 2 Abatement Plan. The quarterly groundwater monitoring data is compiled and summarized in an *Annual Monitoring Report*, which is submitted to the NMOCD on April 1<sup>st</sup> of each year.

**Monitor Well MW-1** was installed October 11, 2006, to a depth of approximately ninety (90) feet. It is located in a up gradient position approximately sixty (60) feet northwest of the release point. Quarterly sampling of monitor well MW-1 began in October 2006. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since October 2006. Benzene concentrations have remained less than the NMOCD regulatory standard during each quarter with the exception of the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2008, when groundwater samples exhibited benzene concentrations of 0.020 mg/L and 0.035 mg/L, respectively. Benzene concentrations have remained below the laboratory method detection limit (MDL) and NMOCD regulatory standards during each of the last six (6) quarters. PAH concentrations were below the MDL for each constituent during the annually sampling events in 2008 and 2009. Please reference Table 2; Concentration of Benzene and BTEX in Groundwater, for a complete list of analytical results. Concentrations of Poly Aromatic Hydrocarbons (Semi-Volatile) Compounds in Groundwater are provided in Table 3.

**Monitor Well MW-2** was installed October 11, 2006, to a depth of approximately ninety (90) feet. It is located in down gradient position approximately sixty (60) feet southeast the release point. Quarterly sampling of monitor well MW-2 began in October 2006. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since October 2006. Benzene concentrations ranged from 0.928 mg/L during the 4<sup>th</sup> quarter of 2007 to 0.0023 mg/L during 2<sup>nd</sup> quarter of 2010. Benzene concentrations have remained below NMOCD regulatory standards during each of the last two (2) quarters. PAH concentrations were below the MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-3** was installed October 11, 2006, to a depth of approximately ninety (90) feet. It is located in a down gradient position approximately one hundred fifteen (115) feet southeast of the release point. Quarterly sampling of monitor well MW-3 began in October 2006. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since October 2006. Benzene concentrations ranged from 6.60 mg/L during the 3<sup>rd</sup> quarter of 2006 to less than 0.0010 mg/L during the 4<sup>th</sup> quarter of 2009. Laboratory analytical results from the most recent quarterly sampling event indicated the benzene concentration was 0.0109 mg/L. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-4** was installed November 27, 2006, to a depth of approximately ninety (90) feet. It is located in an up and cross gradient position approximately one hundred twenty (120) feet west of the release point. Quarterly sampling of monitor well MW-4 began in December 2006. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of benzene, toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since December 2006. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-5** was installed November 27, 2006 to a depth of approximately ninety (90) feet. It is located in an up and cross gradient position approximately one hundred ninety (190) feet east of the release point. Quarterly sampling of monitor well MW-5 began in December 2006. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of benzene, toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since December 2006. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-6** was installed November 27, 2006, to a depth of approximately ninety (90) feet. It is located in a down gradient position approximately one hundred ninety (190) feet southeast of the release point. Quarterly sampling of monitor well MW-6 began in December 2006. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since December 2006. Benzene concentrations have ranged from less than 0.001 mg/L during the 3<sup>rd</sup> quarter of 2006 through the 1<sup>st</sup> quarter of 2009 to 0.013 mg/L during the 4<sup>th</sup> quarter of 2009. Benzene concentrations have remained below the laboratory MDL during each of the last two (2) quarters. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-7** was installed November 28, 2006, to a depth of approximately ninety (90) feet. It is located in a down gradient position approximately two hundred sixty (260) feet southeast of the release point. Quarterly sampling of monitor well MW-7 began in December 2006. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since December of 2006. Benzene concentrations have ranged from 0.138 mg/L during the 2<sup>nd</sup> quarter of 2008 to less than 0.001 mg/L during each of

the last three (3) quarters. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-8** was installed February 7, 2007, to a depth of approximately ninety (90) feet. It is located in a down gradient position approximately three hundred eighty (380) feet east southeast of the release point. Quarterly sampling of monitor well MW-8 began in March 2007. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since March 2007. Benzene concentrations ranged from 0.568 mg/L during the 3<sup>rd</sup> quarter of 2008 to less than 0.0010 mg/L during each quarter of 2007, the 4<sup>th</sup> quarter of 2009 and the 1<sup>st</sup> quarter of 2010. Laboratory analytical results from the most recent quarterly sampling event indicated the benzene concentration was 0.0012 mg/L. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-9** was installed August 13, 2007, to a depth of approximately ninety (90) feet. It is located in a down gradient position approximately three hundred ninety (390) feet southeast of the release point. Quarterly sampling of monitor well MW-9 began in September 2007. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the NMOCD regulatory standard during each quarter since September 2007. Benzene concentrations ranged from 1.838 mg/L during the 3<sup>rd</sup> quarter of 2009 to less than 0.0010 mg/L during the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2007, each quarter of 2008, the 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> quarters of 2009. Laboratory analytical results from the most recent quarterly sampling event indicated the benzene concentration was 0.0421 mg/L. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling events in 2008 and 2009.

**Monitor Well MW-10** was installed October 28, 2009, to a depth of approximately ninety (90) feet. It is located in a down gradient position approximately four hundred seventy (470) feet southeast of the release point. Quarterly sampling of monitor well MW-10 began in November 2009. Laboratory analytical results from quarterly groundwater sampling indicate concentrations of benzene toluene, ethylbenzene, m,p-xylenes and o-xylenes have remained less than the appropriate laboratory MDL and the NMOCD regulatory standard during each quarter since November 2009. PAH concentrations were below the laboratory MDL for each constituent during the annual sampling event in 2009. Monitor well MW-10 was also analyzed for concentrations of volatile organic compounds (VOCs) utilizing method EPA SW846 8260B, RCRA and NMWQCC Metals utilizing method EPA SW846-6020A, EPA 7470A, and anions/cations utilizing methods EPA SW375.4, 325.3, 310, 160.1 and SW846 6010B. Laboratory analytical results indicated concentrations of VOCs were below the laboratory MDL for each constituent. Laboratory analytical results indicated RCRA and NMWQCC metals were below the laboratory MDL for each constituent with the exception of chromium which had a concentration of 0.053 mg/L. Laboratory analytical results indicated anion/cation concentrations were below NMOCD regulatory standards with the exception of fluoride, which had concentration of 9.27 mg/L. Please reference Table 4 Concentrations of Volatile Organic Compounds in Groundwater, Table 5 Concentrations of RCRA and NMWQCC Metals in Groundwater and Table 6 Concentrations of Anions/Cations in Groundwater for laboratory analytical results.

#### 4.0 ABATEMENT OPTIONS

On May 27, 2010, the site monitor wells were gauged and sampled during the scheduled 2<sup>nd</sup> Quarter 2010 sampling event. The 2<sup>nd</sup> quarter groundwater gauging data was plotted and an inferred groundwater gradient map was constructed. The data indicates the groundwater gradient at the site is approximately 0.0019 feet/foot to the southeast as measured between monitor well MW-1 and MW-9. Please reference Table 2 for Groundwater Elevation Data and Figures 2A and 2B for the 2010 Inferred Groundwater Gradient Maps.

The release site is currently impacted by dissolved phase BTEX constituents in two (2) of the on-site monitor wells (MW-3 and MW-9). Currently, each of the ten monitor wells is gauged and sampled quarterly and monitor well MW-9 is gauged and manually pumped bi-weekly. Please reference the 2010 Groundwater Concentration Maps provided as Figures 3A and 3B.

Currently, the analytical results indicate the dissolved phase BTEX plume appears to be stable and horizontally delineated and no additional monitor well installations are anticipated at this time. Abatement of the impacted on-site groundwater is technically feasible utilizing the following technologies:

- Groundwater Pump and Treat System
- Air Sparging
- Monitored Natural Attenuation / Long Term Groundwater Monitoring
- Groundwater Pump and Disposal

Pump and Treat technology employs groundwater withdraw, combined with an air stripping system to remove dissolved BTEX constituents from the groundwater. Hydraulic conductivity values expected from the loose, unconsolidated sands found in the area should support a relatively expanded range of groundwater withdrawal rates. As the project matures, withdrawal rates are varied in response to shifting contaminant of concern concentration foci in an effort to maximize system utilization. The primary exclusion factors concerning this type of treatment technology are the extended length of system operation time required to achieve site cleanup goals and the large quantities of effluent produced requiring off-site disposal or injection back into the aquifer materials. Aerated effluent water could be injected back into the formation in up gradient locations to enhance aquifer-flushing action. The injected water would also carry oxygen to the subsurface, promoting biodegradation.

Air Sparging remediates the groundwater by stripping or volatilizing the BTEX constituents from the dissolved phase and increases in-situ biodegradation by the addition of oxygen to the impacted groundwater. As BTEX constituents are liberated from the aqueous phase and enter the gas phase, they migrate to the capillary fringe and subsequently the vadose zone. This treatment technique effectively removes BTEX constituents from the saturated and vadose zones and also restricts continued plume migration. A long-term groundwater monitoring program would be conducted to confirm plume stabilization and to monitor dissolved phase BTEX constituents. A single injection well pilot test is conducted to test the applicability of this remedial technology. A skid mounted compressor as well as vadose zone monitor wells are utilized for pilot testing purposes. The following in-situ parameters are monitored during pilot testing: soil gas

concentrations of BTEX constituents, soil gas pressure and groundwater level measurements. The following in-situ parameters are monitored after the air injection ceases: dissolved phase BTEX concentration, dissolved oxygen levels, temperature, and Redox potential/pH. Installations of injection wells across areas of effected groundwater are conducted incrementally to optimize the well field configuration. The 2-inch, schedule 40 PVC injection wells penetrate the saturated zone with approximately 5 feet of fully immersed 0.020-inch slotted pipe. Air compressors are utilized to generate the required air pressure for injection purposes. On the surface, the wells are piped to an activated carbon filtering system for effluent gas treatment prior to atmospheric discharge. A moisture knock out pot is installed down line of the effluent piping manifold to prevent moisture from entering the carbon treatment unit. Air Sparging generally consists of a compressor, pressure regulator, pressure gauges, flow meters, vacuum blower, and component isolation ball valves. In-situ system operating parameters which are monitored during system operation include: soil gas concentrations of BTEX constituents, injection well pressure and flow rate, weekly oxygen, carbon dioxide, nitrogen and methane concentrations and the pulsing frequency. Data derived from pilot testing is utilized to design the final system configuration.

Monitored Natural Attenuation / Long Term Groundwater Monitoring technology (NA/LT) relies on naturally occurring processes such as dispersion, diffusion, sorption and degradation (either biodegradation or abiotic processes such as hydrolysis), volatilization and dilution to control plume movement and destruction of dissolved phase hydrocarbons in the groundwater. Volatilization and diffusion are relatively unimportant in most non-clay groundwater systems; therefore, the main attenuation processes active are dispersion, sorption, degradation and dilution. Dispersion is subsurface mixing due to groundwater movement and aquifer heterogeneities. Vertical dispersion is not common at sites impacted with light non-aqueous phase liquids such as crude oil so this component may also be disregarded. Sorption is a nondestructive process in which hydrocarbon compounds are sorbed to the aquifer matrix, represented by a retardation factor. Sorption operates as an attenuation process by effectively reducing the mass available to the dissolved phase plume. Biodegradation involves chemical transformation of the hydrocarbon constituents into mineralized end products, for instance CO<sub>2</sub>, H<sub>2</sub>O and salts, by living organisms. Occasionally, metabolic activity does change the chemical form of the hydrocarbon constituents but does not conclude with mineralization; this is referred to as biotransformation. Of particular importance in this pathway of attenuation is the determination of whether the impacted area is controlled by either anaerobic or aerobic conditions. Aerobic conditions exist under relatively oxygen rich environments resulting in compounds being formed through the reaction of available oxygen and dissolved phase hydrocarbons transforming into H<sub>2</sub>O. Anaerobic conditions are relatively oxygen poor environments and result in transformations into nitrate, ferric iron, sulfate and carbon dioxide products. Dilution is mixing of the plume with groundwater flowing through the affected area. It becomes an important process in natural attenuation when the impacted groundwater enters a zone where significant surface recharge enters the impacted aquifer. Geochemical indicators and concentration migration rate calculations will be utilized to determine if dissolved phase hydrocarbons are susceptible to natural attenuation on a site-specific basis. NA/LT technologies can be combined with passive groundwater remediation technologies, such as Isoc® technology, which are designed to enhance natural attenuation of impacted groundwater.

Groundwater Pump and disposal technology consists of pumping impacted water from selected monitor wells in an effort to remove dissolved phase BTEX constituents from groundwater and mitigate the migration of the dissolved phase plume. This method of treatment employs groundwater withdraw and consist of using an electronic Grundfos® Pump to recover impacted groundwater. Monitor wells are gauged before, during and after pumping. Impacted water is pumped into a 500 gallon trailer mounted polystyrene tank and transported off-site to an NMOCD approved disposal facility. The primary exclusion factors concerning this method of treatment technology are the extended length of time required to achieve site cleanup goals and the large quantities of effluent produced which must be transported off-site to an approved disposal facility.

## **5.0 SUMMARY AND CONCLUSIONS**

Currently, ten (10) monitor wells are located on site and two (2) monitor wells exhibited dissolved phase BTEX constituent concentrations in excess of the NMOCD regulatory standard during the last quarter. The laboratory analytical results indicate the dissolved phase BTEX plume appears to be stable and horizontally delineated and no additional monitor well installations are anticipated at this time.

Pumping and disposal technology conducted in conjunction with Monitored Natural Attenuation / Long Term Groundwater Monitoring is the most feasible treatment alternative at this time. Currently, pumping is conducted bi-weekly at the Lovington Gathering WTI release site and appears to be effective in controlling the down gradient migration of the dissolved phase plume. This treatment method consists of pumping and removing approximately one thousand (1,000) gallons of impacted water per week from selected monitor wells. The impacted groundwater is transported off-site to an NMOCD approved disposal facility. The release site will be monitored and sampled on a quarterly schedule and the data will be used to monitor the migration and natural attenuation of the dissolved phase plume. Activities and results from quarterly groundwater monitoring events will be compiled in the *Annual Monitoring Report* which will be submitted to the NMOCD by April 1<sup>st</sup> of each year.

## **6.0 QA/QC PROCEDURES**

### **6.1 Groundwater Sampling**

After purging the wells, groundwater samples are collected with a disposable Teflon sampler and polyethylene line by personnel wearing clean, disposable gloves.

Groundwater samples collected for BTEX analysis are placed in 40 ml glass VOA vials equipped with Teflon lined caps, which are provided by the analytical laboratory. The vials are filled to a positive meniscus, sealed, and visually checked to ensure the absence of air bubbles.

The filled containers are labeled and placed on ice in an insulated cooler. The cooler is sealed for transportation to the analytical laboratory. Proper chain-of-custody documentation is maintained throughout the sampling process.

The groundwater samples are analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- Poly Aromatic Hydrocarbons (PAH) in accordance with EPA Method SW 846-8270C
- Volatile Organic Carbons (VOCs) in accordance with EPA Method SW 846-8260B
- RCRA and NMWQCC Metals in accordance with EPA Methods SW846-6020A, SW 7470A
- Anions/Cations in accordance with EPA Methods SW375.4, 325.3, 310, 160.1 and SW 846-6010B

## **6.2 Decontamination of Equipment**

Cleaning of drilling equipment is the responsibility of the drilling company. In general, the cleaning procedures consists of using high-pressure steam to wash the drilling and sampling equipment prior to drilling and prior to starting each boring. Prior to use, the sampling equipment is cleaned with Liqui-Nox® detergent and rinsed with distilled water.

## **6.3 Laboratory Protocol**

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

## **7.0 LIMITATIONS**

Basin Environmental Consulting, LLC has prepared this Amendment to Stage II Abatement Plan 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.

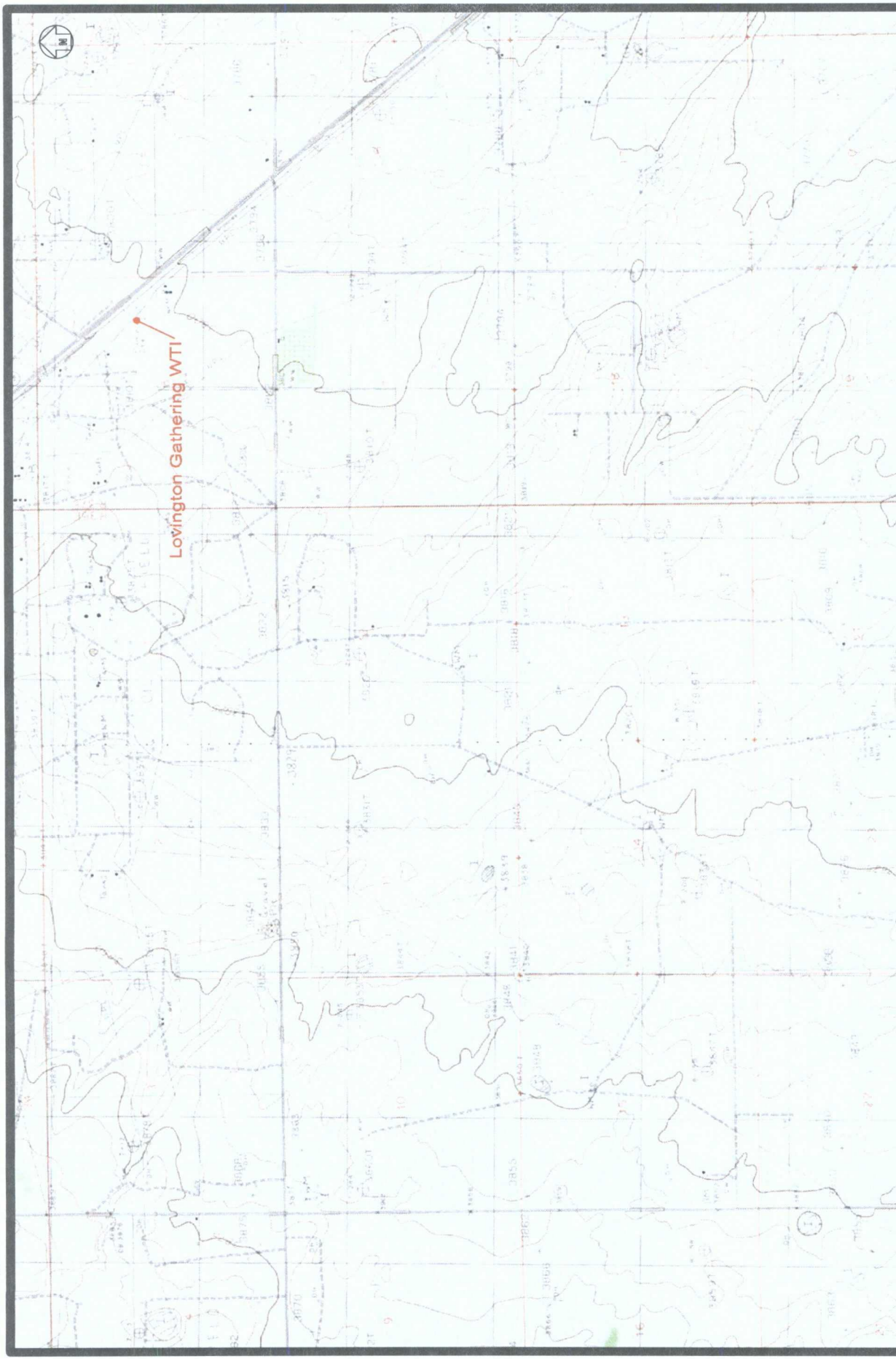
This report has been prepared for the benefit of Plains Pipeline, L.P. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Consulting, LLC and/or Plains Pipeline, L.P.



## **8.0 DISTRIBUTION:**

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Santa Fe, New Mexico 87505
- Copy 2: Larry Johnson  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division (District 1)  
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jhenry@paalp.com
- Copy 6: Basin Environmental Consulting, LLC  
P.O. Box 381  
Lovington, New Mexico 88260  
cjbryant@basin-consulting.com

Figure 1  
Site Location Map



**Figure 1**  
**Site Location Map**  
**Lovington Gathering WTI**  
**Plains Pipeline, L.P.**  
**Lea County, New Mexico**  
**AP-96**

3000 1500 0 1500 3000  
 Distance in Feet

Unit Letter "H", Section 6, Township 17 South, Range 37 East

# Basin Environmental Consulting

Prep By: CDS  
 December 22, 2009  
 Checked By: CDS  
 Scale 1"=3000'

Figure 2A  
Inferred Groundwater Gradient Map  
March 4, 2010

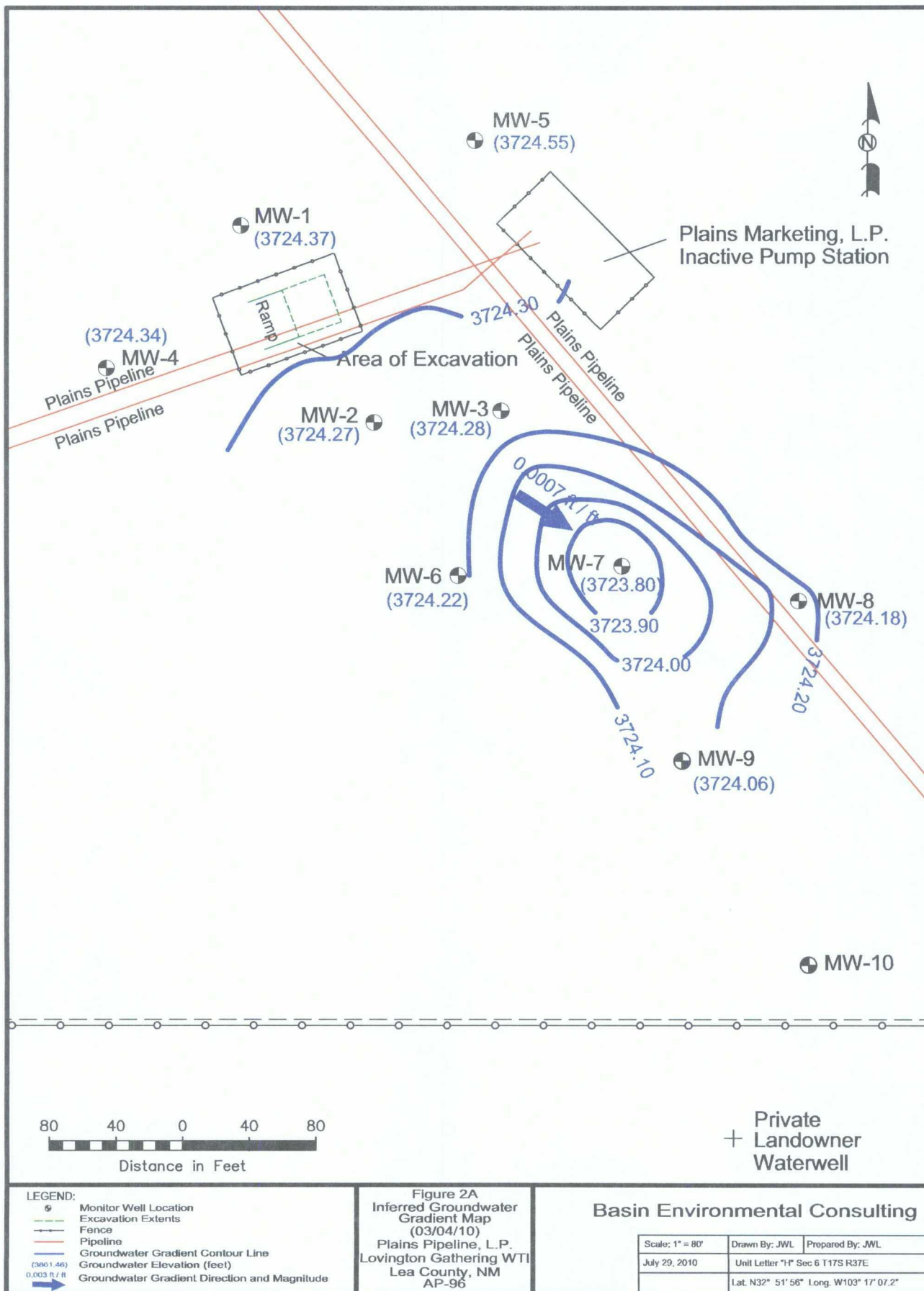


Figure 2B  
Inferred Groundwater Gradient Map  
May 25, 2010

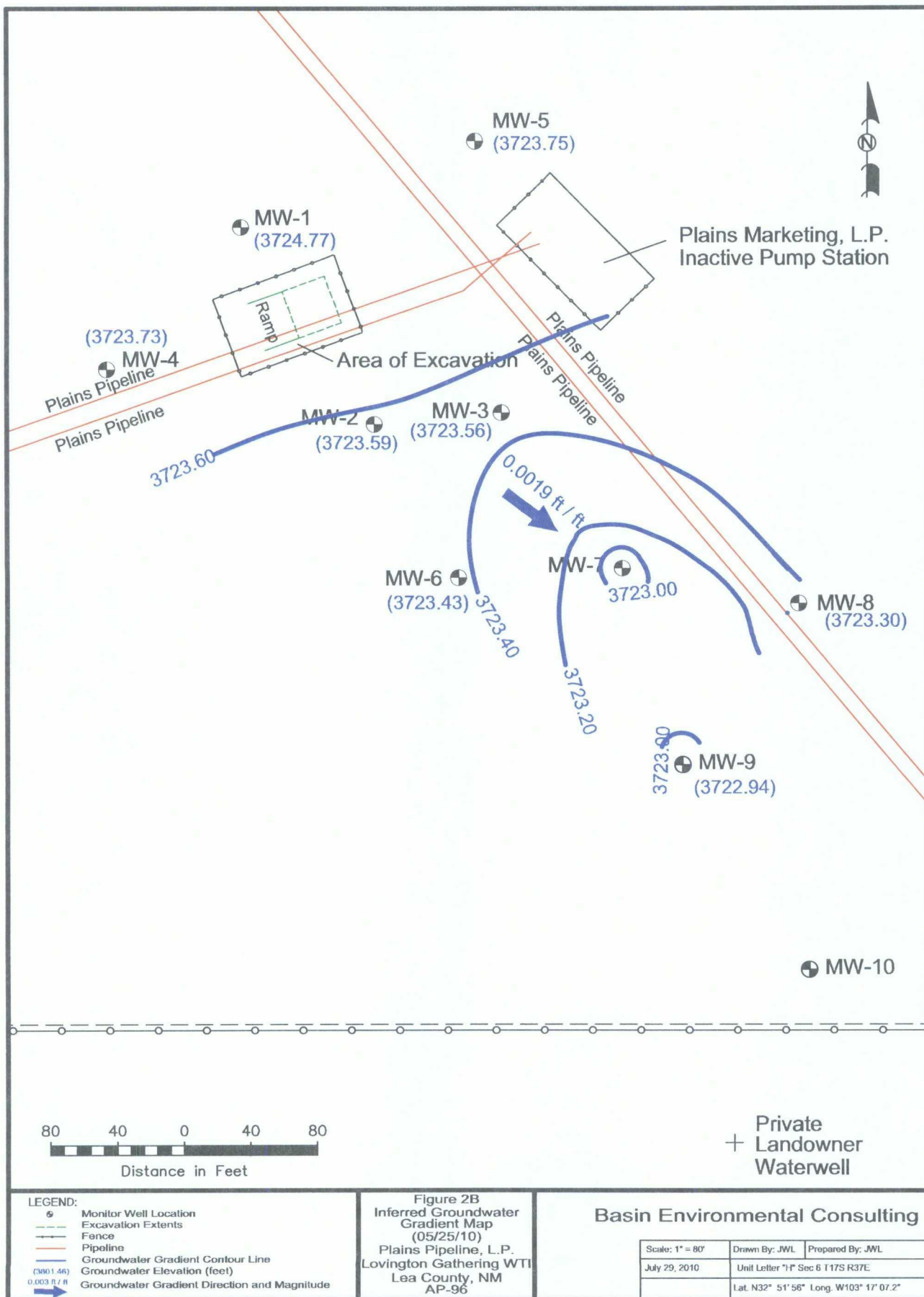
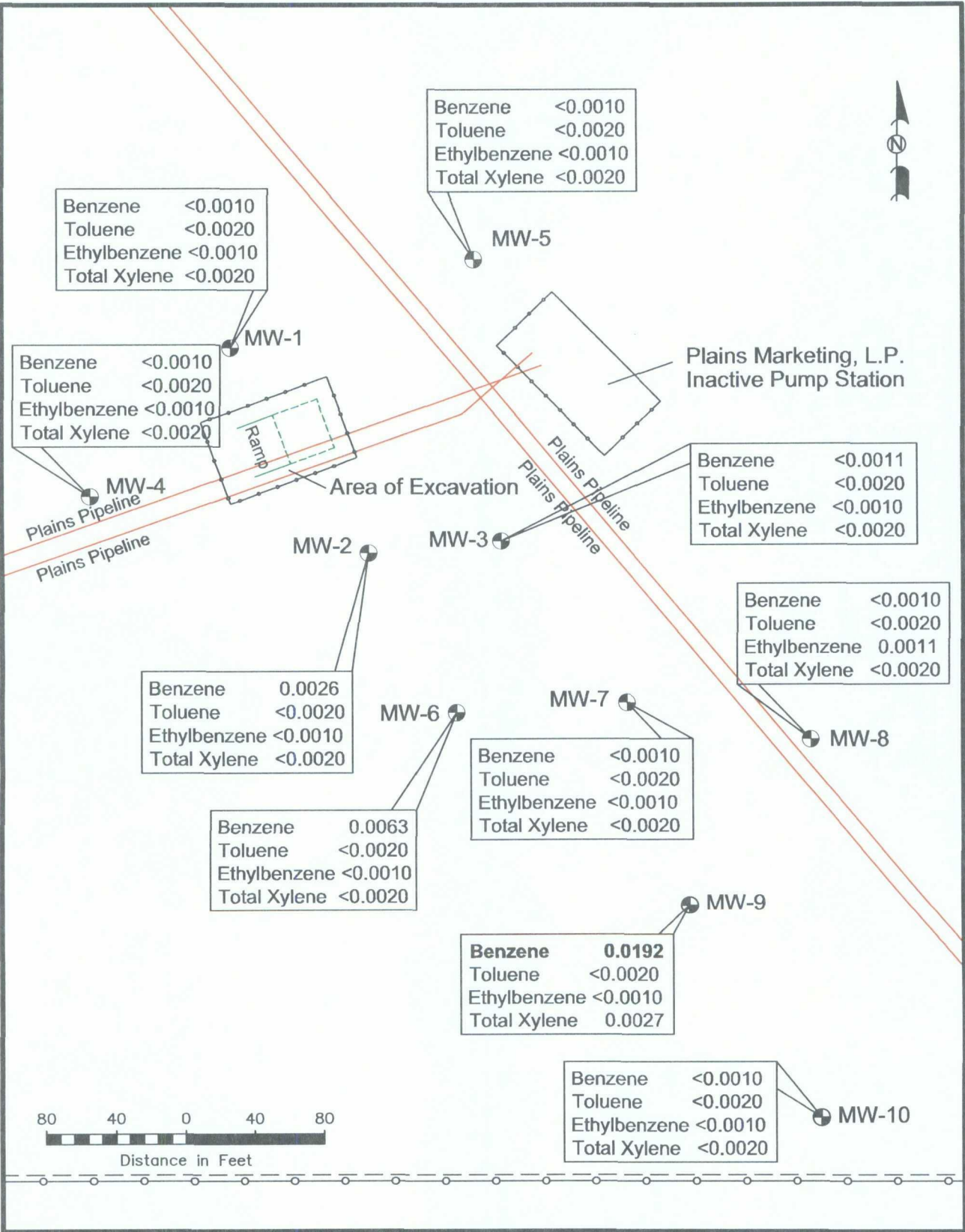


Figure 3A  
Groundwater Concentration Map  
March 4, 2010





LEGEND:

- Monitor Well Location
- Excavation Extents
- Fence
- Pipeline
- <0.001 Constituent Concentration (mg/L)

Figure 3A  
Groundwater Concentration  
03/04/10  
Plains Pipeline, L.P.  
Lovington Gathering - WT  
Lea County, NM  
AP-96

Basin Environmental Consulting

Scale: 1" = 80'	Drawn By: JWL	Prepared By: JWL
July 29, 2010	SE1/4 NE1/4 Sec 16 T1/S R3/E	
	Lat. N32° 51' 56" Long. W103° 17' 07.2"	

Figure 3B  
Groundwater Concentration Map  
May 25, 2010

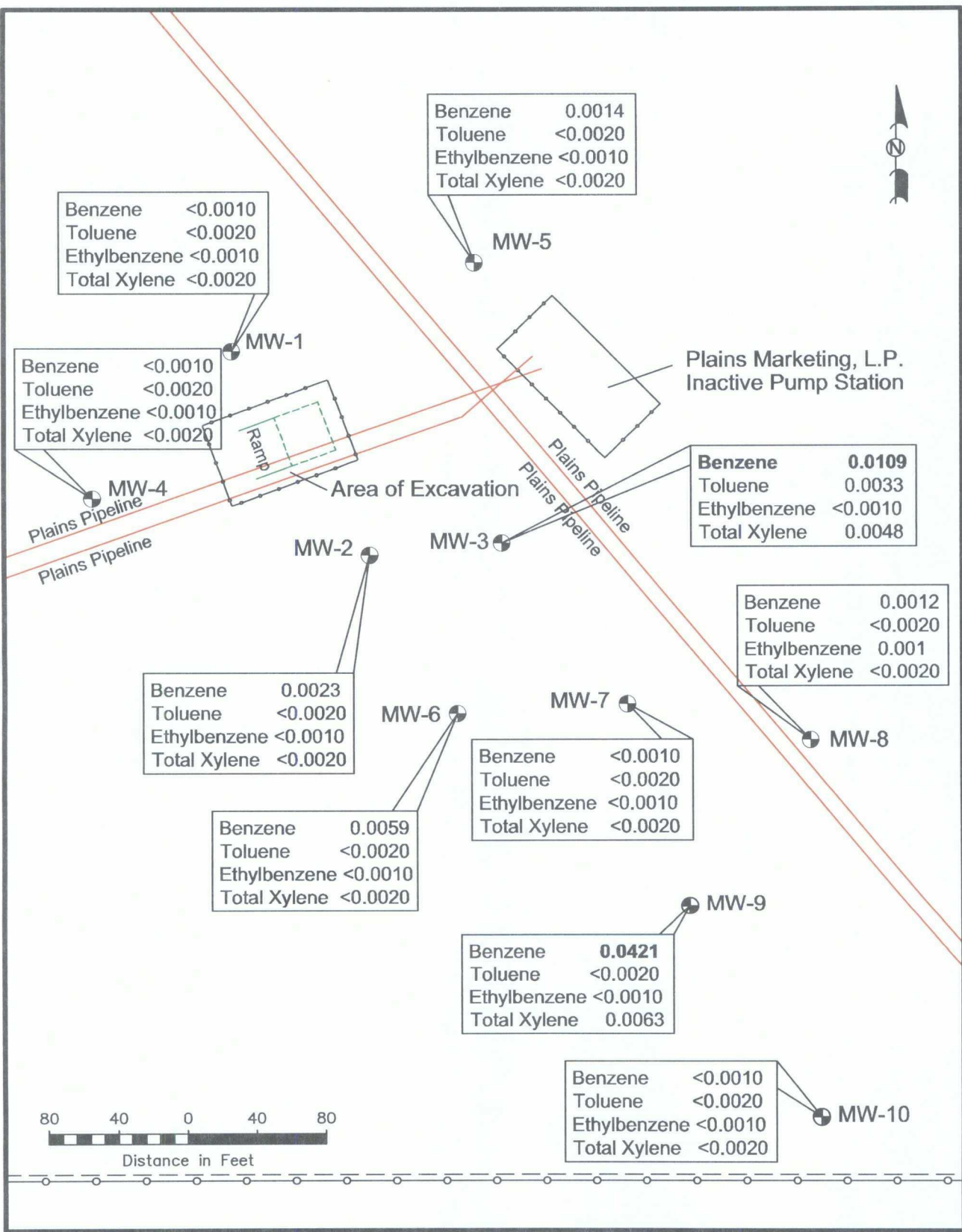


Figure 3B  
Groundwater Concentration  
05/25/10  
Plains Pipeline, L.P.  
Lovington Gathering - WT  
Lea County, NM  
AP-96

**Basin Environmental Consulting**

Scale: 1" = 80'	Drawn By: JWL	Prepared By: JWL
July 29, 2010	SE1/4 NE1/4 Sec 16 T17S R37E	
	Lat. N32° 51' 58" Long. W103° 17' 07.2"	

Table 1  
Groundwater Elevation Data

TABLE 1

## GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 LOVINGTON GATHERING WTI  
 LEA COUNTY, NEW MEXICO  
 PLAINS SRS NO: 2006-142  
 NMOCD REF NO: AP-96

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-1	10/05/06	3,806.60	-	78.00	0.00	3,728.60
MW-1	12/28/06	3,806.60	-	78.00	0.00	3,728.60
MW-1	03/16/07	3,806.60	-	79.50	0.00	3,727.10
MW-1	05/31/07	3,806.60	-	78.97	0.00	3,727.63
MW-1	09/25/07	3,806.60	-	80.16	0.00	3,726.44
MW-1	11/30/07	3,806.60	-	79.94	0.00	3,726.66
MW-1	03/11/08	3,806.60	-	79.82	0.00	3,726.78
MW-1	06/14/08	3,806.60	-	81.44	0.00	3,725.16
MW-1	09/17/08	3,806.60	-	81.27	0.00	3,725.33
MW-1	12/02/08	3,806.60	-	81.05	0.00	3,725.55
MW-1	03/03/09	3,806.60	-	81.56	0.00	3,725.04
MW-1	06/18/09	3,806.60	-	82.95	0.00	3,723.65
MW-1	09/01/09	3,806.60	-	84.36	0.00	3,722.24
MW-1	12/18/09	3,806.60	-	83.00	0.00	3,723.60
MW-1	03/04/10	3,806.60	-	82.23	0.00	3,724.37
MW-1	05/25/10	3,806.60	-	82.83	0.00	3,723.77
MW-2	10/05/06	3,806.31	-	77.94	0.00	3,728.37
MW-2	12/28/06	3,806.31	-	77.94	0.00	3,728.37
MW-2	03/16/07	3,806.31	-	79.13	0.00	3,727.18
MW-2	05/31/07	3,806.31	-	78.82	0.00	3,727.49
MW-2	09/25/07	3,806.31	-	80.13	0.00	3,726.18
MW-2	11/30/07	3,806.31	-	79.88	0.00	3,726.43
MW-2	03/11/08	3,806.31	-	80.09	0.00	3,726.22
MW-2	06/14/08	3,806.31	-	81.73	0.00	3,724.58
MW-2	09/17/08	3,806.31	-	81.20	0.00	3,725.11
MW-2	12/02/08	3,806.31	-	80.92	0.00	3,725.39
MW-2	03/03/09	3,806.31	-	81.60	0.00	3,724.71
MW-2	06/18/09	3,806.31	-	83.22	0.00	3,723.09
MW-2	09/01/09	3,806.31	-	84.61	0.00	3,721.70
MW-2	12/18/09	3,806.31	-	82.90	0.00	3,723.41
MW-2	03/04/10	3,806.31	-	82.04	0.00	3,724.27
MW-2	05/25/10	3,806.31	-	82.72	0.00	3,723.59

TABLE 1

## GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 LOVINGTON GATHERING WTI  
 LEA COUNTY, NEW MEXICO  
 PLAINS SRS NO: 2006-142  
 NMOCD REF NO: AP-96

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-3	10/05/06	3,806.19	-	77.85	0.00	3,728.34
MW-3	12/28/06	3,806.19	-	77.85	0.00	3,728.34
MW-3	03/16/07	3,806.19	-	79.13	0.00	3,727.06
MW-3	05/31/07	3,806.19	-	78.73	0.00	3,727.46
MW-3	09/25/07	3,806.19	-	80.03	0.00	3,726.16
MW-3	11/30/07	3,806.19	-	79.77	0.00	3,726.42
MW-3	03/11/08	3,806.19	-	80.50	0.00	3,725.69
MW-3	06/14/08	3,806.19	-	81.72	0.00	3,724.47
MW-3	09/17/08	3,806.19	-	81.10	0.00	3,725.09
MW-3	12/02/08	3,806.19	-	80.79	0.00	3,725.40
MW-3	03/03/09	3,806.19	-	81.56	0.00	3,724.63
MW-3	06/18/09	3,806.19	-	83.25	0.00	3,722.94
MW-3	09/01/09	3,806.19	-	84.55	0.00	3,721.64
MW-3	12/18/09	3,806.19	-	82.76	0.00	3,723.43
MW-3	03/04/10	3,806.19	-	81.91	0.00	3,724.28
MW-3	05/25/10	3,806.19	-	82.63	0.00	3,723.56
MW-4	12/28/06	3,806.67	-	78.73	0.00	3,727.94
MW-4	03/16/07	3,806.67	-	79.17	0.00	3,727.50
MW-4	05/30/07	3,806.67	-	79.09	0.00	3,727.58
MW-4	09/25/07	3,806.67	-	80.35	0.00	3,726.32
MW-4	11/30/07	3,806.67	-	80.09	0.00	3,726.58
MW-4	03/11/08	3,806.67	-	79.95	0.00	3,726.72
MW-4	06/14/08	3,806.67	-	81.60	0.00	3,725.07
MW-4	09/17/08	3,806.67	-	81.41	0.00	3,725.26
MW-4	12/02/08	3,806.67	-	81.13	0.00	3,725.54
MW-4	03/03/09	3,806.67	-	81.67	0.00	3,725.00
MW-4	06/18/09	3,806.67	-	83.13	0.00	3,723.54
MW-4	09/01/09	3,806.67	-	84.54	0.00	3,722.13
MW-4	12/18/09	3,806.67	-	83.14	0.00	3,723.53
MW-4	03/04/10	3,806.67	-	82.33	0.00	3,724.34
MW-4	05/25/10	3,806.67	-	82.94	0.00	3,723.73

TABLE 1

## GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 LOVINGTON GATHERING WTI  
 LEA COUNTY, NEW MEXICO  
 PLAINS SRS NO: 2006-142  
 NMOCD REF NO: AP-96

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-5	12/28/06	3,806.30	-	78.23	0.00	3,728.07
MW-5	03/16/07	3,806.30	-	78.79	0.00	3,727.51
MW-5	05/30/07	3,806.30	-	78.71	0.00	3,727.59
MW-5	09/25/07	3,806.30	-	79.89	0.00	3,726.41
MW-5	11/30/07	3,806.30	-	79.61	0.00	3,726.69
MW-5	03/11/08	3,806.30	-	79.61	0.00	3,726.69
MW-5	06/14/08	3,806.30	-	81.20	0.00	3,725.10
MW-5	09/17/08	3,806.30	-	80.96	0.00	3,725.34
MW-5	12/02/08	3,806.30	-	80.75	0.00	3,725.55
MW-5	03/03/09	3,806.30	-	81.33	0.00	3,724.97
MW-5	06/18/09	3,806.30	-	82.71	0.00	3,723.59
MW-5	09/01/09	3,806.30	-	84.07	0.00	3,722.23
MW-5	12/18/09	3,806.30	-	82.70	0.00	3,723.60
MW-5	03/04/10	3,806.30	-	81.95	0.00	3,724.35
MW-5	05/25/10	3,806.30	-	82.55	0.00	3,723.75
MW-6	12/28/06	3,806.08	-	78.42	0.00	3,727.66
MW-6	03/16/07	3,806.08	-	79.20	0.00	3,726.88
MW-6	05/30/07	3,806.08	-	78.75	0.00	3,727.33
MW-6	09/25/07	3,806.08	-	80.10	0.00	3,725.98
MW-6	11/30/07	3,806.08	-	79.73	0.00	3,726.35
MW-6	03/11/08	3,806.08	-	79.95	0.00	3,726.13
MW-6	06/14/08	3,806.08	-	82.01	0.00	3,724.07
MW-6	09/17/08	3,806.08	-	81.09	0.00	3,724.99
MW-6	12/02/08	3,806.08	-	80.77	0.00	3,725.31
MW-6	03/03/09	3,806.08	-	81.67	0.00	3,724.41
MW-6	06/18/09	3,806.08	-	83.48	0.00	3,722.60
MW-6	09/01/09	3,806.08	-	84.83	0.00	3,721.25
MW-6	12/18/09	3,806.08	-	82.75	0.00	3,723.33
MW-6	03/04/10	3,806.08	-	81.86	0.00	3,724.22
MW-6	05/25/10	3,806.08	-	82.65	0.00	3,723.43

TABLE 1

## GROUNDWATER ELEVATION DATA

PLAINS MARKETING, L.P.  
 LOVINGTON GATHERING WTI  
 LEA COUNTY, NEW MEXICO  
 PLAINS SRS NO: 2006-142  
 NMOCD REF NO: AP-96

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-7	12/28/06	3,806.05	-	78.40	0.00	3,727.65
MW-7	03/16/07	3,806.05	-	79.35	0.00	3,726.70
MW-7	05/31/07	3,806.05	-	78.71	0.00	3,727.34
MW-7	09/25/07	3,806.05	-	80.09	0.00	3,725.96
MW-7	11/30/07	3,806.05	-	79.80	0.00	3,726.25
MW-7	03/11/08	3,806.05	-	80.32	0.00	3,725.73
MW-7	06/14/08	3,806.05	-	81.19	0.00	3,724.86
MW-7	09/17/08	3,806.05	-	81.08	0.00	3,724.97
MW-7	12/02/08	3,806.05	-	80.70	0.00	3,725.35
MW-7	03/03/09	3,806.05	-	81.75	0.00	3,724.30
MW-7	06/18/09	3,806.05	-	83.63	0.00	3,722.42
MW-7	09/01/09	3,806.05	-	84.91	0.00	3,721.14
MW-7	12/18/09	3,806.05	-	83.16	0.00	3,722.89
MW-7	03/04/10	3,806.05	-	82.25	0.00	3,723.80
MW-7	05/25/10	3,806.05	-	83.10	0.00	3,722.95
MW-8	03/16/07	3,805.89	-	78.78	0.00	3,727.11
MW-8	05/31/07	3,805.89	-	78.64	0.00	3,727.25
MW-8	09/25/07	3,805.89	-	80.03	0.00	3,725.86
MW-8	11/30/07	3,805.89	-	79.70	0.00	3,726.19
MW-8	03/11/08	3,805.89	-	80.16	0.00	3,725.73
MW-8	06/14/08	3,805.89	-	82.38	0.00	3,723.51
MW-8	09/17/08	3,805.89	-	80.97	0.00	3,724.92
MW-8	12/02/08	3,805.89	-	80.58	0.00	3,725.31
MW-8	03/03/09	3,805.89	-	81.79	0.00	3,724.10
MW-8	06/18/09	3,805.89	-	83.79	0.00	3,722.10
MW-8	09/01/09	3,805.89	-	84.98	0.00	3,720.91
MW-8	12/18/09	3,805.89	-	82.59	0.00	3,723.30
MW-8	03/04/10	3,805.89	-	81.71	0.00	3,724.18
MW-8	05/25/10	3,805.89	-	82.59	0.00	3,723.30



**TABLE 1****GROUNDWATER ELEVATION DATA**

**PLAINS MARKETING, L.P.  
LOVINGTON GATHERING WTI  
LEA COUNTY, NEW MEXICO  
PLAINS SRS NO: 2006-142  
NMOCD REF NO: AP-96**

<b>WELL NUMBER</b>	<b>DATE MEASURED</b>	<b>CASING WELL ELEVATION</b>	<b>DEPTH TO PRODUCT</b>	<b>DEPTH TO WATER</b>	<b>PSH THICKNESS</b>	<b>CORRECTED GROUNDWATER ELEVATION</b>
MW-9	09/25/07	3,806.02	-	80.38	0.00	3,725.64
MW-9	11/30/07	3,806.02	-	79.89	0.00	3,726.13
MW-9	03/11/08	3,806.02	-	80.69	0.00	3,725.33
MW-9	06/14/08	3,806.02	-	83.11	0.00	3,722.91
MW-9	09/17/08	3,806.02	-	81.19	0.00	3,724.83
MW-9	12/02/08	3,806.02	-	80.81	0.00	3,725.21
MW-9	03/03/09	3,806.02	-	82.29	0.00	3,723.73
MW-9	06/18/09	3,806.02	-	84.45	0.00	3,721.57
MW-9	09/01/09	3,806.02	-	85.61	0.00	3,720.41
MW-9	10/05/09	3,806.02	-	84.59	0.00	3,721.43
MW-9	12/18/09	3,806.02	-	82.90	0.00	3,723.12
MW-9	03/04/10	3,806.02	-	81.96	0.00	3,724.06
MW-9	05/25/10	3,806.02	-	83.08	0.00	3,722.94
MW-10	11/02/09	-	-	82.99	0.00	-
MW-10	12/18/09	-	-	82.94	0.00	-
MW-10	03/04/10	-	-	82.03	0.00	-
MW-10	05/25/10	-	-	83.44	0.00	-

Table 2  
Concentrations of Benzene and BTEX in  
Groundwater

TABLE 2

## CONCENTRATIONS OF BENZENE &amp; BTEX IN GROUNDWATER

PLAINS PIPELINE, L.P.  
 LOVINGTON GATHERING WTI  
 LEA COUNTY, NEW MEXICO  
 PLAINS SRS NO. 2006-142  
 NMOCD REF NO: AP-96

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030				
		BENZENE	TOLUENE	ETHYL-BENZENE	M,P-XYLENES	O-XYLENES
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-1	10/05/06	<0.001	<0.001	<0.001	<0.001	<0.001
	12/28/06	<0.001	<0.001	<0.001	<0.001	<0.001
	03/16/07	<0.001	<0.001	<0.001	<0.001	<0.001
	05/31/07	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/07	<0.001	<0.001	<0.001	<0.002	<0.001
	11/30/07	<0.001	<0.002	<0.001	<0.002	<0.001
	03/11/08	<0.001	<0.002	<0.001	<0.002	<0.001
	06/14/08	<0.001	<0.002	<0.001	<0.002	<0.001
	09/17/08	<b>0.020</b>	<0.002	<0.001	<0.002	<0.001
	12/02/08	<b>0.035</b>	<0.002	<0.001	<0.002	<0.001
	03/03/09	<0.001	<0.002	<0.001	<0.002	<0.001
	06/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	09/01/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	12/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
MW-2	10/05/06	<b>0.010</b>	<0.001	<0.001	<0.001	<0.001
	12/28/06	<b>0.161</b>	<0.001	<0.001	0.024	<0.001
	03/16/07	<b>0.154</b>	<0.001	<0.001	0.015	<0.001
	05/31/07	0.005	<0.001	<0.001	<0.001	<0.001
	09/25/07	<b>0.050</b>	<0.001	<0.001	0.003	<0.001
	11/30/07	<b>0.928</b>	<0.001	<0.005	0.036	<0.005
	03/11/08	<b>0.095</b>	<0.002	<0.001	0.0032	<0.001
	06/14/08	0.003	<0.002	<0.001	<0.002	<0.001
	09/17/08	<b>0.159</b>	<0.002	<0.001	0.004	<0.001
	12/02/08	<b>0.050</b>	0.002	<0.001	0.007	0.001
	03/03/09	<b>0.036</b>	<0.002	<0.001	0.0026	<0.001
	06/18/09	0.0097	<0.0020	<0.0010	<0.0020	<0.0010
	09/01/09	<b>0.084</b>	<0.0020	<0.0010	0.0083	<0.0010
	12/18/09	<b>0.0129</b>	<0.0020	<0.0010	0.0095	<0.0010
	03/04/10	0.0026	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	0.0023	<0.0020	<0.0010	<0.0020	<0.0010
MW-3	10/05/06	<b>6.60</b>	<0.001	<0.001	0.072	<0.001
	12/28/06	<b>1.02</b>	<0.001	0.005	0.028	<0.001
	03/16/07	<b>1.48</b>	<0.001	0.013	0.034	<0.001
	05/31/07	<b>1.66</b>	0.010	0.034	0.029	0.012
	09/25/07	<b>0.494</b>	0.023	0.020	0.014	0.007
	11/30/07	<b>5.93</b>	0.027	0.273	0.141	0.074
	03/11/08	<b>1.159</b>	0.107	0.177	0.066	0.139
	06/14/08	<b>0.214</b>	0.002	0.007	0.012	0.005
	09/17/08	<b>0.026</b>	<0.002	<0.001	0.002	<0.001
	12/02/08	<b>0.024</b>	<0.002	<0.001	0.004	0.001
	03/03/09	<b>1.367</b>	0.0305	0.0251	0.0173	0.0158
	06/18/09	0.0031	<0.0020	<0.0010	<0.0020	<0.0010
	09/01/09	0.0073	0.0033	<0.0010	0.0028	0.0015
	12/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	0.0011	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	<b>0.0109</b>	0.0033	<0.0010	0.0048	0.0027

TABLE 2

## CONCENTRATIONS OF BENZENE &amp; BTEX IN GROUNDWATER

PLAINS PIPELINE, L.P.  
 LOVINGTON GATHERING WTI  
 LEA COUNTY, NEW MEXICO  
 PLAINS SRS NO. 2006-142  
 NMOCD REF NO: AP-96

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030				
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)
MW-4	12/28/06	<0.001	<0.001	<0.001	<0.001	<0.001
	03/16/07	<0.001	<0.001	<0.001	<0.001	<0.001
	05/30/07	<0.001	0.001	<0.001	<0.001	<0.001
	09/25/07	<0.001	0.001	<0.001	<0.002	<0.001
	11/30/07	<0.001	<0.002	<0.001	<0.002	<0.001
	03/11/08	<0.001	<0.002	<0.001	<0.002	<0.001
	06/14/08	<0.001	<0.002	<0.001	<0.002	<0.001
	09/17/08	<0.001	<0.002	<0.001	<0.002	<0.001
	12/02/08	<0.001	0.006	<0.001	<0.002	<0.001
	03/03/09	<0.001	<0.002	<0.001	<0.002	<0.001
	06/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	09/01/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	12/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
MW-5	12/28/06	<0.001	<0.001	<0.001	<0.001	<0.001
	03/16/07	<0.001	<0.001	<0.001	<0.001	<0.001
	05/30/07	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/07	<0.001	<0.001	<0.001	<0.002	<0.001
	11/30/07	<0.001	<0.002	<0.001	<0.002	<0.001
	03/11/08	<0.001	<0.002	<0.001	<0.002	<0.001
	06/14/08	<0.001	<0.002	<0.001	<0.002	<0.001
	09/17/08	<0.001	<0.002	<0.001	<0.002	<0.001
	12/02/08	<0.001	<0.002	<0.001	<0.002	<0.001
	03/03/09	<0.001	<0.002	<0.001	<0.002	<0.001
	06/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	09/01/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	12/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	0.0014	<0.0020	<0.0010	<0.0020	<0.0010
MW-6	12/28/06	<0.001	<0.001	<0.001	<0.001	<0.001
	03/16/07	<0.001	<0.001	<0.001	<0.001	<0.001
	05/30/07	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/07	<0.001	<0.001	<0.001	<0.002	<0.001
	11/30/07	<0.001	<0.002	<0.001	<0.002	<0.001
	03/11/08	<0.001	<0.002	<0.001	<0.002	<0.001
	06/14/08	<0.001	<0.002	<0.001	<0.002	<0.001
	09/17/08	<0.001	<0.002	<0.001	<0.002	<0.001
	12/02/08	<0.001	<0.002	<0.001	<0.002	<0.001
	03/03/09	<0.001	<0.002	<0.001	<0.002	<0.001
	06/18/09	0.0044	<0.0020	<0.0010	<0.0020	<0.0010
	09/01/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	12/18/09	0.013	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	0.0063	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	0.0059	<0.0020	<0.0010	<0.0020	<0.0010

TABLE 2

## CONCENTRATIONS OF BENZENE &amp; BTEX IN GROUNDWATER

PLAINS PIPELINE, L.P.  
 LOVINGTON GATHERING WTI  
 LEA COUNTY, NEW MEXICO  
 PLAINS SRS NO. 2006-142  
 NMOCD REF NO: AP-96

SAMPLE LOCATION	SAMPLE DATE	METHODS: EPA SW 846-8021B, 5030				
		BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL- BENZENE (mg/L)	M,P- XYLENES (mg/L)	O-XYLENES (mg/L)
MW-7	12/28/06	0.047	<0.001	<0.001	0.001	<0.001
	03/16/07	0.047	<0.001	<0.001	0.015	<0.001
	05/31/07	0.039	<0.001	<0.001	0.005	<0.001
	09/25/07	0.037	<0.001	<0.001	0.030	<0.001
	11/30/07	0.026	<0.002	<0.001	0.022	<0.001
	03/11/08	<b>0.095</b>	<0.002	<0.001	0.0032	<0.001
	06/14/08	<b>0.138</b>	<0.002	<0.001	0.016	<0.001
	09/17/08	<b>0.353</b>	<0.002	<0.001	0.003	<0.001
	12/02/08	<b>0.036</b>	<0.002	<0.001	0.003	0.002
	03/03/09	<b>0.0775</b>	<0.002	<0.001	0.0327	<0.001
	06/18/09	<b>0.057</b>	<0.0020	<0.0010	0.0329	<0.0010
	09/01/09	<b>0.012</b>	<0.0020	<0.0010	<0.0020	<0.0010
	12/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
MW-8	03/16/07	<0.001	<0.001	<0.001	<0.001	<0.001
	05/31/07	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/07	<0.001	<0.001	<0.001	<0.002	<0.001
	11/30/07	<0.001	<0.002	<0.001	<0.002	<0.001
	03/11/08	<0.001	<0.002	<0.001	<0.002	<0.001
	06/14/08	0.008	<0.002	<0.001	<0.002	<0.001
	09/17/08	<b>0.568</b>	<0.010	<0.005	<0.010	<0.005
	12/02/08	<b>0.234</b>	0.046	0.008	0.041	0.013
	03/03/09	<b>0.0284</b>	<0.002	<0.001	0.0068	<0.001
	06/18/09	0.0045	<0.0020	0.0016	0.0032	<0.0010
	09/01/09	0.0013	<0.0020	0.0011	0.0141	<0.0010
	12/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	<0.0010	<0.0020	0.0011	<0.0020	<0.0010
	05/25/10	0.0012	<0.0020	0.001	<0.0020	<0.0010
MW-9	09/25/07	<0.001	<0.001	<0.001	<0.002	<0.001
	11/30/07	<0.001	<0.002	<0.001	<0.002	<0.001
	03/11/08	<0.001	<0.002	<0.001	<0.002	<0.001
	06/14/08	<0.001	<0.002	<0.001	<0.002	<0.001
	09/17/08	<0.001	<0.002	<0.001	<0.002	<0.001
	12/02/08	<0.001	<0.002	<0.001	<0.002	<0.001
	03/03/09	<0.001	<0.002	<0.001	<0.002	<0.001
	06/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	09/01/09	<b>0.9717</b>	0.0641	<0.0100	0.0867	0.0422
	09/10/09	<b>1.838</b>	<0.0200	<0.0100	0.0537	<0.0100
	10/05/09	<b>0.985</b>	<0.0020	<0.0010	0.0442	<0.0010
	12/18/09	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	03/04/10	<b>0.0192</b>	<0.0020	<0.0010	0.0027	<0.0010
	05/25/10	<b>0.0421</b>	<0.0020	<0.0010	0.0063	<0.0010
MW-10	11/02/09	<0.005	<0.005	<0.005	<0.010	<0.005
	03/04/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
	05/25/10	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010
NMOCD CRITERIA		<b>0.01</b>	<b>0.75</b>	<b>0.75</b>	<b>TOTAL XYLENES 0.62</b>	

Table 3  
Concentrations of Poly Aromatic  
Hydrocarbons in Groundwater

TABLE 3  
CONCENTRATIONS OF POLY AROMATIC HYDROCARBONS (SEMI-VOLATILE) COMPOUNDS IN GROUNDWATER  
PLAINS PIPELINE, L.P.  
LOVINGTON GATHERING WTI  
LEA COUNTY, NEW MEXICO  
NMOCD REFERENCE NUMBER AP-96

All water concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-8270C, 3510														
		Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
MW-10	11/02/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-1	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-1	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-2	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-2	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-3	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-3	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-4	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-4	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-5	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-5	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-6	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-6	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-7	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

TABLE 3  
CONCENTRATIONS OF POLY AROMATIC HYDROCARBONS (SEMI-VOLATILE) COMPOUNDS IN GROUNDWATER  
PLAINS PIPELINE, L.P.  
LOVINGTON GATHERING WTI  
LEA COUNTY, NEW MEXICO  
NMOCD REFERENCE NUMBER AP-96

All water concentrations are reported in mg/L

		EPA SW846-8270C, 3510													
SAMPLE LOCATION	SAMPLE DATE	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
MW-7	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-8	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-8	12/18/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-9	12/02/08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-9	09/29/09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005



Table 4  
Concentrations of Volatile Organic  
Compounds in Groundwater

TABLE 4

## CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS PIPELINE, LP

LOVINGTON GATHERING WTI

LEA COUNTY, NEW MEXICO

NMOCD REFERENCE NUMBER AP-96

*All water concentrations are in mg/L*

Date Sampled	Sample Location	Acetone	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone	MTBE	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane
11/02/09	MW-10	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		-	-	0.01 mg/L	-	-	-	-	-	-	-	-	-	-	-	0.01 mg/L	-	-

TABLE 4

## CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS PIPELINE, LP

LOVINGTON GATHERING WTI

LEA COUNTY, NEW MEXICO

NMOC REFERENCE NUMBER AP-96

*All water concentrations are in mg/L*

Date Sampled	Sample Location	2-Chloroethyl vinyl ether	Chloroform	Chloromethane	2-Chlorotoluene	4-Chlorotoluene	p-Cymene(p-Isopropyltoluene)	Dibromochloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane (methylene bromide)	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	0.1 mg/L
11/02/09	MW-10	-	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		-	0.1mg/L	-	-	-	-	-	-	0.0001 mg/L	-	-	-	-	-	0.005 mg/L	0.01 mg/L	0.005 mg/L	0.1mg/L

TABLE 4

## CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS PIPELINE, LP

LOVINGTON GATHERING WTI

LEA COUNTY, NEW MEXICO

NMOC REFERENCE NUMBER AP-96

*All water concentrations are in mg/L*

Date Sampled	Sample Location	trans-1,2-Dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	0.75 mg/L	-	2-Hexanone	Isopropylbenzene	Methylene chloride	4-Methyl-2-pentanone (MIBK)	Naphthalene	n-Propylbenzene	Styrene	1,1,1,2-Tetrachloroethane
11/02/09	MW-10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	>0.005	-	<0.01	<0.005	<0.005	<0.005
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		-	-	-	-	-	-	-	0.1mg/L	-	-	-	-	-	0.03 mg/L	-	-	-

TABLE 4

## CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

PLAINS PIPELINE, LP

LOVINGTON GATHERING WTI

LEA COUNTY, NEW MEXICO

NMOC REFERENCE NUMBER AP-96

*All water concentrations are in mg/L*

Date Sampled	Sample Location	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene (TCE)	Trichlorofluoromethane	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	o-Xylene	m,p-Xylene	Vinyl Acetate	Vinyl Chloride
11/02/09	MW-10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	-	<0.002
Maximum Contaminant Levels from NMWQCC Drinking water standards Sections 1-101.UU and 3-103.A.		0.02 mg/L	-	0.75 mg/L	-	-	-	0.06 mg/L	-	0.01 mg/L	-	-	-	Total Xylene 0.62 mg/L	-	-	0.001 mg/L

Table 5  
Concentrations of RCRA and NMWQCC  
Metals in Groundwater



Table 6  
Concentrations of Anions/Cations in  
Groundwater

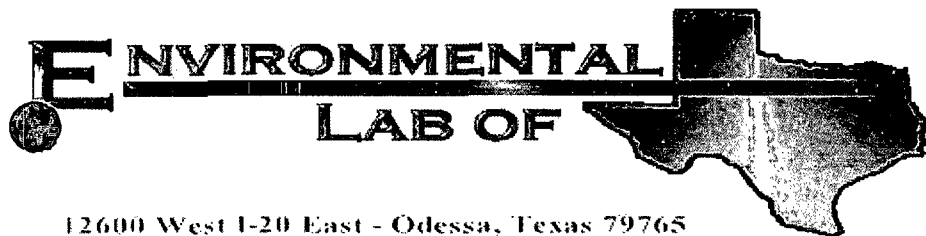


TABLE 6  
CONCENTRATIONS OF ANIONS/CATIONS IN GROUNDWATER  
PLAINS MARKETING, L.P.  
LOVINGTON GATHERING WTI  
LEA COUNTY, NEW MEXICO  
NMOCD REFERENCE NUMBER AP-96

*All water concentrations are reported in mg/L*

SAMPLE DATE	SAMPLE LOCATION	EPA SW375.4, 325.3, 310, 160.1 SW846 6010B										
		Calcium	Magnesium	Potassium	Sodium	Chloride	Sulfate	Bicarbonate	Carbonate	Nitrate	Phosphate	Flouride
11/2/2009	MW-10	76.5	13.6	<12.5	33.3	24.9	64.1	126	<4.00	2.14	<2.5	9.27
Maximum Contaminant Levels from NM WQCC Drinking water standards Sections 1- 101.U/U and 3-103.A.		.	.	.	.	250 mg/L	600 mg/L	.	.	10 mg/L	.	1.6 mg/L

Appendix A  
Laboratory Analytical Reports



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Lovington Gathering WTI

Project Number: SRS: 2006-142

Location: Lea Co., NM

Lab Order Number: 6J06008

Report Date: 10/18/06

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	6J06008-01	Water	10/05/06 11:55	10-06-2006 14:00
MW-2	6J06008-02	Water	10/05/06 14:40	10-06-2006 14:00
MW-3	6J06008-03	Water	10/05/06 16:55	10-06-2006 14:00

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (6J06008-01) Water</b>									<b>S-INT</b>
Benzene	ND	0.0100	mg/L	10	EJ61608	10/17/06	10/17/06	EPA 8021B	
Toluene	ND	0.0100	"	"	"	"	"	"	
Ethylbenzene	ND	0.0100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0100	"	"	"	"	"	"	
Xylene (o)	ND	0.0100	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		81.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.2 %	80-120		"	"	"	"	
<b>MW-2 (6J06008-02) Water</b>									
<b>Benzene</b>	<b>0.0109</b>	0.0100	mg/L	10	EJ61608	10/17/06	10/17/06	EPA 8021B	
Toluene	ND	0.0100	"	"	"	"	"	"	
Ethylbenzene	ND	0.0100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0100	"	"	"	"	"	"	
Xylene (o)	ND	0.0100	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		81.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.8 %	80-120		"	"	"	"	
<b>MW-3 (6J06008-03) Water</b>									
<b>Benzene</b>	<b>6.60</b>	0.0250	mg/L	25	EJ61608	10/17/06	10/17/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>J [0.0144]</b>	0.0250	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.0723</b>	0.0250	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>J [0.00948]</b>	0.0250	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		95.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.2 %	80-120		"	"	"	"	

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EJ61608 - EPA 5030C (GC)**

**Blank (EJ61608-BLK1)**

Prepared: 10/16/06 Analyzed: 10/17/06

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	32.4		ug/l	40.0		81.0	80-120			
Surrogate: 4-Bromofluorobenzene	33.9		"	40.0		84.8	80-120			

**LCS (EJ61608-BS1)**

Prepared: 10/16/06 Analyzed: 10/17/06

Benzene	0.0482	0.00100	mg/L	0.0500		96.4	80-120			
Toluene	0.0428	0.00100	"	0.0500		85.6	80-120			
Ethylbenzene	0.0413	0.00100	"	0.0500		82.6	80-120			
Xylene (p/m)	0.0853	0.00100	"	0.100		85.3	80-120			
Xylene (o)	0.0409	0.00100	"	0.0500		81.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	36.7		ug/l	40.0		91.8	80-120			
Surrogate: 4-Bromofluorobenzene	42.8		"	40.0		107	80-120			

**Calibration Check (EJ61608-CCV1)**

Prepared: 10/16/06 Analyzed: 10/17/06

Benzene	50.4		ug/l	50.0		101	80-120			
Toluene	43.5		"	50.0		87.0	80-120			
Ethylbenzene	41.4		"	50.0		82.8	80-120			
Xylene (p/m)	81.9		"	100		81.9	80-120			
Xylene (o)	40.3		"	50.0		80.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	33.7		"	40.0		84.2	80-120			
Surrogate: 4-Bromofluorobenzene	35.0		"	40.0		87.5	80-120			

**Matrix Spike (EJ61608-MS1)**

Source: 6J12016-01

Prepared: 10/16/06 Analyzed: 10/17/06

Benzene	0.0518	0.00100	mg/L	0.0500	ND	104	80-120			
Toluene	0.0462	0.00100	"	0.0500	ND	92.4	80-120			
Ethylbenzene	0.0424	0.00100	"	0.0500	ND	84.8	80-120			
Xylene (p/m)	0.0932	0.00100	"	0.100	ND	93.2	80-120			
Xylene (o)	0.0432	0.00100	"	0.0500	ND	86.4	80-120			
Surrogate: a,a,a-Trifluorotoluene	37.6		ug/l	40.0		94.0	80-120			
Surrogate: 4-Bromofluorobenzene	39.6		"	40.0		99.0	80-120			

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EJ61608 - EPA 5030C (GC)**

Matrix Spike Dup (EJ61608-MSD1)		Source: 6J12016-01			Prepared: 10/16/06 Analyzed: 10/17/06					
Benzene	0.0500	0.00100	mg/L	0.0500	ND	100	80-120	3.92	20	
Toluene	0.0424	0.00100	"	0.0500	ND	84.8	80-120	8.58	20	
Ethylbenzene	0.0453	0.00100	"	0.0500	ND	90.6	80-120	6.61	20	
Xylene (p/m)	0.0807	0.00100	"	0.100	ND	80.7	80-120	14.4	20	
Xylene (o)	0.0412	0.00100	"	0.0500	ND	82.4	80-120	4.74	20	
Surrogate: a,a,a-Trifluorotoluene	33.8		ug/l	40.0		84.5	80-120			
Surrogate: 4-Bromofluorobenzene	34.7		"	40.0		86.8	80-120			

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Midland TX, 79706-4476

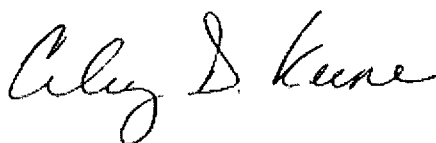
Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### Notes and Definitions

S-INT Sample contains high levels of surfactants.  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By: \_\_\_\_\_



Date: \_\_\_\_\_

10/18/2006

Raland K. Tuttle, Lab Manager  
Caley D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
La Tasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.*

Page 5 of 5



12800 West I-20 East  
Odessa, Texas 79765

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

Project Manager: Ken Dutton  
Company Name: Basin Environmental Service Technologies, LLC  
Company Address: P. O. Box 301  
City/State/Zip: Lovington, NM 88260  
Telephone No: (505) 441-2124  
Sampler Signature: Ken Dutton  
Fax No: (505) 396-1429  
e-mail: kdutton@basinenvironment.com  
Project Name: Lovington Gathering WTI  
Project #: 2006-142  
Project Loc: Lea County, NM  
PO #: PAA/C. Reynolds  
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	No. of Containers	Preservation & # of Containers										Matrix										Analyze For																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
							Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge	GW=Groundwater S=Soil/Solid	NP=Non-Portable Specify Other	TPH: 418.1 8015M 1005 1006	Calcions (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , CO <sub>3</sub> , HCO <sub>3</sub> )	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 80218/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides (EPA 300.0)	Standard TAT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
01	MW-1	N/A	N/A	5-Oct-06	1155	2	X	X														X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

Special Instructions: GW samples may contain Bariod Quickfoam, see attached MSDS sheet for chemical contents

Relinquished by: Ken Dutton Date: 06 Oct 06 Time: 1126 Received by: Jandra Blackard Date: 04 Oct 06 Time: 1120

Relinquished by: Jandra Blackard Date: 04 Oct 06 Time: 210 Received by: Jandra Blackard Date: 10 Oct 06 Time: 1400

Laboratory Comments: Sample Containers Intact? Y VOCs Free of Headspace? Y Custody seals on container(s)? Y Custody seals on cooler(s)? Y Sample Hand Delivered by Sampler/Client Rep? Y by Courier? UPS DHL FedEx Lone Star Temperature Upon Receipt: 21.0 °C

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

Client: Plains P/L / Basin Env.  
Date/ Time: 10-06-06 @ 1400  
Lab ID #: 6J06008  
Initials: JMM

**Sample Receipt Checklist**

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	2.0 °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 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	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

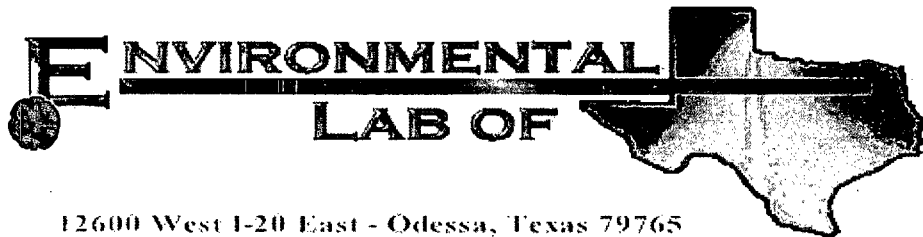
**Variance Documentation**

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



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Lovington Gathering WTI

Project Number: SRS: 2006-142

Location: Lea County, NM

Lab Order Number: 6L29011

Report Date: 01/02/07

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	6L29011-01	Water	12/28/06 08:00	12-29-2006 14:00
MW-4	6L29011-02	Water	12/28/06 09:15	12-29-2006 14:00
MW-5	6L29011-03	Water	12/28/06 10:25	12-29-2006 14:00
MW-6	6L29011-04	Water	12/28/06 11:30	12-29-2006 14:00
MW-7	6L29011-05	Water	12/28/06 12:50	12-29-2006 14:00
MW-2	6L29011-06	Water	12/28/06 14:00	12-29-2006 14:00
MW-3	6L29011-07	Water	12/28/06 15:15	12-29-2006 14:00

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (6L29011-01) Water</b>									
<b>Benzene</b>	<b>ND</b>	0.00100	mg/L	1	EL63101	12/31/06	12/31/06	EPA 8021B	
<b>Toluene</b>	<b>I [0.000583]</b>	0.00100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>I [0.000454]</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.00222</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>I [0.000796]</b>	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		99.2 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.0 %	80-120		"	"	"	"	

**MW-4 (6L29011-02) Water**

<b>Benzene</b>	<b>ND</b>	0.00100	mg/L	1	EL63101	12/31/06	01/01/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		82.0 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		89.0 %	80-120		"	"	"	"	

**MW-5 (6L29011-03) Water**

Benzene	ND	0.00100	mg/L	1	EL63101	12/31/06	01/01/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		89.5 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.2 %	80-120		"	"	"	"	

**MW-6 (6L29011-04) Water**

Benzene	ND	0.00100	mg/L	1	EL63101	12/31/06	01/01/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		90.5 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		94.5 %	80-120		"	"	"	"	

Plains All American EH & S  
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Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-7 (6L29011-05) Water</b>									
<b>Benzene</b>	<b>0.0473</b>	0.00100	mg/L	1	EL63101	12/31/06	01/01/07	EPA 8021B	
<b>Toluene</b>	<b>I [0.000357]</b>	0.00100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>I [0.000202]</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.00130</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>ND</b>	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		93.5 %	80-120	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	80-120	"	"	"	"	"	
<b>MW-2 (6L29011-06) Water</b>									
<b>Benzene</b>	<b>0.161</b>	0.00100	mg/L	1	EL63101	12/31/06	01/01/07	EPA 8021B	
<b>Toluene</b>	<b>I [0.000389]</b>	0.00100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>I [0.000242]</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.0248</b>	0.00100	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>ND</b>	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		99.2 %	80-120	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		90.5 %	80-120	"	"	"	"	"	
<b>MW-3 (6L29011-07) Water</b>									
<b>Benzene</b>	<b>1.02</b>	0.00500	mg/L	5	EL63101	12/31/06	01/01/07	EPA 8021B	
<b>Toluene</b>	<b>J [0.00339]</b>	0.00500	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.00533</b>	0.00500	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.0280</b>	0.00500	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>J [0.00479]</b>	0.00500	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		82.0 %	80-120	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		91.5 %	80-120	"	"	"	"	"	

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1301 S. County Road 1150  
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Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
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**Batch EL63101 - EPA 5030C (GC)**

**Blank (EL63101-BLK1)**

Prepared: 12/31/06 Analyzed: 01/01/07

Benzene	ND	0.00100	mg/L					
Toluene	ND	0.00100	"					
Ethylbenzene	ND	0.00100	"					
Xylene (p/m)	ND	0.00100	"					
Xylene (o)	ND	0.00100	"					
Surrogate: a,a,a-Trifluorotoluene	36.1		ug/l	40.0		90.2	80-120	
Surrogate: 4-Bromofluorobenzene	37.0		"	40.0		92.5	80-120	

**LCS (EL63101-BS1)**

Prepared: 12/31/06 Analyzed: 01/01/07

Benzene	0.0455	0.00100	mg/L	0.0500		91.0	80-120	
Toluene	0.0472	0.00100	"	0.0500		94.4	80-120	
Ethylbenzene	0.0444	0.00100	"	0.0500		88.8	80-120	
Xylene (p/m)	0.0942	0.00100	"	0.100		94.2	80-120	
Xylene (o)	0.0439	0.00100	"	0.0500		87.8	80-120	
Surrogate: a,a,a-Trifluorotoluene	36.2		ug/l	40.0		90.5	80-120	
Surrogate: 4-Bromofluorobenzene	43.5		"	40.0		109	80-120	

**Calibration Check (EL63101-CCV1)**

Prepared: 12/31/06 Analyzed: 01/01/07

Benzene	48.2		ug/l	50.0		96.4	80-120	
Toluene	49.3		"	50.0		98.6	80-120	
Ethylbenzene	56.4		"	50.0		113	80-120	
Xylene (p/m)	94.8		"	100		94.8	80-120	
Xylene (o)	45.3		"	50.0		90.6	80-120	
Surrogate: a,a,a-Trifluorotoluene	37.8		"	40.0		94.5	80-120	
Surrogate: 4-Bromofluorobenzene	44.1		"	40.0		110	80-120	

**Matrix Spike (EL63101-MS1)**

Source: 6L29005-01

Prepared: 12/31/06 Analyzed: 01/01/07

Benzene	0.0470	0.00100	mg/L	0.0500	ND	94.0	80-120	
Toluene	0.0473	0.00100	"	0.0500	ND	94.6	80-120	
Ethylbenzene	0.0502	0.00100	"	0.0500	ND	100	80-120	
Xylene (p/m)	0.0959	0.00100	"	0.100	ND	95.9	80-120	
Xylene (o)	0.0441	0.00100	"	0.0500	ND	88.2	80-120	
Surrogate: a,a,a-Trifluorotoluene	35.7		ug/l	40.0		89.2	80-120	
Surrogate: 4-Bromofluorobenzene	42.9		"	40.0		107	80-120	

Environmental Lab of Texas

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Page 4 of 6

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL63101 - EPA 5030C (GC)**

**Matrix Spike Dup (EL63101-MSD1)**

**Source: 6L29005-01**

Prepared: 12/31/06 Analyzed: 01/01/07

Benzene	0.0461	0.00100	mg/L	0.0500	ND	92.2	80-120	1.93	20	
Toluene	0.0485	0.00100	"	0.0500	ND	97.0	80-120	2.51	20	
Ethylbenzene	0.0527	0.00100	"	0.0500	ND	105	80-120	4.88	20	
Xylene (p/m)	0.0978	0.00100	"	0.100	ND	97.8	80-120	1.96	20	
Xylene (o)	0.0458	0.00100	"	0.0500	ND	91.6	80-120	3.78	20	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	37.3		ug/l	40.0		93.2	80-120			
Surrogate: 4-Bromofluorobenzene	42.6		"	40.0		106	80-120			



Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:

*Raland K. Tuttle*

Date:

1/2/2007

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
LaTasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

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Page 6 of 6



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

Client: Plains P/L / Basin Env.  
Date/ Time: 12-29-06 @ 1400  
Lab ID #: 6L-29011  
Initials: JMM

**Sample Receipt Checklist**

Client Initials

#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	0-0 °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)?	Yes	No	Not Applicable	
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	No	Not Applicable	

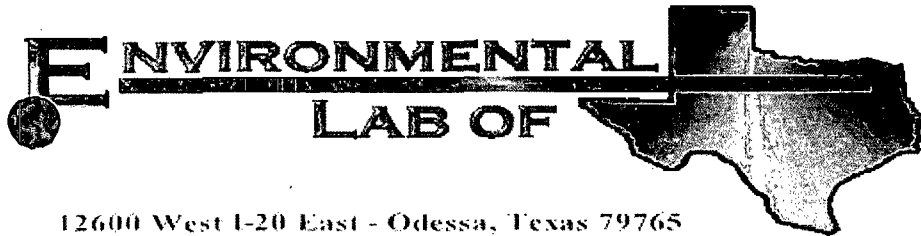
**Variance Documentation**

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



12600 West I-20 East - Odessa, Texas 79765

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## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Lovington Gathering WTI

Project Number: SRS: 2006-142

Location: Lea County, NM

Lab Order Number: 7C20004

Report Date: 03/28/07

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-8	7C20004-01	Water	03/16/07 10:56	03-20-2007 11:30
MW-1	7C20004-02	Water	03/16/07 11:30	03-20-2007 11:30
MW-4	7C20004-03	Water	03/16/07 11:55	03-20-2007 11:30
MW-5	7C20004-04	Water	03/16/07 13:10	03-20-2007 11:30
MW-6	7C20004-05	Water	03/16/07 14:10	03-20-2007 11:30
MW-7	7C20004-06	Water	03/16/07 14:50	03-20-2007 11:30
MW-2	7C20004-07	Water	03/16/07 15:25	03-20-2007 11:30
MW-3	7C20004-08	Water	03/16/07 16:20	03-20-2007 11:30

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-8 (7C20004-01) Water</b>									
Benzene	ND	0.00100	mg/L	1	EC72109	03/21/07	03/22/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		94.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %	80-120		"	"	"	"	
<b>MW-1 (7C20004-02) Water</b>									
Benzene	ND	0.00100	mg/L	1	EC72601	03/26/07	03/27/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		100 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.2 %	80-120		"	"	"	"	
<b>MW-4 (7C20004-03) Water</b>									
Benzene	ND	0.00100	mg/L	1	EC72601	03/26/07	03/27/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		98.6 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.6 %	80-120		"	"	"	"	
<b>MW-5 (7C20004-04) Water</b>									
Benzene	ND	0.00100	mg/L	1	EC72601	03/26/07	03/27/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		97.4 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.2 %	80-120		"	"	"	"	

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Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-6 (7C20004-05) Water</b>									
Benzene	ND	0.00100	mg/L	1	EC72601	03/26/07	03/27/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		97.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.8 %	80-120		"	"	"	"	
<b>MW-7 (7C20004-06) Water</b>									
<b>Benzene</b>	<b>0.0479</b>	0.00100	mg/L	1	EC72601	03/26/07	03/27/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.0152</b>	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		94.6 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.8 %	80-120		"	"	"	"	
<b>MW-2 (7C20004-07) Water</b>									
<b>Benzene</b>	<b>0.154</b>	0.00100	mg/L	1	EC72601	03/26/07	03/27/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.0102</b>	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96.8 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.6 %	80-120		"	"	"	"	
<b>MW-3 (7C20004-08) Water</b>									
<b>Benzene</b>	<b>1.48</b>	0.0100	mg/L	10	EC72601	03/26/07	03/27/07	EPA 8021B	
Toluene	ND	0.0100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0139</b>	0.0100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.0341</b>	0.0100	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>J [0.00252]</b>	0.0100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		88.6 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.4 %	80-120		"	"	"	"	

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1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

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

**Batch EC72109 - EPA 5030C (GC)**

**Blank (EC72109-BLK1)**

Prepared: 03/21/07 Analyzed: 03/22/07

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	46.7		ug/l	50.0		93.4	80-120			
Surrogate: 4-Bromofluorobenzene	44.5		"	50.0		89.0	80-120			

**LCS (EC72109-BS1)**

Prepared: 03/21/07 Analyzed: 03/22/07

Benzene	0.0580	0.00100	mg/L	0.0500		116	80-120			
Toluene	0.0596	0.00100	"	0.0500		119	80-120			
Ethylbenzene	0.0522	0.00100	"	0.0500		104	80-120			
Xylene (p/m)	0.119	0.00100	"	0.100		119	80-120			
Xylene (o)	0.0591	0.00100	"	0.0500		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	55.5		ug/l	50.0		111	80-120			
Surrogate: 4-Bromofluorobenzene	50.6		"	50.0		101	80-120			

**Calibration Check (EC72109-CCV1)**

Prepared: 03/21/07 Analyzed: 03/22/07

Benzene	56.7		ug/l	50.0		113	80-120			
Toluene	55.7		"	50.0		111	80-120			
Ethylbenzene	56.1		"	50.0		112	80-120			
Xylene (p/m)	105		"	100		105	80-120			
Xylene (o)	58.8		"	50.0		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	47.6		"	50.0		95.2	80-120			
Surrogate: 4-Bromofluorobenzene	52.5		"	50.0		105	80-120			

**Matrix Spike (EC72109-MS1)**

Source: 7C19010-01

Prepared: 03/21/07 Analyzed: 03/22/07

Benzene	0.0563	0.00100	mg/L	0.0500	ND	113	80-120			
Toluene	0.0546	0.00100	"	0.0500	ND	109	80-120			
Ethylbenzene	0.0519	0.00100	"	0.0500	ND	104	80-120			
Xylene (p/m)	0.102	0.00100	"	0.100	0.00101	101	80-120			
Xylene (o)	0.0562	0.00100	"	0.0500	ND	112	80-120			
Surrogate: a,a,a-Trifluorotoluene	46.2		ug/l	50.0		92.4	80-120			
Surrogate: 4-Bromofluorobenzene	49.1		"	50.0		98.2	80-120			

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Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

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

**Batch EC72109 - EPA 5030C (GC)**

**Matrix Spike Dup (EC72109-MSD1)**

Source: 7C19010-01

Prepared: 03/21/07 Analyzed: 03/22/07

Benzene	0.0529	0.00100	mg/L	0.0500	ND	106	80-120	6.39	20	
Toluene	0.0520	0.00100	"	0.0500	ND	104	80-120	4.69	20	
Ethylbenzene	0.0536	0.00100	"	0.0500	ND	107	80-120	2.84	20	
Xylene (p/m)	0.0988	0.00100	"	0.100	0.00101	97.8	80-120	3.22	20	
Xylene (o)	0.0547	0.00100	"	0.0500	ND	109	80-120	2.71	20	
Surrogate: a,a,a-Trifluorotoluene	43.8		ug/l	50.0		87.6	80-120			
Surrogate: 4-Bromofluorobenzene	47.4		"	50.0		94.8	80-120			

**Batch EC72601 - EPA 5030C (GC)**

**Blank (EC72601-BLK1)**

Prepared & Analyzed: 03/26/07

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	40.8		ug/l	50.0		81.6	80-120			
Surrogate: 4-Bromofluorobenzene	40.6		"	50.0		81.2	80-120			

**BLS (EC72601-BS1)**

Prepared & Analyzed: 03/26/07

Benzene	0.0442	0.00100	mg/L	0.0500		88.4	80-120			
Toluene	0.0431	0.00100	"	0.0500		86.2	80-120			
Ethylbenzene	0.0419	0.00100	"	0.0500		83.8	80-120			
Xylene (p/m)	0.0890	0.00100	"	0.100		89.0	80-120			
Xylene (o)	0.0450	0.00100	"	0.0500		90.0	80-120			
Surrogate: a,a,a-Trifluorotoluene	40.5		ug/l	50.0		81.0	80-120			
Surrogate: 4-Bromofluorobenzene	43.5		"	50.0		87.0	80-120			

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1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EC72601 - EPA 5030C (GC)**

**Calibration Check (EC72601-CCV1)**

Prepared & Analyzed: 03/26/07

Benzene	45.8		ug/l	50.0		91.6	80-120			
Toluene	44.4		"	50.0		88.8	80-120			
Ethylbenzene	45.9		"	50.0		91.8	80-120			
Xylene (p/m)	89.2		"	100		89.2	80-120			
Xylene (o)	45.9		"	50.0		91.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	40.8		"	50.0		81.6	80-120			
Surrogate: 4-Bromofluorobenzene	43.9		"	50.0		87.8	80-120			

**Duplicate (EC72601-DUP1)**

Source: 7C23001-10

Prepared & Analyzed: 03/26/07

Benzene	ND	0.00100	mg/L		ND				20	
Toluene	0.00353	0.00100	"		0.00330			6.73	20	
Ethylbenzene	0.000521	0.00100	"		0.000349			39.5	20	R4
Xylene (p/m)	0.00502	0.00100	"		0.00430			15.5	20	
Xylene (o)	0.00123	0.00100	"		0.000981			22.5	20	R5
Surrogate: a,a,a-Trifluorotoluene	41.0		ug/l	50.0		82.0	80-120			
Surrogate: 4-Bromofluorobenzene	42.4		"	50.0		84.8	80-120			

**Matrix Spike (EC72601-MS1)**

Source: 7C23001-10

Prepared & Analyzed: 03/26/07

Benzene	0.0449	0.00100	mg/L	0.0500	ND	89.8	80-120			
Toluene	0.0470	0.00100	"	0.0500	0.00330	87.4	80-120			
Ethylbenzene	0.0424	0.00100	"	0.0500	0.000349	84.1	80-120			
Xylene (p/m)	0.0924	0.00100	"	0.100	0.00430	88.1	80-120			
Xylene (o)	0.0464	0.00100	"	0.0500	0.000981	90.8	80-120			
Surrogate: a,a,a-Trifluorotoluene	40.0		ug/l	50.0		80.0	80-120			
Surrogate: 4-Bromofluorobenzene	44.7		"	50.0		89.4	80-120			

Environmental Lab of Texas

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1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### Notes and Definitions

R5 RPD is outside of historic values  
R4 Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:



Date: 3/28/2007

Brent Barron, Laboratory Director/Corp. Technical Director  
Celey D. Keene, Org. Tech Director  
Raland K. Tuttle, Laboratory Consultant

James Mathis, QA/QC Officer  
Jeanne Mc Murrey, Inorg. Tech Director

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Page 7 of 7



# Environmental Lab of Texas

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

Client: Plain  
 Date/ Time: 3/24/07 11:30  
 Lab ID #: 70200  
 Initials: CK

### Sample Receipt Checklist

Client Initials

#1 Temperature of container/ cooler?	Yes	No	1.0 °C	
#2 Shipping container in good condition?	<del>Yes</del>	No		
#3 Custody Seals intact on shipping container/ cooler?	<del>Yes</del>	No	Not Present	
#4 Custody Seals intact on sample bottles/ container?	<del>Yes</del>	No	Not Present	
#5 Chain of Custody present?	<del>Yes</del>	No		
#6 Sample instructions complete of Chain of Custody?	<del>Yes</del>	No		
#7 Chain of Custody signed when relinquished/ received?	<del>Yes</del>	No		
#8 Chain of Custody agrees with sample label(s)?	<del>Yes</del>	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	<del>Yes</del>	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	<del>Yes</del>	No		
#11 Containers supplied by ELOT?	<del>Yes</del>	No		
#12 Samples in proper container/ bottle?	<del>Yes</del>	No	See Below	
#13 Samples properly preserved?	<del>Yes</del>	No	See Below	
#14 Sample bottles intact?	<del>Yes</del>	No		
#15 Preservations documented on Chain of Custody?	<del>Yes</del>	No		
#16 Containers documented on Chain of Custody?	<del>Yes</del>	No		
#17 Sufficient sample amount for indicated test(s)?	<del>Yes</del>	No	See Below	
#18 All samples received within sufficient hold time?	<del>Yes</del>	No	See Below	
#19 Subcontract of sample(s)?	Yes	No	<del>Not Applicable</del>	
#20 VOC samples have zero headspace?	<del>Yes</del>	No	Not Applicable	

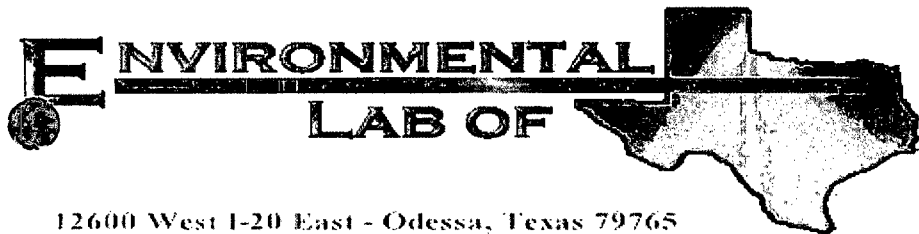
### Variance Documentation

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



12600 West I-20 East - Odessa, Texas 79765

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## Analytical Report

**Prepared for:**

Camille Reynolds

Plains All American EH & S

1301 S. County Road 1150

Midland, TX 79706-4476

Project: Lovington Gathering WTI

Project Number: SRS: 2006-142

Location: Lea County, NM

Lab Order Number: 7F06013

Report Date: 06/11/07

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-4	7F06013-01	Water	05/30/07 14:00	06-06-2007 12:21
MW-5	7F06013-02	Water	05/30/07 14:50	06-06-2007 12:21
MW-6	7F06013-03	Water	05/30/07 15:45	06-06-2007 12:21
MW-8	7F06013-04	Water	05/31/07 09:20	06-06-2007 12:21
MW-1	7F06013-05	Water	05/31/07 10:15	06-06-2007 12:21
MW-2	7F06013-06	Water	05/31/07 10:55	06-06-2007 12:21
MW-7	7F06013-07	Water	05/31/07 11:50	06-06-2007 12:21
MW-3	7F06013-08	Water	05/31/07 12:30	06-06-2007 12:21

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**MW-4 (7F06013-01) Water**

Benzene	ND	0.00100	mg/L	1	EF70802	06/08/07	06/09/07	EPA 8021B	
<b>Toluene</b>	<b>0.00114</b>	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		108 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		92.4 %	80-120		"	"	"	"	

**MW-5 (7F06013-02) Water**

Benzene	ND	0.00100	mg/L	1	EF70802	06/08/07	06/09/07	EPA 8021B	
<b>Toluene</b>	<b>1 [0.000722]</b>	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		109 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		91.6 %	80-120		"	"	"	"	

**MW-6 (7F06013-03) Water**

Benzene	ND	0.00100	mg/L	1	EF70802	06/08/07	06/11/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		101 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.8 %	80-120		"	"	"	"	

**MW-8 (7F06013-04) Water**

Benzene	ND	0.00100	mg/L	1	EF70802	06/08/07	06/09/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		110 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.0 %	80-120		"	"	"	"	

Environmental Lab of Texas

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*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.*

Page 2 of 6



Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**MW-1 (7F06013-05) Water**

Benzene	ND	0.00100	mg/L	1	EF70802	06/08/07	06/09/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		109 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	80-120	"	"	"	"	"	

**MW-2 (7F06013-06) Water**

<b>Benzene</b>	<b>0.00546</b>	0.00100	mg/L	1	EF70802	06/08/07	06/09/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		116 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	80-120	"	"	"	"	"	

**MW-7 (7F06013-07) Water**

<b>Benzene</b>	<b>0.0395</b>	0.00100	mg/L	1	EF70802	06/08/07	06/09/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.00534</b>	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		112 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	80-120	"	"	"	"	"	

**MW-3 (7F06013-08) Water**

<b>Benzene</b>	<b>1.66</b>	0.00500	mg/L	5	EF70802	06/08/07	06/09/07	EPA 8021B	
<b>Toluene</b>	<b>0.0102</b>	0.00500	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0348</b>	0.00500	"	"	"	"	"	"	
<b>Xylene (p/m)</b>	<b>0.0296</b>	0.00500	"	"	"	"	"	"	
<b>Xylene (o)</b>	<b>0.0122</b>	0.00500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		105 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.4 %	80-120	"	"	"	"	"	

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Page 3 of 6

Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF70802 - EPA 5030C (GC)**

**Blank (EF70802-BLK1)**

Prepared & Analyzed: 06/08/07

Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	54.1		ug/l	50.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	45.4		"	50.0		90.8	80-120			

**LCS (EF70802-BS1)**

Prepared & Analyzed: 06/08/07

Benzene	0.0548	0.00100	mg/L	0.0500		110	80-120			
Toluene	0.0556	0.00100	"	0.0500		111	80-120			
Ethylbenzene	0.0543	0.00100	"	0.0500		109	80-120			
Xylene (p/m)	0.101	0.00100	"	0.100		101	80-120			
Xylene (o)	0.0569	0.00100	"	0.0500		114	80-120			
Surrogate: a,a,a-Trifluorotoluene	54.6		ug/l	50.0		109	80-120			
Surrogate: 4-Bromofluorobenzene	51.7		"	50.0		103	80-120			

**Calibration Check (EF70802-CCV1)**

Prepared: 06/08/07 Analyzed: 06/09/07

Benzene	0.0576		mg/L	0.0500		115	80-120			
Toluene	0.0567		"	0.0500		113	80-120			
Ethylbenzene	0.0537		"	0.0500		107	80-120			
Xylene (p/m)	0.0999		"	0.100		99.9	80-120			
Xylene (o)	0.0573		"	0.0500		115	80-120			
Surrogate: a,a,a-Trifluorotoluene	57.9		ug/l	50.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	53.0		"	50.0		106	80-120			

**Matrix Spike (EF70802-MS1)**

Source: 7F06019-03

Prepared: 06/08/07 Analyzed: 06/09/07

Benzene	0.0598	0.00100	mg/L	0.0500	ND	120	80-120			
Toluene	0.0593	0.00100	"	0.0500	ND	119	80-120			
Ethylbenzene	0.0584	0.00100	"	0.0500	ND	117	80-120			
Xylene (p/m)	0.107	0.00100	"	0.100	ND	107	80-120			
Xylene (o)	0.0614	0.00100	"	0.0500	ND	123	80-120			M1
Surrogate: a,a,a-Trifluorotoluene	58.4		ug/l	50.0		117	80-120			
Surrogate: 4-Bromofluorobenzene	56.2		"	50.0		112	80-120			

Environmental Lab of Texas  
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Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

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

**Batch EF70802 - EPA 5030C (GC)**

**Matrix Spike Dup (EF70802-MSD1)**

**Source: 7F06019-03**

Prepared: 06/08/07 Analyzed: 06/09/07

Benzene	0.0565	0.00100	mg/L	0.0500	ND	113	80-120	6.01	20	
Toluene	0.0566	0.00100	"	0.0500	ND	113	80-120	5.17	20	
Ethylbenzene	0.0556	0.00100	"	0.0500	ND	111	80-120	5.26	20	
Xylene (p/m)	0.102	0.00100	"	0.100	ND	102	80-120	4.78	20	
Xylene (o)	0.0584	0.00100	"	0.0500	ND	117	80-120	5.00	20	
Surrogate: a,a,a-Trifluorotoluene	58.3		ug/l	50.0		117	80-120			
Surrogate: 4-Bromofluorobenzene	54.2		"	50.0		108	80-120			

Environmental Lab of Texas

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Plains All American EH & S  
1301 S. County Road 1150  
Midland TX, 79706-4476

Project: Lovington Gathering WTI  
Project Number: SRS: 2006-142  
Project Manager: Camille Reynolds

Fax: (432) 687-4914

### Notes and Definitions

M1 The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:



Date:

6/11/2007

Brent Barron, Laboratory Director/Corp. Technical Director  
Celey D. Keene, Org. Tech Director  
Raland K. Tuttle, Laboratory Consultant

James Mathis, QA/QC Officer  
Jeanne Mc Murrey, Inorg. Tech Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

A Xenco Laboratories Company

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.*

Page 6 of 6



# Environmental Lab of Texas

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

Client: Plains  
 Date/ Time: 6-6-07 12:21  
 Lab ID #: 7F06013  
 Initials: AL

### Sample Receipt Checklist

Client Initials

#1 Temperature of container/ cooler?	<u>Yes</u>	No	<u>4.5</u> °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	<u>Not Present</u>	
#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>	No	<u>Not Applicable</u>	
#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 290458**

**for**

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

**Project Manager: Camille Reynolds**

**Lovington Gathering WTI**

**2006-142**

**03-OCT-07**



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

**A Xenco Laboratories Company**

Texas certification numbers:

Houston, TX T104704215

Florida certification numbers:

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

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



03-OCT-07

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

Reference: XENCO Report No: **290458**  
**Lovington Gathering WTI**  
Project Address: Lea County, NM

**Camille Reynolds:**

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 290458. 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. 290458 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**

Odessa Laboratory Director

*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 - Latin America





## Sample Cross Reference 290458

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-9	W	Sep-25-07 10:00		290458-001
MW-4	W	Sep-25-07 10:50		290458-002
MW-5	W	Sep-25-07 11:35		290458-003
MW-6	W	Sep-25-07 12:15		290458-004
MW-8	W	Sep-25-07 13:40		290458-005
MW-1	W	Sep-25-07 14:24		290458-006
MW-2	W	Sep-25-07 15:07		290458-007
MW-7	W	Sep-25-07 15:42		290458-008
MW-3	W	Sep-25-07 16:15		290458-009



# Certificate of Analysis Summary 290458

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

Project Id: 2006-142  
Contact: Camille Reynolds  
Project Location: Lea County, NM

Project Name: Lovington Gathering WTI

Date Received in Lab: Fri Sep-28-07 01:45 pm

Report Date: 03-OCT-07

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	290458-001	290458-002	290458-003	290458-004	290458-005	290458-006
	Field Id:	MW-9	MW-4	MW-5	MW-6	MW-8	MW-1
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	Sep-25-07 10:00	Sep-25-07 10:50	Sep-25-07 11:35	Sep-25-07 12:15	Sep-25-07 13:40	Sep-25-07 14:24
BTEX by EPA 8021B	Extracted:	Oct-02-07 16:30	Oct-02-07 16:30	Oct-02-07 16:30	Oct-02-07 16:30	Oct-02-07 16:30	Oct-02-07 16:30
	Analyzed:	Oct-02-07 20:05	Oct-02-07 20:22	Oct-02-07 20:38	Oct-02-07 20:55	Oct-02-07 21:28	Oct-02-07 21:45
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Benzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Toluene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
m,p-Xylene		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total Xylenes		ND	ND	ND	ND	ND	ND
Total BTEX		ND	ND	ND	ND	ND	ND

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 290458**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**


Project Id: 2006-142  
Contact: Camille Reynolds  
Project Location: Lea County, NM

Date Received in Lab: Fri Sep-28-07 01:45 pm  
Report Date: 03-OCT-07  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	290458-007	290458-008	290458-009	
	Field Id:	MW-2	MW-7	MW-3	
	Depth:				
	Matrix:	WATER	WATER	WATER	
	Sampled:	Sep-25-07 15:07	Sep-25-07 15:42	Sep-25-07 16:15	
BTEX by EPA 8021B	Extracted:	Oct-02-07 16:30	Oct-02-07 16:30	Oct-03-07 10:16	
	Analyzed:	Oct-02-07 22:01	Oct-02-07 22:18	Oct-03-07 12:43	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	
Benzene		0.0503 0.0010	0.0370 0.0010	0.4943 0.0010	
Toluene		ND 0.0010	ND 0.0010	0.0239 0.0010	
Ethylbenzene		ND 0.0010	ND 0.0010	0.0209 0.0010	
m,p-Xylene		0.0030 0.0020	0.0306 0.0020	0.0140 0.0020	
o-Xylene		ND 0.0010	ND 0.0010	0.0071 0.0010	
Total Xylenes		0.003	0.0306	0.0211	
Total BTEX		0.0533	0.0676	0.5602	

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.

\* Outside XENCO'S scope of NELAC Accreditation

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(201) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555



## Form 2 - Surrogate Recoveries

Project Name: Lovington Gathering WTI

Work Order #: 290458

Project ID: 2006-142

Lab Batch #: 705584

Sample: 290458-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 705584

Sample: 290458-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 705584

Sample: 290458-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 705584

Sample: 290458-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 705584

Sample: 290458-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0255	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: Lovington Gathering WTI

Work Order #: 290458

Project ID: 2006-142

Lab Batch #: 705584

Sample: 290458-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 705584

Sample: 290458-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0260	0.0300	87	80-120	

Lab Batch #: 705584

Sample: 290458-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 705584

Sample: 290458-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 705584

Sample: 290458-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	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: Lovington Gathering WTI

Work Order #: 290458

Project ID: 2006-142

Lab Batch #: 705584

Sample: 500015-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 705584

Sample: 500015-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 705584

Sample: 500015-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 705607

Sample: 290458-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 705607

Sample: 500032-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	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: Lovington Gathering WTI

Work Order #: 290458

Project ID: 2006-142

Lab Batch #: 705607

Sample: 500032-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 705607

Sample: 500032-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0265	0.0300	88	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.





BS / BSL Recoveries

Project Name: Lovington Gathering WTI

Work Order #: 290458

Analyst: SHE

Lab Batch ID: 705584

Sample: 500015-1-BKS

Units: mg/L

Date Prepared: 10/02/2007

Batch #: 1

Project ID: 2006-142

Date Analyzed: 10/02/2007

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Units: mg/L										
	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	0.1061	106	0.1	0.1072	107	1	70-125	25
	Toluene	ND	0.1000	0.1047	105	0.1	0.1058	106	1	70-125	25
	Ethylbenzene	ND	0.1000	0.1047	105	0.1	0.1061	106	1	71-129	25
	m,p-Xylene	ND	0.2000	0.2099	105	0.2	0.2123	106	1	70-131	25
	o-Xylene	ND	0.1000	0.1022	102	0.1	0.1033	103	1	71-133	25

Date Prepared: 10/03/2007

Batch #: 1

Date Analyzed: 10/03/2007

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Benzene	ND	0.1000	0.0940	94	0.1	0.0948	95	1	70-125	25
	Toluene	ND	0.1000	0.0924	92	0.1	0.0928	93	0	70-125	25
	Ethylbenzene	ND	0.1000	0.0918	92	0.1	0.0929	93	1	71-129	25
	m,p-Xylene	ND	0.2000	0.1832	92	0.2	0.1860	93	2	70-131	25
	o-Xylene	ND	0.1000	0.0896	90	0.1	0.0911	91	2	71-133	25

Relative Percent Difference  $RPD = 200 * [(D-F)/(D+F)]$

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 - MSD Recoveries

Project Name: Lovington Gathering WTI

Work Order #: 290458

Lab Batch ID: 705584

Date Analyzed: 10/03/2007

Reporting Units: mg/L

Project ID: 2006-142

QC-Sample ID: 290458-001 S

Batch #: 1 Matrix: Water

Date Prepared: 10/02/2007

Analyst: SHE

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	0.1000	0.0935	94	0.1000	0.0969	97	3	70-125	25	
	Toluene	0.1000	0.0915	92	0.1000	0.0941	94	2	70-125	25	
	Ethylbenzene	0.1000	0.2076	208	0.1000	0.2098	210	1	71-129	25	X
	m,p-Xylene	0.2000	0.1795	90	0.2000	0.1814	91	1	70-131	25	
	o-Xylene	0.1000	0.0897	90	0.1000	0.0905	91	1	71-133	25	

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

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

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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

**Project Name: LOVINGTON GATHERING WTI**

Project #: 2005-142

Project Loc.: Lea County, NM

PQ #: PAA - C. J. Reynolds

**Fax No:**

e-mail: [kdutton@basinenv.com](mailto:kdutton@basinenv.com)

(A)uditing and

ORDER #: 2510458

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Total # of Containers	H <sub>2</sub> O <sub>2</sub>	HCl (N/A XZ)	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	Name	Other (Specify)	Drenching Water (L=Large) CW = Groundwater S=Surface Mud=Unknown Specify Cont.	TPT# 418.1 B015M B0	Carcens (Ca Mgd, Ha, K)	Ardians (CL SQM, Alkalinity)	SAR / ESP / CEC	Metals As Ag Ba Cd Cr Pb Hg	Volatiles	Semi-volatiles	RCL	NORM	RUSH TAT pre-determined X	Standard TAT
Q1	MW-9			25-Sep-07	1000	2	X	X					GW							X			
Q2	MW-4			26-Sep-07	1060	2	X	X					GW							X			
Q3	MW-5			25-Sep-07	1135	2	X	X					GW							X			
Q4	MW-6			25-Sep-07	1216	2	X	X					GW							X			
Q5	MW-8			26-Sep-07	1340	2	X	X					GW							X			
Q6	MW-1			25-Sep-07	1424	2	X	X					GW							X			
Q7	MW-2			26-Sep-07	1507	2	X	X					GW							X			
Q8	MW-7			26-Sep-07	1642	2	X	X					GW							X			
Q9	MW-3			25-Sep-07	1815	2	X	X					GW							X			

Special instructions:

Relinquished by

2

Reimbursed by:

10

Published by:

2074

1

10  
12  
14  
16

# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Basin 1 Plains  
 Date/ Time: 9-28-07 1:45  
 Lab ID #: 2910458  
 Initials: AL

## Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	2-5 °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

# **Analytical Report 293980**

**for**

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

**Project Manager: JIMMY BRYANT**

**Lovington Gathering WTI**

**2006-142**

**10-DEC-07**



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

**A Xenco Laboratories Company**

Texas certification numbers:  
Houston, TX T104704215

Florida certification numbers:  
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

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



10-DEC-07

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

Reference: XENCO Report No: **293980**  
**Lovington Gathering WTI**  
Project Address: Lea County, NM

**JIMMY 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 293980. 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. 293980 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*

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## Sample Cross Reference 293980



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-9	W	Nov-30-07 09:15		293980-001
MW-4	W	Nov-30-07 10:35		293980-002
MW-5	W	Nov-30-07 11:45		293980-003
MW-6	W	Nov-30-07 12:40		293980-004
MW-8	W	Nov-30-07 15:25		293980-005
MW-1	W	Nov-30-07 11:10		293980-006
MW-2	W	Nov-30-07 13:50		293980-007
MW-7	W	Nov-30-07 14:30		293980-008
MW-3	W	Nov-30-07 15:10		293980-009



**Certificate of Analysis: Summary 293980**  
**PLAINS ALL AMERICA E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**


Project Id: 2006-142  
Contact: JIMMY BRYANT  
Project Location: Lea County, NM

Date Received in Lab: Tue Dec-04-07 12:45 pm  
Report Date: 10-DEC-07  
Project Manager: Brent Barron, IL

<i>Analysis Requested</i>		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	293980-001	293980-002	293980-003	293980-004	293980-005	293980-006
<b>BTEX by EPA 8021B</b>							MW-9	MW-4	MW-5	MW-6	MW-8	MW-1
							WATER	WATER	WATER	WATER	WATER	WATER
							Nov-30-07 09:15	Nov-30-07 10:35	Nov-30-07 11:45	Nov-30-07 12:40	Nov-30-07 15:25	Nov-30-07 11:10
		<i>Extracted:</i>					Dec-05-07 11:19	Dec-05-07 11:19	Dec-05-07 11:19	Dec-05-07 11:19	Dec-05-07 11:19	Dec-05-07 11:19
		<i>Analyzed:</i>					Dec-05-07 19:57	Dec-05-07 20:14	Dec-05-07 20:30	Dec-05-07 20:47	Dec-05-07 21:03	Dec-05-07 21:20
		<i>Units/RL:</i>					mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Benzene							ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Toluene							ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
Ethylbenzene							ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
m,p-Xylenes							ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
o-Xylene							ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Xylenes, Total							ND	ND	ND	ND	ND	ND
Total BTEX							ND	ND	ND	ND	ND	ND

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 user 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 293980  
PLAINS ALL AMERICAN E&S, Midland, TX


Project Id: 2006-142  
Contact: JIMMY BRYANT  
Project Location: Lea County, NM

Date Received in Lab: Tue Dec-04-07 12:45 pm  
Report Date: 10-DEC-07  
Project Manager: Brent Barron, II

Analysis Requested	293980-007		293980-008		293980-009	
	Lab Id:	Field Id:	Lab Id:	Field Id:	Lab Id:	Field Id:
	MW-2		MW-7		MW-3	
	WATER		WATER		WATER	
	Nov-30-07 13:50		Nov-30-07 14:30		Nov-30-07 15:10	
BTEX by EPA 8021B	Dec-06-07 12:45		Dec-05-07 11:19		Dec-06-07 12:45	
	Dec-06-07 16:10		Dec-05-07 21:53		Dec-06-07 17:01	
	mg/L	RL	mg/L	RL	mg/L	RL
	0.9283	0.0050	0.0264	0.0010	5.937	0.0200
	ND	0.0100	ND	0.0020	0.2786	0.0400
Benzene	ND	0.0050	ND	0.0010	0.2732	0.0200
Toluene	0.0366	0.0100	0.0221	0.0020	0.1410	0.0400
Ethylbenzene	ND	0.0050	ND	0.0010	0.0740	0.0200
m,p-Xylenes	0.0366	0.0100	0.0221	0.0020	0.215	
o-Xylene	ND	0.0050	ND	0.0010	6.7038	
Xylenes, Total	0.0366		0.0221			
Total BTEX	0.9649		0.0485			

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.

\* Outside XENCO'S scope of NELAC Accreditation

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*Certified and approved by numerous States and Agencies.*

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(305) 823-8500	(305) 823-8555



## Form 2 - Surrogate Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 293980

Project ID: 2006-142

Lab Batch #: 709873

Sample: 293980-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 709873

Sample: 293980-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 709873

Sample: 293980-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 709873

Sample: 293980-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0254	0.0300	85	80-120	

Lab Batch #: 709873

Sample: 293980-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	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: Lovington Gathering WTI

Work Order #: 293980

Project ID: 2006-142

Lab Batch #: 709873

Sample: 293980-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 709873

Sample: 293980-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 709873

Sample: 293980-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 709873

Sample: 293980-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0254	0.0300	85	80-120	

Lab Batch #: 709873

Sample: 502210-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0290	0.0300	97	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: Lovington Gathering WTI



Work Order #: 293980

Project ID: 2006-142

Lab Batch #: 709873

Sample: 502210-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 709873

Sample: 502210-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0283	0.0300	94	80-120	

Lab Batch #: 710056

Sample: 293896-054 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 710056

Sample: 293896-054 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 710056

Sample: 293980-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	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: Lovington Gathering WTI



Work Order #: 293980

Project ID: 2006-142

Lab Batch #: 710056

Sample: 293980-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 710056

Sample: 502290-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 710056

Sample: 502290-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 710056

Sample: 502290-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0273	0.0300	91	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.



Project Name: Lovington Gathering WTI

Work Order #: 293980

Analyst: SHE

Lab Batch ID: 709873

Sample: 502210-1-BKS

Date Prepared: 12/05/2007

Batch #: 1

Project ID: 2006-142

Date Analyzed: 12/05/2007

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/L												
BTEX by EPA 8021B		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	0.1016	102	0.1	0.0964	96	5	70-125	25	
Toluene		ND	0.1000	0.1021	102	0.1	0.0973	97	5	70-125	25	
Ethylbenzene		ND	0.1000	0.1050	105	0.1	0.1004	100	4	71-129	25	
m,p-Xylenes		ND	0.2000	0.2068	103	0.2	0.1977	99	4	70-131	25	
o-Xylene		ND	0.1000	0.1038	104	0.1	0.1000	100	4	71-133	25	

Analyst: SHE

Lab Batch ID: 710056

Sample: 502290-1-BKS

Date Prepared: 12/06/2007

Batch #: 1

Date Analyzed: 12/06/2007

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B		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	0.0870	87	0.1	0.0889	89	2	70-125	25	
Toluene		ND	0.1000	0.0872	87	0.1	0.0892	89	2	70-125	25	
Ethylbenzene		ND	0.1000	0.0907	91	0.1	0.0924	92	2	71-129	25	
m,p-Xylenes		ND	0.2000	0.1781	89	0.2	0.1813	91	2	70-131	25	
o-Xylene		ND	0.1000	0.0895	90	0.1	0.0918	92	3	71-133	25	

Relative Percent Difference RPD =  $200 * [(D-F)/(D+F)]$

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: Lovington Gathering WTI

Work Order #: 293980

Lab Batch ID: 709873

Date Analyzed: 12/05/2007

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 293980-001 S

Batch #: 1 Matrix: Water

Date Prepared: 12/05/2007

Analyst: SHE

Reporting Units: mg/L											
BTEX by EPA 8021B  Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Benzene	ND	0.1000	0.0934	93	0.1000	0.0944	94	1	70-125	25
	Toluene	ND	0.1000	0.0922	92	0.1000	0.0925	93	1	70-125	25
	Ethylbenzene	ND	0.1000	0.0919	92	0.1000	0.0922	92	0	71-129	25
	m,p-Xylenes	ND	0.2000	0.1791	90	0.2000	0.1802	90	0	70-131	25
	o-Xylene	ND	0.1000	0.0917	92	0.1000	0.0917	92	0	71-133	25

Lab Batch ID: 710056

Date Analyzed: 12/06/2007

Reporting Units: mg/L

QC- Sample ID: 293896-054 S

Batch #: 1 Matrix: Water

Date Prepared: 12/06/2007

Analyst: SHE

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	0.0054	0.1000	0.0859	81	0.1000	0.0860	81	0	70-125	25
	Toluene	ND	0.1000	0.0858	86	0.1000	0.0863	86	0	70-125	25
	Ethylbenzene	ND	0.1000	0.0892	89	0.1000	0.0900	90	1	71-129	25
	m,p-Xylenes	ND	0.2000	0.1740	87	0.2000	0.1758	88	1	70-131	25
	o-Xylene	ND	0.1000	0.0901	90	0.1000	0.0910	91	1	71-133	25

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

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



**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

12800 West 1-20 East  
Odessa, Texas 79765

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

Project Name: **LOVINGTON GATHERING WTI**  
Project #: **2006-142**  
Project Loc: **Lea County, NM**

Project #: 2006-142

**Project Loc:** Lea County; NM

PO #: PAA - C. J. Reynolds

Fax No: (505) 398-1429

kdutton@basineny.com

29398

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Total # of Containers	Matrix		Preservation & # of Containers	Total	RUSH TAT (pre-shipment) 2A, 4A, 7A	Standard TAT
							PC	PC				
	MW-9			30-Nov-07	0915	2	X	X	X	X	X	X
	MW-4			30-Nov-07	1035	2	X	X	X	X	X	X
	MW-6			30-Nov-07	1145	2	X	X	X	X	X	X
	MW-5			30-Nov-07	1240	2	X	X	X	X	X	X
	MW-8			30-Nov-07	1525	2	X	X	X	X	X	X
	MW-1			30-Nov-07	1110	2	X	X	X	X	X	X
	MW-2			30-Nov-07	1350	2	X	X	X	X	X	X
	MW-7			30-Nov-07	1430	2	X	X	X	X	X	X
	MW-3			30-Nov-07	1510	2	X	X	X	X	X	X

**Special Instructions:**

Laboratory Comments:

[illegible]

# Environmental Lab of Texas

Variance/Corrective Action Report- Sample Log-In

Client: Basin Enviro. / PAIND  
 Date/ Time: 12/04/07 12:45  
 Lab ID #: 292980  
 Initials: gms

## Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	3.5 °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	Not Present
#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 ELQT?	<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	Not Applicable
#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 299636**

**for**

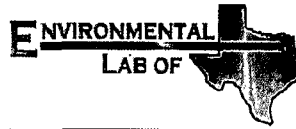
## **PLAINS ALL AMERICAN EH&S**

**Project Manager: Camille Reynolds**

**Lovington Gathering WTI**

**2006-142**

**19-MAR-08**



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

Texas certification numbers:  
Houston, TX T104704215

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



19-MAR-08

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

Reference: XENCO Report No: **299636**  
**Lovington Gathering WTI**  
Project Address: Lea County, NM

**Camille Reynolds:**

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 299636. 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. 299636 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.*

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## Sample Cross Reference 299636



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Mar-11-08 13:25		299636-001
MW-4	W	Mar-11-08 14:00		299636-002
MW-5	W	Mar-11-08 14:40		299636-003
MW-6	W	Mar-11-08 15:15		299636-004
MW-8	W	Mar-11-08 15:50		299636-005
MW-9	W	Mar-11-08 16:40		299636-006
MW-2	W	Mar-12-08 08:00		299636-007
MW-7	W	Mar-12-08 09:00		299636-008
MW-3	W	Mar-12-08 10:00		299636-009

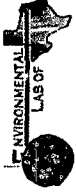


**Project Name:** Lovington Gathering WTI

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 involved for this work order unless otherwise agreed to in writing.

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 299636

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


Project Id: 2006-142  
Contact: Camille Reynolds  
Project Location: Lea County, NM

Project Name: Lovington Gathering WTI  
Date Received in Lab: Fri Mar-14-08 12:10 pm  
Report Date: 19-MAR-08  
Project Manager: Brent Barron, IL

Analysis Requested	Lab Id:		299636-007		299636-008		299636-009	
	Field Id:	Depth:	MW-2	MW-7	MW-3			
	Matrix:		WATER	WATER	WATER			
	Sampled:		Mar-12-08 08:00	Mar-12-08 09:00	Mar-12-08 10:00			
BTX by EPA 8021B	Extracted:		Mar-17-08 08:42	Mar-17-08 08:42	Mar-18-08 10:28			
	Analyzed:		Mar-17-08 18:06	Mar-17-08 18:25	Mar-18-08 15:00			
	Units/RL:		mg/L RL	mg/L RL	mg/L RL			
			0.0955 0.0010	0.0437 0.0010	1.159 0.0050			
Benzene			ND 0.0020	ND 0.0020	0.1073 0.0100			
Toluene			ND 0.0010	ND 0.0010	0.1775 0.0050			
Ethylbenzene			0.0032 0.0020	0.0150 0.0020	0.0662 0.0100			
m,p-Xylenes			ND 0.0010	ND 0.0010	0.1393 0.0050			
o-Xylene			0.0032	0.015	0.2055			
Xylenes, Total			0.0987	0.0587	1.6493			
Total BTX								

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(PQL) and above the SQL(MDL).
- 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.

\* Outside XENCO'S scope of NELAC Accreditation

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11381 Meadowglen Lane Suite L Houston, Tx 77082-2647  
9701 Harry Hines Blvd , Dallas, TX 75220  
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238  
2505 N. Falkenburg Rd., Tampa, FL 33619  
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(281) 589-0692	(281) 589-0695
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477





## Form 2 - Surrogate Recoveries

Project Name: Lovington Gathering WTI



Work Order #: 299636

Project ID: 2006-142

Lab Batch #: 717332

Sample: 299559-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

Lab Batch #: 717332

Sample: 299559-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 717332

Sample: 299636-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 717332

Sample: 299636-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 717332

Sample: 299636-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	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: Lovington Gathering WTI



Work Order #: 299636

Project ID: 2006-142

Lab Batch #: 717332

Sample: 299636-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 717332

Sample: 299636-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 717332

Sample: 299636-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 717332

Sample: 299636-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 717332

Sample: 299636-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	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: Lovington Gathering WTI



Work Order #: 299636

Project ID: 2006-142

Lab Batch #: 717332

Sample: 505989-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 717332

Sample: 505989-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0342	0.0300	114	80-120	

Lab Batch #: 717332

Sample: 505989-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0330	0.0300	110	80-120	

Lab Batch #: 717545

Sample: 299636-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 717545

Sample: 299685-002 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	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: Lovington Gathering WTI



Work Order #: 299636

Project ID: 2006-142

Lab Batch #: 717545

Sample: 299685-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 717545

Sample: 506115-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 717545

Sample: 506115-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 717545

Sample: 506115-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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.



**Project Name: Lovington Gathering WTI**

Work Order #: 299636

Analyst: SHE

Lab Batch ID: 717332

Sample: 505989-1-BKS

Date Prepared: 03/17/2008

Batch #: 1

Project ID: 2006-142

Date Analyzed: 03/17/2008

Matrix: Water

Units: mg/L

Units: mg/L											
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	0.0980	98	0.1	0.0942	94	4	70-125	25
	Toluene	ND	0.1000	0.0979	98	0.1	0.0943	94	4	70-125	25
	Ethylbenzene	ND	0.1000	0.1001	100	0.1	0.0967	97	3	71-129	25
	m,p-Xylenes	ND	0.2000	0.2009	100	0.2	0.1930	97	4	70-131	25
	o-Xylene	ND	0.1000	0.1073	107	0.1	0.1022	102	5	71-133	25

Analyst: SHE

Lab Batch ID: 717545

Sample: 506115-1-BKS

Date Prepared: 03/18/2008

Batch #: 1

Date Analyzed: 03/18/2008

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY														
Units: mg/L	BTEX by EPA 8021B	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]					
</														

Relative Percent Difference RPD =  $200 * [(D-F)/(D+F)]$

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: Lovington Gathering WTI

Work Order #: 299636

Lab Batch ID: 717332

Date Analyzed: 03/17/2008

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 299559-001 S

Batch #: 1 Matrix: Water

Date Prepared: 03/17/2008

Analyst: SHE

## 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	0.0054	0.1000	0.0873	82	0.1000	0.0839	79	4	70-125	25	
Toluene	ND	0.1000	0.0893	89	0.1000	0.0849	85	5	70-125	25	
Ethylbenzene	ND	0.1000	0.0935	94	0.1000	0.0885	89	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.1856	93	0.2000	0.1753	88	6	70-131	25	
o-Xylene	ND	0.1000	0.0971	97	0.1000	0.0913	91	6	71-133	25	

Lab Batch ID: 717545

Date Analyzed: 03/18/2008

Reporting Units: mg/L

QC- Sample ID: 299685-002 S

Batch #: 1 Matrix: Water

Date Prepared: 03/18/2008

Analyst: SHE

## 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	0.0120	0.1000	0.0889	77	0.1000	0.0953	83	8	70-125	25	
Toluene	ND	0.1000	0.0801	80	0.1000	0.0838	84	5	70-125	25	
Ethylbenzene	ND	0.1000	0.0853	85	0.1000	0.0893	89	5	71-129	25	
m,p-Xylenes	ND	0.2000	0.1693	85	0.2000	0.1758	88	3	70-131	25	
o-Xylene	ND	0.1000	0.0884	88	0.1000	0.0921	92	4	71-133	25	

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

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

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

**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

12600 West I-20 East  
Odessa, Texas 79765

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

Project Name: LOVINGTON GATHERING WTI

Project #: 2006-142

Project Loc: Lea County, NM

PO #: PAA - C. J. Reynolds

Fax No: (505) 398-1429

fax NO: (505) 390-1920  
e-mail: [kdutton@basinenv.com](mailto:kdutton@basinenv.com)

**Report Format:**

☐ INDEX
 ☐ REFERENCES

e-mail: [kdutton@basinenv.com](mailto:kdutton@basinenv.com)

[illegible]

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

Client: Plains  
Date/ Time: 3-14-08 12:10  
Lab ID #: 2-77638  
Initials: AL

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	<u>S.C.</u> °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



**Analytical Report 305940**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Camille Reynolds**

**Lovington Gathering WTI**

**2006-142**

**19-JUN-08**



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

Texas certification numbers:  
Houston, TX T104704215

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



19-JUN-08

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

Reference: XENCO Report No: **305940**  
**Lovington Gathering WTI**  
Project Address: Lea County, NM

**Camille Reynolds:**

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 305940. 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. 305940 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,

A handwritten signature in black ink, appearing to read "Brent Barron, II", written over a horizontal line.

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 305940



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Jun-14-08 13:00		305940-001
MW-4	W	Jun-14-08 13:15		305940-002
MW-5	W	Jun-14-08 13:30		305940-003
MW-6	W	Jun-14-08 13:45		305940-004
MW-8	W	Jun-14-08 13:55		305940-005
MW-9	W	Jun-14-08 14:10		305940-006
MW-2	W	Jun-14-08 14:20		305940-007
MW-7	W	Jun-14-08 15:30		305940-008
MW-3	W	Jun-14-08 15:50		305940-009



**Certificate of Analysis Summary 305940**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**


Project Id: 2006-142  
Contact: Camille Reynolds  
Project Location: Lea County, NM

Date Received in Lab: Mon Jun-16-08 05:05 pm  
Report Date: 19-JUN-08  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	305940-001	305940-002	305940-003	305940-004	305940-005	305940-006
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL:	MW-1 WATER Jun-14-08 13:00 Jun-17-08 16:15 Jun-17-08 19:26 mg/L RL ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 ND 0.0010 ND ND	MW-4 WATER Jun-14-08 13:15 Jun-17-08 16:15 Jun-17-08 19:50 mg/L RL ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 ND 0.0010 ND ND	MW-5 WATER Jun-14-08 13:30 Jun-17-08 16:15 Jun-17-08 20:14 mg/L RL ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 ND 0.0010 ND ND	MW-6 WATER Jun-14-08 13:45 Jun-17-08 16:15 Jun-17-08 20:38 mg/L RL ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 ND 0.0010 ND ND	MW-8 WATER Jun-14-08 13:55 Jun-17-08 16:15 Jun-17-08 21:02 mg/L RL 0.0087 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0087	MW-9 WATER Jun-14-08 14:10 Jun-17-08 16:15 Jun-17-08 21:26 mg/L RL ND 0.0010 ND 0.0020 ND 0.0010 ND 0.0020 ND 0.0010 ND ND
BTEX by EPA 8021B							
Benzene							
Toluene							
Ethylbenzene							
m,p-Xylenes							
o-Xylene							
Total Xylenes							
Total BTEX							

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 305940**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**

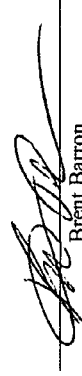
Project Id: 2006-142  
Contact: Camille Reynolds  
Project Location: Lea County, NM

Date Received in Lab: Mon Jun-16-08 05:05 pm  
Report Date: 19-JUN-08  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	305940-007	305940-008	305940-009		
	Field Id: Depth: Matrix: Sampled:	MW-2 WATER Jun-14-08 14:20	MW-7 WATER Jun-14-08 15:30	MW-3 WATER Jun-14-08 15:50		
BTX by EPA 8021B	Extracted:	Jun-17-08 16:15	Jun-17-08 16:15	Jun-17-08 16:15		
	Analyzed:	Jun-17-08 21:49	Jun-17-08 22:13	Jun-17-08 22:37		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL		
	Benzene	0.0033 0.0010	0.1388 0.0010	0.2148 0.0010		
	Toluene	ND 0.0020	ND 0.0020	0.0025 0.0020		
Ethylbenzene		ND 0.0010	ND 0.0010	0.0071 0.0010		
	m,p-Xylenes	ND 0.0020	0.0166 0.0020	0.0123 0.0020		
	o-Xylene	ND 0.0010	ND 0.0010	0.0059 0.0010		
Total Xylenes		ND	0.0166	0.0182		
Total BTX		0.0033	0.1554	0.2426		

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(PQL) and above the SQL(MDL).
- 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.

\* Outside XENCO'S scope of NELAC Accreditation

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11381 Meadowglen Lane Suite L Houston, Tx 77082-2647  
9701 Harry Hines Blvd , Dallas, TX 75220  
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238  
2505 N. Falkenburg Rd., Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
6017 Financial Dr., Norcross, GA 30071

Phone	Fax
(281) 589-0692	(281) 589-0695
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



## Form 2 - Surrogate Recoveries

Project Name: Lovington Gathering WTI



Work Order #: 305940

Project ID: 2006-142

Lab Batch #: 725775

Sample: 305940-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0350	0.0300	117	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 725775

Sample: 305940-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 725775

Sample: 305940-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 725775

Sample: 305940-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0346	0.0300	115	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 725775

Sample: 305940-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	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: Lovington Gathering WTI



Work Order #: 305940

Project ID: 2006-142

Lab Batch #: 725775

Sample: 305940-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 725775

Sample: 305940-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 725775

Sample: 305940-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 725775

Sample: 305940-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

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	0.0296	0.0300	99	80-120	

Lab Batch #: 725775

Sample: 305940-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	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: Lovington Gathering WTI



Work Order #: 305940

Project ID: 2006-142

Lab Batch #: 725775

Sample: 305940-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 725775

Sample: 510817-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 725775

Sample: 510817-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0299	0.0300	100	80-120	

Lab Batch #: 725775

Sample: 510817-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	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.



**Project Name: Lovington Gathering WTI**

Work Order #: 305940

Analyst: SHE

Lab Batch ID: 725775

Sample: 510817-1-BKS

Date Prepared: 06/17/2008

Batch #: 1

Project ID: 2006-142

Date Analyzed: 06/17/2008

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units: mg/L													
Analytes	BTEX by EPA 8021B		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	0.0926	93	0.1	0.0827	83	11	70-125	25	
	Toluene		ND	0.1000	0.0970	97	0.1	0.0853	85	13	70-125	25	
	Ethylbenzene		ND	0.1000	0.1118	112	0.1	0.0979	98	13	71-129	25	
	m,p-Xylenes		ND	0.2000	0.2288	114	0.2	0.2010	101	13	70-131	25	
	o-Xylene		ND	0.1000	0.1153	115	0.1	0.1016	102	13	71-133	25	

Relative Percent Difference RPD =  $200 * [(D-F)/(D+F)]$   
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: Lovington Gathering WTI

Work Order # : 305940

Lab Batch ID: 725775

Date Analyzed: 06/18/2008

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 305940-001 S

Batch #: 1 Matrix: Water

Date Prepared: 06/17/2008

Analyst: SHE

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	0.1000	0.0895	90	0.1000	0.0814	81	11	70-125	25
	Toluene	ND	0.1000	0.0919	92	0.1000	0.0835	84	9	70-125	25
	Ethylbenzene	ND	0.1000	0.1040	104	0.1000	0.0948	95	9	71-129	25
	m,p-Xylenes	ND	0.2000	0.2115	106	0.2000	0.1934	97	9	70-131	25
	o-Xylene	ND	0.1000	0.1090	109	0.1000	0.0995	100	9	71-133	25

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

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

# Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST  
12800 West I-20 East  
Odessa, Texas 79765  
Phone: 432-563-1800  
Fax: 432-563-1713

Project Manager: Curt Stanley PAGE 01 OF 01  
Company Name: Basin Environmental Service Technologies, LLC  
Company Address: P. O. Box 301  
City/State/Zip: Lovington, NM 88260  
Telephone No: (505) 441-2244  
Sample Signature: [Signature]  
Fax No: (505) 396-1428  
e-mail: cstanley@basinenv.com  
Project Name: LOVINGTON GATHERING WTI  
Project #: 2006-142  
Project Loc: Lea County, NM  
PO #: PAA - C. J. Reynolds  
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

LAB # (Lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Preservation & # of Containers	Matrix	Analysis For:
01	MW-1			6/14/2008	1300	2 X	GW	TC.P. TOTAL
02	MW-4			6/14/2008	1315	2 X	GW	TC.P. TOTAL
03	MW-5			6/14/2008	1330	2 X	GW	TC.P. TOTAL
04	MW-6			6/14/2008	1345	2 X	GW	TC.P. TOTAL
05	MW-8			6/14/2008	1355	2 X	GW	TC.P. TOTAL
06	MW-9			6/14/2008	1410	2 X	GW	TC.P. TOTAL
07	MW-2			6/14/2008	1420	2 X	GW	TC.P. TOTAL
08	MW-7			6/14/2008	1530	2 X	GW	TC.P. TOTAL
09	MW-3			6/14/2008	1550	2 X	GW	TC.P. TOTAL

Special Instructions: email results to cstanley@basinenv.com & c/reynolds@psalp.com

Requisitioned by: [Signature] Date: 6/14/2008 Time: 17:05  
Received by: [Signature] Date: 6/14/2008 Time: 17:05  
Requisitioned by: [Signature] Date: 6/14/2008 Time: 17:05  
Received by: [Signature] Date: 6/14/2008 Time: 17:05

Temperature Upon Receipt: 3.5 °C

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

Client: Basin Env. / Plains  
Date/ Time: 6-16-08 17:05  
Lab ID #: 305940  
Initials: al

**Sample Receipt Checklist**

				Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	3.5 °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	Not Present	
#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 ELDT?	<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	Not Applicable	
#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 312889**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Camille Reynolds**

**Lovington Gathering WTI**

**2006-142**

**25-SEP-08**



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

**Texas certification numbers:**

**Houston, TX T104704215 - Odessa/Midland, TX T104704215-08-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 - Austin - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta**



25-SEP-08

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

Reference: XENCO Report No: **312889**  
**Lovington Gathering WTI**  
Project Address: Lea County, NM

**Camille Reynolds:**

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 312889. 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. 312889 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 312889



PLAINS ALL AMERICAN EH&S, Midland, TX  
Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	Sep-17-08 14:15		312889-001
MW-1	W	Sep-17-08 14:45		312889-002
MW-4	W	Sep-17-08 15:10		312889-003
MW-6	W	Sep-17-08 15:30		312889-004
MW-9	W	Sep-17-08 15:50		312889-005
MW-2	W	Sep-17-08 16:15		312889-006
MW-8	W	Sep-17-08 16:40		312889-007
MW-7	W	Sep-17-08 17:00		312889-008
MW-3	W	Sep-17-08 17:30		312889-009





# Certificate of Analysis Summary 312889

## PLAINS ALL AMERICAN EHS, Midland, TX



Project Id: 2006-142  
Contact: Camille Reynolds  
Project Location: Lea County, NM  
Project Name: Lovington Gathering WTI  
Date Received in Lab: Fri Sep-19-08 04:53 pm  
Report Date: 25-SEP-08  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	312889-001	312889-002	312889-003	312889-004	312889-005	312889-006
	Field Id:	MW-5	MW-1	MW-4	MW-6	MW-9	MW-2
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	Sep-17-08 14:15	Sep-17-08 14:45	Sep-17-08 15:10	Sep-17-08 15:30	Sep-17-08 15:50	Sep-17-08 16:15
BTEx by EPA 8021B	Extracted:	Sep-22-08 16:08	Sep-22-08 16:08	Sep-22-08 16:08	Sep-22-08 16:08	Sep-22-08 16:08	Sep-22-08 16:08
	Analyzed:	Sep-23-08 01:37	Sep-23-08 01:59	Sep-23-08 02:22	Sep-23-08 02:45	Sep-23-08 03:07	Sep-23-08 03:30
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
		ND 0.0010	0.0200 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.1590 0.0010
Benzene		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
Toluene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Ethylbenzene		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	0.0044 0.0020
m,p-Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
o-Xylene		ND	ND	ND	ND	ND	0.0044
Total Xylenes		ND	0.02	ND	ND	ND	0.1634
Total BTEx							

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



**Certificate of Analysis Summary 312889**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



Project Id: 2006-142  
Contact: Camille Reynolds  
Project Location: Lea County, NM

Date Received in Lab: Fri Sep-19-08 04:53 pm


Report Date: 25-SEP-08

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	312889-007	312889-008	312889-009	
	Field Id:	MW-8	MW-7	MW-3	
	Depth:				
	Matrix:	WATER	WATER	WATER	
	Sampled:	Sep-17-08 16:40	Sep-17-08 17:00	Sep-17-08 17:30	
BTX by EPA 8021B	Extracted:	Sep-23-08 15:00	Sep-22-08 16:08	Sep-23-08 15:00	
	Analyzed:	Sep-23-08 16:26	Sep-23-08 04:15	Sep-23-08 17:11	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	
Benzene		0.5689 0.0050	0.3535 0.0010	0.0266 0.0010	
Toluene		ND 0.0100	ND 0.0020	ND 0.0020	
Ethylbenzene		ND 0.0050	ND 0.0010	ND 0.0010	
m,p-Xylenes		ND 0.0100	0.0036 0.0020	0.0022 0.0020	
o-Xylene		ND 0.0050	ND 0.0010	ND 0.0010	
Total Xylenes		ND	0.0036	0.0022	
Total BTX		0.5689	0.3571	0.0288	

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(PQL) and above the SQL(MDL).
- 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.

\* Outside XENCO'S scope of NELAC Accreditation

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



## Form 2 - Surrogate Recoveries

Project Name: Lovington Gathering WTI

Work Orders : 312889,

Project ID: 2006-142

Lab Batch #: 734916

Sample: 312880-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 734916

Sample: 312880-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	

Lab Batch #: 734916

Sample: 312889-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0360	0.0300	120	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 734916

Sample: 312889-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0226	0.0300	75	80-120	**

Lab Batch #: 734916

Sample: 312889-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0364	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0260	0.0300	87	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: Lovington Gathering WTI

Work Orders : 312889,

Project ID: 2006-142

Lab Batch #: 734916

Sample: 312889-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0365	0.0300	122	80-120	**
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 734916

Sample: 312889-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0364	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 734916

Sample: 312889-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0147	0.0300	49	80-120	**

Lab Batch #: 734916

Sample: 312889-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0217	0.0300	72	80-120	**
4-Bromofluorobenzene	0.0095	0.0300	32	80-120	**

Lab Batch #: 734916

Sample: 516098-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	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: Lovington Gathering WTI

Work Orders : 312889,

Project ID: 2006-142

Lab Batch #: 734916

Sample: 516098-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0362	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 734916

Sample: 516098-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 735018

Sample: 312889-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0105	0.0300	35	80-120	**

Lab Batch #: 735018

Sample: 312889-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0227	0.0300	76	80-120	**

Lab Batch #: 735018

Sample: 312889-009 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	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: Lovington Gathering WTI

Work Orders : 312889,

Project ID: 2006-142

Lab Batch #: 735018

Sample: 312889-009 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 735018

Sample: 516175-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 735018

Sample: 516175-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Difluorobenzene	0.0370	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 735018

Sample: 516175-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	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.



**Project Name: Lovington Gathering WTI**

Work Order #: 312889

Analyst: ASA

Lab Batch ID: 734916

Sample: 516098-1-BKS

Units: mg/L

Project ID: 2006-142

Date Analyzed: 09/22/2008

Matrix: Water

Date Prepared: 09/22/2008

Batch #: 1

Units: mg/L											
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	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	0.1052	105	0.1	0.1034	103	2	70-125	25	
Toluene	ND	0.1000	0.1005	101	0.1	0.0990	99	2	70-125	25	
Ethylbenzene	ND	0.1000	0.1021	102	0.1	0.1002	100	2	71-129	25	
m,p-Xylenes	ND	0.2000	0.2121	106	0.2	0.2085	104	2	70-131	25	
o-Xylene	ND	0.1000	0.0966	97	0.1	0.0961	96	1	71-133	25	

Analyst: ASA

Lab Batch ID: 735018

Sample: 516175-1-BKS

Units: mg/L

Date Prepared: 09/23/2008

Batch #: 1

Date Analyzed: 09/23/2008

Matrix: Water

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	0.1034	103	0.1	0.1089	109	5	70-125	25
	Toluene	ND	0.1000	0.0996	100	0.1	0.1049	105	5	70-125	25
	Ethylbenzene	ND	0.1000	0.1016	102	0.1	0.1071	107	5	71-129	25
	m,p-Xylenes	ND	0.2000	0.2104	105	0.2	0.2220	111	5	70-131	25
	o-Xylene	ND	0.1000	0.0948	95	0.1	0.1014	101	7	71-133	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 / MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order # : 312889

Lab Batch ID: 734916

Date Analyzed: 09/23/2008

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 312880-001 S

Batch #: 1 Matrix: Water

Date Prepared: 09/22/2008

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Reporting Units: mg/L	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	0.1000	0.0910	91	0.1000	0.1002	100	9	70-125	25	
		Toluene	ND	0.1000	0.0858	86	0.1000	0.0939	94	9	70-125	25	
		Ethylbenzene	ND	0.1000	0.0855	86	0.1000	0.0936	94	9	71-129	25	
		m,p-Xylenes	ND	0.2000	0.1770	89	0.2000	0.1937	97	9	70-131	25	
	o-Xylene	ND	0.1000	0.0833	83	0.1000	0.0912	91	9	71-133	25		

Lab Batch ID: 735018

Date Analyzed: 09/23/2008

Reporting Units: mg/L

QC- Sample ID: 312889-009 S

Batch #: 1 Matrix: Water

Date Prepared: 09/23/2008

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Reporting Units: mg/L	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	0.0266	0.1000	0.1289	102	0.1000	0.1344	108	6	70-125	25	
		Toluene	ND	0.1000	0.0979	98	0.1000	0.1012	101	3	70-125	25	
		Ethylbenzene	ND	0.1000	0.0965	97	0.1000	0.1010	101	4	71-129	25	
		m,p-Xylenes	0.0022	0.2000	0.2011	99	0.2000	0.2100	104	5	70-131	25	

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

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



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

Client: Basin Env. / Plains  
Date/ Time: 9/19/08 16:53  
Lab ID #: 312889  
Initials: AL

**Sample Receipt Checklist**

				Client Initials	
#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>4.5</u>	°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	<u>Not Present</u>	
#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 ELQT?	<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	<u>Not Applicable</u>	
#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 319271**

**for**

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

**Project Manager: Daniel Bryant**

**Lovington Gathering WTI**

**2006-142**

**09-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**



09-DEC-08

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

Reference: XENCO Report No: **319271**  
**Lovington Gathering WTI**  
Project Address: Lea County, NM

**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 319271. 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. 319271 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 319271



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	Dec-02-08 08:35		319271-001
MW-4	W	Dec-02-08 08:55		319271-002
MW-6	W	Dec-02-08 09:25		319271-003
MW-9	W	Dec-02-08 09:45		319271-004
MW-1	W	Dec-02-08 10:10		319271-005
MW-3	W	Dec-02-08 10:30		319271-006
MW-2	W	Dec-02-08 12:40		319271-007
MW-8	W	Dec-02-08 13:00		319271-008
MW-7	W	Dec-02-08 13:15		319271-009

**Project Name: Lovington Gathering WTI**
**Project Id:** 2006-142

**Date Received in Lab:** Dec-03-08 09:17 am

**Contact:** Daniel Bryant

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


**Project Location:** Lea County, NM

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	319271-001	319271-002	319271-003	319271-004
	<i>Field Id:</i>	MW-5	MW-4	MW-6	MW-9
	<i>Depth:</i>				
	<i>Matrix:</i>	WATER	WATER	WATER	WATER
	<i>Sampled:</i>	Dec-02-08 08:35	Dec-02-08 08:55	Dec-02-08 09:25	Dec-02-08 09:45
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-04-08 16:05	Dec-04-08 16:05	Dec-04-08 16:05	Dec-04-08 16:05
	<i>Analyzed:</i>	Dec-05-08 03:24	Dec-05-08 03:47	Dec-05-08 04:11	Dec-05-08 04:34
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Benzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Toluene		ND 0.0020	0.0062 0.0020	ND 0.0020	ND 0.0020
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
m,p-Xylenes		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total BTEX		ND 0.0010	0.0062 0.0010	ND 0.0010	ND 0.0010
<b>SVOA PAHs List by EPA 8270C</b>	<i>Extracted:</i>	Dec-04-08 10:33	Dec-04-08 10:36	Dec-04-08 10:39	Dec-04-08 10:42
	<i>Analyzed:</i>	Dec-04-08 21:06	Dec-04-08 21:50	Dec-04-08 22:34	Dec-04-08 23:18
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Acenaphthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Acenaphthylene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Anthracene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(a)anthracene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(a)pyrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(b)fluoranthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(k)fluoranthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(g,h,i)perylene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Chrysene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Dibenz(a,h)Anthracene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Fluoranthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Fluorene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Indeno(1,2,3-c,d)Pyrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
1-Methylnaphthalene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
2-Methylnaphthalene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Naphthalene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Phenanthrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Pyrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005

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 Brent Barron  
 Odessa Laboratory Director



# Certificate of Analysis Summary 319271

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



Project Name: Lovington Gathering WTI

Project Id: 2006-142

Date Received in Lab: Dec-03-08 09:17 am

Contact: Daniel Bryant

Report Date: 09-DEC-08

Project Location: Lea County, NM

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	319271-005	319271-006	319271-007	319271-008
	Field Id:	MW-1	MW-3	MW-2	MW-8
	Depth:				
	Matrix:	WATER	WATER	WATER	WATER
	Sampled:	Dec-02-08 10:10	Dec-02-08 10:30	Dec-02-08 12:40	Dec-02-08 13:00
<b>BTEX by EPA 8021B</b>	Extracted:	Dec-04-08 16:05	Dec-04-08 16:05	Dec-04-08 16:05	Dec-04-08 16:05
	Analyzed:	Dec-05-08 04:58	Dec-05-08 05:21	Dec-05-08 05:45	Dec-05-08 12:01
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Benzene		0.0358 0.0010	0.0249 0.0010	0.0503 0.0010	0.2345 0.0050
Toluene		ND 0.0020	ND 0.0020	0.0026 0.0020	0.0468 0.0100
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	0.0085 0.0050
m,p-Xylenes		ND 0.0020	0.0040 0.0020	0.0073 0.0020	0.0419 0.0100
o-Xylene		ND 0.0010	0.0019 0.0010	0.0014 0.0010	0.0135 0.0050
Total Xylenes		ND 0.0010	0.0059 0.0010	0.0087 0.0010	0.0554 0.0050
Total BTEX		0.0358 0.0010	0.0308 0.0010	0.0616 0.0010	0.3452 0.0050
<b>SVOA PAHs List by EPA 8270C</b>	Extracted:	Dec-04-08 10:45	Dec-04-08 10:48	Dec-04-08 10:51	Dec-04-08 10:54
	Analyzed:	Dec-05-08 00:02	Dec-05-08 00:47	Dec-05-08 02:47	Dec-05-08 03:31
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Accenaphthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Accenaphthylene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Anthracene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(a)anthracene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(a)pyrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(b)fluoranthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(k)fluoranthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Benzo(g,h,i)perylene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Chrysene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Dibenz(a,h)Anthracene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Fluoranthene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Fluorene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Indeno(1,2,3-c,d)Pyrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
1-Methylnaphthalene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
2-Methylnaphthalene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Naphthalene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Phenanthrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005
Pyrene		ND 0.005	ND 0.005	ND 0.005	ND 0.005

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Brent Barron

Odessa Laboratory Director



**Project Name: Lovington Gathering WTI**

**Project Id:** 2006-142

**Date Received in Lab:** Dec-03-08 09:17 am

**Contact:** Daniel Bryant

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


**Project Location:** Lea County, NM

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>		<b>Lab Id:</b>	319271-009			
		<b>Field Id:</b>	MW-7			
		<b>Depth:</b>				
		<b>Matrix:</b>	WATER			
		<b>Sampled:</b>	Dec-02-08 13:15			
<b>BTEX by EPA 8021B</b>		<b>Extracted:</b>	Dec-05-08 12:55			
		<b>Analyzed:</b>	Dec-06-08 05:31			
		<b>Units/RL:</b>	mg/L RL			
Benzene			0.0364 0.0010			
Toluene			ND 0.0020			
Ethylbenzene			ND 0.0010			
m,p-Xylenes			0.0039 0.0020			
o-Xylene			0.0025 0.0010			
Total Xylenes			0.0064 0.0010			
Total BTEX			0.0428 0.0010			
<b>SVOA PAHs List by EPA 8270C</b>		<b>Extracted:</b>	Dec-04-08 10:57			
		<b>Analyzed:</b>	Dec-05-08 04:16			
		<b>Units/RL:</b>	mg/L RL			
Acenaphthene			ND 0.005			
Acenaphthylene			ND 0.005			
Anthracene			ND 0.005			
Benzo(a)anthracene			ND 0.005			
Benzo(a)pyrene			ND 0.005			
Benzo(b)fluoranthene			ND 0.005			
Benzo(k)fluoranthene			ND 0.005			
Benzo(g,h,i)perylene			ND 0.005			
Chrysene			ND 0.005			
Dibenz(a,h)Anthracene			ND 0.005			
Fluoranthene			ND 0.005			
Fluorene			ND 0.005			
Indeno(1,2,3-c,d)Pyrene			ND 0.005			
1-Methylnaphthalene			ND 0.005			
2-Methylnaphthalene			ND 0.005			
Naphthalene			ND 0.005			
Phenanthrene			ND 0.005			
Pyrene			ND 0.005			

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 Brent Barron  
 Odessa Laboratory Director

- 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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(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: Lovington Gathering WTI

Work Orders : 319271,

Project ID: 2006-142

Lab Batch #: 742525

Sample: 319271-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0209	0.0300	70	80-120	**

Lab Batch #: 742525

Sample: 319271-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 742525

Sample: 319271-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 742525

Sample: 319271-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0347	0.0300	116	80-120	
4-Bromofluorobenzene	0.0206	0.0300	69	80-120	**

Lab Batch #: 742525

Sample: 319271-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

## 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	0.0201	0.0300	67	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: Lovington Gathering WTI

Work Orders : 319271,

Project ID: 2006-142

Lab Batch #: 742525

Sample: 319271-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0202	0.0300	67	80-120	**

Lab Batch #: 742525

Sample: 319271-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0186	0.0300	62	80-120	**

Lab Batch #: 742525

Sample: 319271-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0203	0.0300	68	80-120	**
4-Bromofluorobenzene	0.0209	0.0300	70	80-120	**

Lab Batch #: 742525

Sample: 319271-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0207	0.0300	69	80-120	**

Lab Batch #: 742525

Sample: 319271-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0225	0.0300	75	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: Lovington Gathering WTI

Work Orders : 319271,

Project ID: 2006-142

Lab Batch #: 742525

Sample: 520624-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0272	0.0300	91	80-120	

Lab Batch #: 742525

Sample: 520624-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 742525

Sample: 520624-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 742793

Sample: 319271-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0174	0.0300	58	80-120	*

Lab Batch #: 742793

Sample: 319397-002 S / MS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0184	0.0300	61	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: Lovington Gathering WTI

Work Orders : 319271,

Project ID: 2006-142

Lab Batch #: 742793

Sample: 319397-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0181	0.0300	60	80-120	*

Lab Batch #: 742793

Sample: 8406040-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### 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	0.0263	0.0300	88	80-120	

Lab Batch #: 742793

Sample: 8406040-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0178	0.0300	59	80-120	*

Lab Batch #: 742793

Sample: 8406040-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	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: Lovington Gathering WTI


**Work Orders :** 319271, **Project ID:** 2006-142  
**Lab Batch #:** 742468 **Sample:** 319271-001 / SMP **Batch:** 1 **Matrix:** Water  
**Units:** mg/L

SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.035	0.050	70	33-141	
2,4,6-Tribromophenol	0.048	0.050	96	10-123	

**Lab Batch #:** 742468 **Sample:** 319271-002 / SMP **Batch:** 1 **Matrix:** Water  
**Units:** mg/L

SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.019	0.050	38	21-100	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Phenol-d6	0.012	0.050	24	10-94	
Terphenyl-D14	0.037	0.050	74	33-141	
2,4,6-Tribromophenol	0.046	0.050	92	10-123	

**Lab Batch #:** 742468 **Sample:** 319271-003 / SMP **Batch:** 1 **Matrix:** Water  
**Units:** mg/L

SURROGATE RECOVERY STUDY					
SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.019	0.050	38	21-100	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.036	0.050	72	33-141	
2,4,6-Tribromophenol	0.046	0.050	92	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: Lovington Gathering WTI

Work Orders : 319271,

Project ID: 2006-142

Lab Batch #: 742468

Sample: 319271-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.038	0.050	76	43-116	
2-Fluorophenol	0.019	0.050	38	21-100	
Nitrobenzene-d5	0.033	0.050	66	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.037	0.050	74	33-141	
2,4,6-Tribromophenol	0.045	0.050	90	10-123	

Lab Batch #: 742468

Sample: 319271-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.036	0.050	72	43-116	
2-Fluorophenol	0.017	0.050	34	21-100	
Nitrobenzene-d5	0.032	0.050	64	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.033	0.050	66	33-141	
2,4,6-Tribromophenol	0.037	0.050	74	10-123	

Lab Batch #: 742468

Sample: 319271-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.017	0.050	34	21-100	
Nitrobenzene-d5	0.032	0.050	64	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.038	0.050	76	33-141	
2,4,6-Tribromophenol	0.042	0.050	84	10-123	

\*\* 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: Lovington Gathering WTI

Work Orders : 319271,

Project ID: 2006-142

Lab Batch #: 742468

Sample: 319271-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.016	0.050	32	21-100	
Nitrobenzenc-d5	0.032	0.050	64	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.034	0.050	68	33-141	
2,4,6-Tribromophenol	0.037	0.050	74	10-123	

Lab Batch #: 742468

Sample: 319271-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.038	0.050	76	43-116	
2-Fluorophenol	0.014	0.050	28	21-100	
Nitrobenzenc-d5	0.034	0.050	68	35-114	
Phenol-d6	0.009	0.050	18	10-94	
Terphenyl-D14	0.035	0.050	70	33-141	
2,4,6-Tribromophenol	0.039	0.050	78	10-123	

Lab Batch #: 742468

Sample: 319271-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.038	0.050	76	43-116	
2-Fluorophenol	0.018	0.050	36	21-100	
Nitrobenzenc-d5	0.033	0.050	66	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.035	0.050	70	33-141	
2,4,6-Tribromophenol	0.041	0.050	82	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: Lovington Gathering WTI

Work Orders : 319271,

Project ID: 2006-142

Lab Batch #: 742468

Sample: 520591-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.038	0.050	76	43-116	
2-Fluorophenol	0.026	0.050	52	21-100	
Nitrobenzene-d5	0.034	0.050	68	35-114	
Phenol-d6	0.019	0.050	38	10-94	
Terphenyl-D14	0.038	0.050	76	33-141	
2,4,6-Tribromophenol	0.041	0.050	82	10-123	

Lab Batch #: 742468

Sample: 520591-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.036	0.050	72	43-116	
2-Fluorophenol	0.027	0.050	54	21-100	
Nitrobenzene-d5	0.032	0.050	64	35-114	
Phenol-d6	0.021	0.050	42	10-94	
Terphenyl-D14	0.040	0.050	80	33-141	
2,4,6-Tribromophenol	0.043	0.050	86	10-123	

Lab Batch #: 742468

Sample: 520591-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

### SURROGATE RECOVERY STUDY

SVOA PAHs List by EPA 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.039	0.050	78	43-116	
2-Fluorophenol	0.028	0.050	56	21-100	
Nitrobenzene-d5	0.035	0.050	70	35-114	
Phenol-d6	0.020	0.050	40	10-94	
Terphenyl-D14	0.039	0.050	78	33-141	
2,4,6-Tribromophenol	0.042	0.050	84	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.



**Project Name: Lovington Gathering WTI**

Work Order #: 319271

Analyst: BHW

Lab Batch ID: 742525

Sample: 520624-1-BKS

Date Prepared: 12/04/2008

Batch #: 1

Project ID: 2006-142

Date Analyzed: 12/05/2008

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/L											
Analytes	BTEX by EPA 8021B										
	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	0.1003	100	0.1	0.1030	103	3	70-125	25
	Toluene	ND	0.1000	0.0928	93	0.1	0.0953	95	3	70-125	25
	Ethylbenzene	ND	0.1000	0.0994	99	0.1	0.1027	103	3	71-129	25
	m,p-Xylenes	ND	0.2000	0.1998	100	0.2	0.2061	103	3	70-131	25
o-Xylene	ND	0.1000	0.0951	95	0.1	0.0978	98	3	71-133	25	

Analyst: ASA

Lab Batch ID: 742793

Sample: 8406040-1-BKS

Date Prepared: 12/05/2008

Batch #: 1

Date Analyzed: 12/06/2008

Matrix: Water

Units: mg/L

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	0.1089	109	0.1	0.1100	110	1	70-125	25
	Toluene	ND	0.1000	0.0995	100	0.1	0.1002	100	1	70-125	25
	Ethylbenzene	ND	0.1000	0.1041	104	0.1	0.1055	106	1	71-129	25
	m,p-Xylenes	ND	0.2000	0.2083	104	0.2	0.2109	105	1	70-131	25
	o-Xylene	ND	0.1000	0.0991	99	0.1	0.1006	101	2	71-133	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



**Project Name: Lovington Gathering WTI**

**Work Order #: 319271**

**Analyst: KAN**

**Lab Batch ID: 742468**

**Sample: 520591-1-BKS**

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

**Batch #: 1**

**Project ID: 2006-142**

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

**Matrix: Water**

**Units: mg/L**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
	SVOA PAHs List 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												
	Acenaphthene	ND	0.050	0.046	92	0.05	0.048	96	4	54-114	25	
	Acenaphthylene	ND	0.050	0.046	92	0.05	0.048	96	4	53-113	25	
	Anthracene	ND	0.050	0.048	96	0.05	0.050	100	4	56-116	25	
	Benzo(a)anthracene	ND	0.050	0.047	94	0.05	0.049	98	4	59-116	25	
	Benzo(a)pyrene	ND	0.050	0.050	100	0.05	0.052	104	4	58-118	25	
	Benzo(b)fluoranthene	ND	0.050	0.049	98	0.05	0.052	104	6	54-123	25	
	Benzo(k)fluoranthene	ND	0.050	0.050	100	0.05	0.052	104	4	52-122	25	
	Benzo(g,h,i)perylene	ND	0.050	0.050	100	0.05	0.052	104	4	47-129	25	
	Chrysene	ND	0.050	0.047	94	0.05	0.049	98	4	58-116	25	
	Dibenz(a,h)Anthracene	ND	0.050	0.050	100	0.05	0.051	102	2	46-131	25	
	Fluoranthene	ND	0.050	0.049	98	0.05	0.051	102	4	55-120	25	
	Fluorene	ND	0.050	0.049	98	0.05	0.050	100	2	56-114	25	
	Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.051	102	0.05	0.053	106	4	44-132	25	
	1-Methylnaphthalene	ND	0.050	0.046	92	0.05	0.048	96	4	47-113	25	
	2-Methylnaphthalene	ND	0.050	0.051	102	0.05	0.054	108	6	57-106	25	H
	Naphthalene	ND	0.050	0.045	90	0.05	0.048	96	6	53-110	25	
	Phenanthrene	ND	0.050	0.048	96	0.05	0.050	100	4	56-116	25	
	Pyrene	ND	0.050	0.048	96	0.05	0.050	100	4	57-119	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 - MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 319271

Lab Batch ID: 742525

Date Analyzed: 12/05/2008

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 319271-001 S

Date Prepared: 12/04/2008

Batch #: 1 Matrix: Water

Analyst: BHW

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	ND	0.1000	0.1021	102	0.1000	0.1026	103	1	70-125	25	
Toluene	ND	0.1000	0.0927	93	0.1000	0.0960	96	3	70-125	25	
Ethylbenzene	ND	0.1000	0.0972	97	0.1000	0.1059	106	9	71-129	25	
m,p-Xylenes	ND	0.2000	0.1954	98	0.2000	0.2025	101	3	70-131	25	
o-Xylene	ND	0.1000	0.0945	95	0.1000	0.0987	99	4	71-133	25	

Lab Batch ID: 742793

Date Analyzed: 12/06/2008

Reporting Units: mg/L

QC- Sample ID: 319397-002 S

Date Prepared: 12/05/2008

Batch #: 1 Matrix: Water

Analyst: ASA

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	0.0733	0.1000	0.1467	73	0.1000	0.1500	77	5	70-125	25	
Toluene	ND	0.1000	0.0643	64	0.1000	0.0655	66	3	70-125	25	X
Ethylbenzene	0.0014	0.1000	0.0636	62	0.1000	0.0653	64	3	71-129	25	X
m,p-Xylenes	ND	0.2000	0.1267	63	0.2000	0.1308	65	3	70-131	25	X
o-Xylene	ND	0.1000	0.0596	60	0.1000	0.0617	62	3	71-133	25	X

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

Relative Percent Difference  $RPD = 200 \times [(C-F)/(C+F)]$

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

Applicable N = See Narrative, EQL = Estimated Quantitation Limit

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



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

Client: Basin Env. / Plains  
Date/ Time: 12/23/03 9:19  
Lab ID #: 319271  
Initials: glt

**Sample Receipt Checklist**

				Client Initials
#1 Temperature of container/ cooler?	<u>Yes</u>	No	<u>2.0</u> °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 bottle/ container?	<u>Yes</u>	No	<u>Not Present</u>	
#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	<u>ID written on Cont./ Lid</u>	
#9 Container label(s) legible and intact?	<u>Yes</u>	No	<u>Not Applicable</u>	
#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	<u>See Below</u>	
#13 Samples properly preserved?	<u>Yes</u>	No	<u>See Below</u>	
#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	<u>See Below</u>	
#18 All samples received within sufficient hold time?	<u>Yes</u>	No	<u>See Below</u>	
#19 Subcontract of sample(s)?	<u>Yes</u>	No	<u>Not Applicable</u>	
#20 VOC samples have zero headspace?	<u>Yes</u>	No	<u>Not Applicable</u>	

**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 326509**

**for**

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

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**10-MAR-09**



**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**

**Miramar, FL E86349**

**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**





10-MAR-09

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

Reference: XENCO Report No: **326509**  
**Lovington Gathering WTI**  
Project Address: Lea 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 326509. 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. 326509 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.***

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## Sample Cross Reference 326509



PLAINS ALL AMERICAN EH&S, Midland, TX  
Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	Mar-03-09 08:00		326509-001
MW-4	W	Mar-03-09 09:00		326509-002
MW-6	W	Mar-03-09 10:00		326509-003
MW-9	W	Mar-03-09 11:00		326509-004
MW-1	W	Mar-03-09 12:00		326509-005
MW-3	W	Mar-03-09 13:00		326509-006
MW-2	W	Mar-03-09 14:00		326509-007
MW-7	W	Mar-03-09 15:00		326509-008
MW-8	W	Mar-03-09 16:00		326509-009



**Certificate of Analysis Summary 326509**  
**PLAINS ALL AMERICA E&H&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**




Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Wed Mar-04-09 05:03 pm  
Report Date: 10-MAR-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	326509-001	326509-002	326509-003	326509-004	326509-005	326509-006
	Field Id: Depth: Matrix: Sampled:	MW-5 WATER Mar-03-09 08:00	MW-4 WATER Mar-03-09 09:00	MW-6 WATER Mar-03-09 10:00	MW-9 WATER Mar-03-09 11:00	MW-1 WATER Mar-03-09 12:00	MW-3 WATER Mar-03-09 13:00
BTEX by EPA 8021B	Extracted:	Mar-09-09 13:00	Mar-09-09 13:00	Mar-09-09 13:00	Mar-09-09 13:00	Mar-09-09 13:00	Mar-09-09 13:00
	Analyzed:	Mar-10-09 00:42	Mar-10-09 01:22	Mar-10-09 01:45	Mar-10-09 02:15	Mar-10-09 02:43	Mar-10-09 04:12
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
	Benzene	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	1.367 0.0050
	Toluene	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	0.0305 0.0100
m,p-Xylenes		ND 0.0010	ND 0.0020	ND 0.0010	ND 0.0010	ND 0.0010	0.0251 0.0050
	o-Xylene	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.0173 0.0100
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.0158 0.0050
Total BTEX		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.0331 0.0050

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



# Certificate of Analysis Summary 326509

## PLAINS ALL AMERICAN E&H&S, Midland, TX



Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Project Name: Lovington Gathering WTI

Date Received in Lab: Wed Mar-04-09 05:03 pm


Report Date: 10-MAR-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	326509-007	326509-008	326509-009	
	Field Id:	MW-2	MW-7	MW-8	
	Depth:				
	Matrix:	WATER	WATER	WATER	
	Sampled:	Mar-03-09 14:00	Mar-03-09 15:00	Mar-03-09 16:00	
BTX by EPA 8021B	Extracted:	Mar-09-09 13:00	Mar-09-09 13:00	Mar-09-09 13:00	
	Analyzed:	Mar-10-09 04:32	Mar-10-09 04:58	Mar-10-09 05:20	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	
		0.0356 0.0010	0.0775 0.0010	0.0284 0.0010	
Benzene		ND 0.0020	ND 0.0020	ND 0.0020	
Toluene		ND 0.0010	ND 0.0010	ND 0.0010	
Ethylbenzene		0.0026 0.0020	0.0327 0.0020	0.0068 0.0020	
m,p-Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	
o-Xylene		0.0026 0.0010	0.0327 0.0010	0.0068 0.0010	
Total Xylenes		0.0382 0.0010	0.1102 0.0010	0.0352 0.0010	
Total BTX					

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

- 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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 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

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(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: Lovington Gathering WTI

Work Orders : 326509,

Project ID: 2006-142

Lab Batch #: 751977

Sample: 526053-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/09/09 22:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0317	0.0300	106	80-120	
4-Bromofluorobenzene		0.0289	0.0300	96	80-120	

Lab Batch #: 751977

Sample: 526053-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/09/09 22:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0313	0.0300	104	80-120	
4-Bromofluorobenzene		0.0291	0.0300	97	80-120	

Lab Batch #: 751977

Sample: 526053-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/09/09 23:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0265	0.0300	88	80-120	
4-Bromofluorobenzene		0.0285	0.0300	95	80-120	

Lab Batch #: 751977

Sample: 326509-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 00:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0268	0.0300	89	80-120	
4-Bromofluorobenzene		0.0297	0.0300	99	80-120	

Lab Batch #: 751977

Sample: 326509-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 01:22

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes						
1,4-Difluorobenzene		0.0262	0.0300	87	80-120	
4-Bromofluorobenzene		0.0266	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: Lovington Gathering WTI

Project ID: 2006-142

Work Orders : 326509,

Lab Batch #: 751977

Sample: 326509-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 01:45

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 751977

Sample: 326509-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 02:15

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 751977

Sample: 326509-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 02:43

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 751977

Sample: 326509-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 04:12

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0199	0.0300	66	80-120	*

Lab Batch #: 751977

Sample: 326509-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 04:32

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	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: Lovington Gathering WTI

Work Orders : 326509,

Project ID: 2006-142

Lab Batch #: 751977

Sample: 326509-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 04:58

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 751977

Sample: 326509-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/10/09 05:20

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	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.





**Project Name: Lovington Gathering WTI**

Work Order #: 326509

Analyst: ASA

Lab Batch ID: 751977

Sample: 526053-1-BKS

Date Prepared: 03/09/2009

Batch #: 1

Project ID: 2006-142

Date Analyzed: 03/09/2009

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B		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	0.1086	109	0.1	0.1084	108	0	70-125	25	
Toluene		ND	0.1000	0.1047	105	0.1	0.1072	107	2	70-125	25	
Ethylbenzene		ND	0.1000	0.1015	102	0.1	0.1079	108	6	71-129	25	
m,p-Xylenes		ND	0.2000	0.2115	106	0.2	0.2257	113	6	70-131	25	
o-Xylene		ND	0.1000	0.1054	105	0.1	0.1123	112	6	71-133	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

**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

12600 West I-20 East  
Odessa, Texas 79765

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

Project Name: Lovington Gathering VSTI

Project #: 2006-142

Project Loc: Lea County, NM

PO #: PAA-J. Henry

mat: ☒ Standard ☐ TRAP ☐ NPDES

[illegible]Page 11 of 12

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

Client: Basin Env / Plains  
Date/ Time: 3/4/09 17:03  
Lab ID #: 320509  
Initials: AL

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	20 °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 335947**

**for**

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

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**24-JUN-09**



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

**Texas certification numbers:**

**Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX  
Corpus Christi, TX T104704370-08-TX - Dallas, TX T104704295-08-TX**

**Florida certification numbers:**

**Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675  
Miramar, FL E86349  
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**



24-JUN-09

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

Reference: XENCO Report No: **335947**  
**Lovington Gathering WTI**  
Project Address: Lea 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 335947. 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. 335947 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 335947



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Jun-18-09 09:00		335947-001
MW-2	W	Jun-18-09 09:30		335947-002
MW-3	W	Jun-18-09 10:00		335947-003
MW-4	W	Jun-18-09 10:30		335947-004
MW-5	W	Jun-18-09 11:00		335947-005
MW-6	W	Jun-18-09 11:30		335947-006
MW-7	W	Jun-18-09 12:00		335947-007
MW-8	W	Jun-18-09 12:30		335947-008
MW-9	W	Jun-18-09 13:00		335947-009



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Lovington Gathering WTI*

*Project ID: 2006-142*

*Work Order Number: 335947*

*Report Date: 24-JUN-09*

*Date Received: 06/19/2009*

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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-763334 BTEX-MTBE EPA 8021B

SW8021BM

Batch 763334, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 335947-002,335947-009,335947-004,335947-005,335947-006,335947-001,335947-003.

Batch 763334, 4-bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 532422-1-BLK



**Certificate of Analysis Summary 335947**  
**PLAINS ALL AMERICAN OIL FIELD, Midland, TX**  
**Project Name: Lovington Gathering WTI**




Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Fri Jun-19-09 08:40 am  
Report Date: 24-JUN-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	335947-001	335947-002	335947-003	335947-004	335947-005	335947-006
	Extracted:	Analyzed:	Units/RL:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BTEX by EPA 8021B											
Benzene						ND 0.0010	0.0097 0.0010	0.0031 0.0010	ND 0.0010	ND 0.0010	0.0044 0.0010
Toluene						ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
Ethylbenzene						ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
m,p-Xylenes						ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
o-Xylene						ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total Xylenes						ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total BTEX						ND 0.0010	0.0097 0.0010	0.0031 0.0010	ND 0.0010	ND 0.0010	0.0044 0.0010

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 335947**  
**PLAINS ALL AMERICAN E&H&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



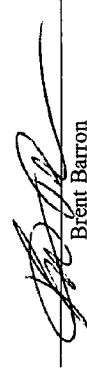
Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Fri Jun-19-09 08:40 am  
Report Date: 24-JUN-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	335947-007	335947-008	335947-009	
	Field Id:	MW-7	MW-8	MW-9	
	Depth:				
	Matrix:	WATER	WATER	WATER	
	Sampled:	Jun-18-09 12:00	Jun-18-09 12:30	Jun-18-09 13:00	
BTX by EPA 8021B	Extracted:	Jun-23-09 16:00	Jun-23-09 16:00	Jun-23-09 16:00	
	Analyzed:	Jun-23-09 19:44	Jun-23-09 20:05	Jun-23-09 21:09	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	
	Benzene	0.0570 0.0010	0.0045 0.0010	ND 0.0010	
	Toluene	ND 0.0020	ND 0.0020	ND 0.0020	
	Ethylbenzene	ND 0.0010	0.0016 0.0010	ND 0.0010	
	m,p-Xylenes	0.0329 0.0020	0.0032 0.0020	ND 0.0020	
	o-Xylene	ND 0.0010	ND 0.0010	ND 0.0010	
	Total Xylenes	0.0329 0.0010	0.0032 0.0010	ND 0.0010	
	Total BTX	0.0899 0.0010	0.0093 0.0010	ND 0.0010	

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

- 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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(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: Lovington Gathering WTI

Work Orders : 335947,

Project ID: 2006-142

Lab Batch #: 763334

Sample: 532422-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 15:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 763334

Sample: 532422-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 15:47

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 763334

Sample: 532422-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 16:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0190	0.0300	63	80-120	*

Lab Batch #: 763334

Sample: 335947-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 17:35

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0210	0.0300	70	80-120	*

Lab Batch #: 763334

Sample: 335947-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 17:56

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0204	0.0300	68	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: Lovington Gathering WTI

Work Orders : 335947,

Project ID: 2006-142

Lab Batch #: 763334

Sample: 335947-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 18:18

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0213	0.0300	71	80-120	*

Lab Batch #: 763334

Sample: 335947-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 18:39

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0223	0.0300	74	80-120	*

Lab Batch #: 763334

Sample: 335947-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 19:01

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0226	0.0300	75	80-120	*

Lab Batch #: 763334

Sample: 335947-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 19:22

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0214	0.0300	71	80-120	*

Lab Batch #: 763334

Sample: 335947-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 19:44

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	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: Lovington Gathering WTI

Work Orders : 335947,

Project ID: 2006-142

Lab Batch #: 763334

Sample: 335947-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 20:05

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0240	0.0300	80	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 763334

Sample: 335947-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/23/09 21:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0221	0.0300	74	80-120	*

Lab Batch #: 763334

Sample: 335947-007 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/24/09 00:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 763334

Sample: 335947-007 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/24/09 00:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	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.



**Project Name: Lovington Gathering WTI**

Work Order #: 335947

Analyst: ASA

Lab Batch ID: 763334

Sample: 532422-1-BKS

Date Prepared: 06/23/2009

Batch #: 1

Project ID: 2006-142

Date Analyzed: 06/23/2009

Matrix: Water

Units: mg/L

Units: mg/L											
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	0.1067	107	0.1	0.1046	105	2	70-125	25
	Toluene	ND	0.1000	0.1040	104	0.1	0.1019	102	2	70-125	25
	Ethylbenzene	ND	0.1000	0.1098	110	0.1	0.1083	108	1	71-129	25
	m,p-Xylenes	ND	0.2000	0.2200	110	0.2	0.2170	109	1	70-131	25
	o-Xylene	ND	0.1000	0.1041	104	0.1	0.1035	104	1	71-133	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 - MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 335947

Lab Batch ID: 763334

Date Analyzed: 06/24/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 335947-007 S

Batch #: 1 Matrix: Water

Date Prepared: 06/23/2009

Analyst: ASA

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	0.0570	0.1000	0.1607	104	0.1000	0.1625	106	1	70-125	25
	Toluene	ND	0.1000	0.0906	91	0.1000	0.0916	92	1	70-125	25
	Ethylbenzene	ND	0.1000	0.0943	94	0.1000	0.0949	95	1	71-129	25
	m,p-Xylenes	0.0329	0.2000	0.2355	101	0.2000	0.2378	102	1	70-131	25
	o-Xylene	ND	0.1000	0.0904	90	0.1000	0.0911	91	1	71-133	25

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





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

Client: Plains / Basin  
Date/ Time: 06-19-09 0840  
Lab ID #: 335947  
Initials: JMF

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	1.6 °C
#2	Shipping container in good condition?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<del>Not Present</del>
#4	Custody Seals intact on sample bottles/ container? /label	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Present
#5	Chain of Custody present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	ID written on Cont/ Lid
#9	Container label(s) legible and intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#11	Containers supplied by ELOT?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#12	Samples in proper container/ bottle?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#13	Samples properly preserved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#14	Sample bottles intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#15	Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#16	Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#18	All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#19	Subcontract of sample(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<del>Not Applicable</del>
#20	VOC samples have zero headspace?	<input checked="" type="radio"/> Yes	<input type="radio"/> 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

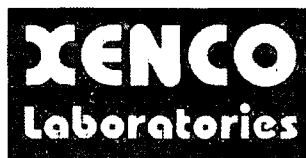
**Analytical Report 343328**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**08-SEP-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-SEP-09

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

Reference: XENCO Report No: **343328**  
**Lovington Gathering WTI**  
Project Address: Lea 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 343328. 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. 343328 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 343328



PLAINS ALL AMERICAN EH&S, Midland, TX  
Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	Sep-01-09 08:30		343328-001
MW-4	W	Sep-01-09 09:15		343328-002
MW-6	W	Sep-01-09 09:50		343328-003
MW-9	W	Sep-01-09 10:25		343328-004
MW-1	W	Sep-01-09 11:05		343328-005
MW-2	W	Sep-01-09 11:30		343328-006
MW-8	W	Sep-01-09 12:05		343328-007
MW-7	W	Sep-01-09 12:35		343328-008
MW-3	W	Sep-01-09 13:05		343328-009



## CASE NARRATIVE

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

**Project Name:** Lovington Gathering WTI

**Project ID:** 2006-142

**Work Order Number:** 343328

**Report Date:** 08-SEP-09

**Date Received:** 09/03/2009

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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-771027 BTEX-MTBE EPA 8021B  
SW8021BM

Batch 771027, 4-Bromofluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 536990-1-BLK, 343328-006, 343328-008, 343328-003, 343328-009, 343328-001, 343328-002. Matrix interference is suspected in sample surrogate failures. 4-Bromofluorobenzene recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 343218-001 S and 343218-001 SD

**Batch:** LBA-771296 BTEX-MTBE EPA 8021B  
SW8021BM

Batch 771296, 4-Bromofluorobenzene recovered below QC limits Matrix Interference is suspected in sample surrogate failures. Samples affected are: 537136-1-BLK, 343328-004, 343328-005. Data confirmed by re-analysis for sample 343328-005.



# Certificate of Analysis Summary 343328

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



Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Thu Sep-03-09 01:50 pm  
Report Date: 08-SEP-09

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	343328-001	343328-002	343328-003	343328-004	343328-005	343328-006
	Field Id:	MW-5	MW-4	MW-6	MW-9	MW-1	MW-2
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	Sep-01-09 08:30	Sep-01-09 09:15	Sep-01-09 09:50	Sep-01-09 10:25	Sep-01-09 11:05	Sep-01-09 11:30
BTEX by EPA 8021B	Extracted:	Sep-03-09 14:38	Sep-03-09 14:38	Sep-03-09 14:38	Sep-04-09 15:00	Sep-04-09 15:00	Sep-03-09 14:38
	Analyzed:	Sep-03-09 15:48	Sep-03-09 16:07	Sep-03-09 16:25	Sep-05-09 21:39	Sep-05-09 16:07	Sep-03-09 17:21
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
		ND 0.0010	ND 0.0010	ND 0.0010	0.9717 0.0100	ND 0.0010	0.0842 0.0010
Benzene		ND 0.0020	ND 0.0020	ND 0.0020	0.0641 0.0200	ND 0.0020	ND 0.0020
Toluene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0100	ND 0.0010	ND 0.0010
Ethylbenzene		ND 0.0020	ND 0.0020	ND 0.0020	0.0867 0.0200	ND 0.0020	0.0083 0.0020
m,p-Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	0.0422 0.0100	ND 0.0010	ND 0.0010
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	0.1289 0.0100	ND 0.0010	0.0083 0.0010
Total Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	1.1647 0.0100	ND 0.0010	0.0925 0.0010
Total BTEX							

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



**Certificate of Analysis Summary 343328**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Thu Sep-03-09 01:50 pm  
Report Date: 08-SEP-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:		343328-007		343328-008		343328-009			
	Field Id:	Depth:	Matrix:	Sampled:	Field Id:	Depth:	Matrix:	Sampled:		
BTEX by EPA 8021B	Extracted:	Sep-03-09 14:38	mg/L	RL	Sep-03-09 14:38	mg/L	RL	Sep-03-09 14:38		
	Analyzed:	Sep-03-09 17:39	mg/L	RL	Sep-03-09 17:57	mg/L	RL	Sep-03-09 18:16		
	Units/RL:	0.0013	0.0010		0.0120	0.0010		0.0073	0.0010	
	Benzene	ND	0.0020		ND	0.0020		0.0033	0.0020	
	Toluene	0.0011	0.0010		ND	0.0010		ND	0.0010	
Total Xylenes	m,p-Xylenes	0.0141	0.0020		ND	0.0020		0.0028	0.0020	
	o-Xylene	ND	0.0010		ND	0.0010		0.0015	0.0010	
	Total Xylenes	0.0141	0.0010		ND	0.0010		0.0043	0.0010	
Total BTEX		0.0165	0.0010		0.0120	0.0010		0.0149	0.0010	

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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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: Lovington Gathering WTI

Work Orders : 343328,

Project ID: 2006-142

Lab Batch #: 771027

Sample: 536990-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 09:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 771027

Sample: 536990-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 09:59

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 771027

Sample: 536990-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 10:36

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0115	0.0300	38	80-120	*

Lab Batch #: 771027

Sample: 343218-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 13:22

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0369	0.0300	123	80-120	*

Lab Batch #: 771027

Sample: 343218-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 14:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0372	0.0300	124	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: Lovington Gathering WTI

Work Orders : 343328,

Lab Batch #: 771027

Sample: 343328-001 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 15:48

### 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	0.0162	0.0300	54	80-120	*

Lab Batch #: 771027

Sample: 343328-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 16:07

### 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	0.0163	0.0300	54	80-120	*

Lab Batch #: 771027

Sample: 343328-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 16:25

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0153	0.0300	51	80-120	*

Lab Batch #: 771027

Sample: 343328-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 17:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0202	0.0300	67	80-120	*

Lab Batch #: 771027

Sample: 343328-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 17:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0239	0.0300	80	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	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] =  $100 * A / B$

Results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Lovington Gathering WTI

Work Orders : 343328,

Lab Batch #: 771027

Sample: 343328-008 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 17:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0205	0.0300	68	80-120	*

Lab Batch #: 771027

Sample: 343328-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/03/09 18:16

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0175	0.0300	58	80-120	*

Lab Batch #: 771296

Sample: 537136-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/05/09 14:52

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 771296

Sample: 537136-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/05/09 15:11

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 771296

Sample: 537136-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/05/09 15:48

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0133	0.0300	44	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] =  $100 * A / B$

Results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Lovington Gathering WTI

Work Orders : 343328,

Project ID: 2006-142

Lab Batch #: 771296

Sample: 343328-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/05/09 16:07

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0179	0.0300	60	80-120	**

Lab Batch #: 771296

Sample: 343328-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/05/09 21:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0183	0.0300	61	80-120	*

Lab Batch #: 771296

Sample: 343498-012 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/05/09 22:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 771296

Sample: 343498-012 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/05/09 22:53

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0316	0.0300	105	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	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] =  $100 * A / B$

Results are based on MDL and validated for QC purposes.



**Project Name: Lovington Gathering WTI**

**Work Order #: 343328**

**Analyst: ASA**

**Lab Batch ID: 771027**

**Sample: 536990-1-BKS**

**Date Prepared: 09/03/2009**

**Batch #: 1**

**Project ID: 2006-142**

**Date Analyzed: 09/03/2009**

**Matrix: Water**

**Units: mg/L**

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	0.1023	102	0.1	0.0998	100	2	70-125	25
	Toluene	ND	0.1000	0.0982	98	0.1	0.0956	96	3	70-125	25
	Ethylbenzene	ND	0.1000	0.1093	109	0.1	0.1071	107	2	71-129	25
	m,p-Xylenes	ND	0.2000	0.2292	115	0.2	0.2240	112	2	70-131	25
	o-Xylene	ND	0.1000	0.1065	107	0.1	0.1040	104	2	71-133	25

**Analyst: ASA**

**Lab Batch ID: 771296**

**Sample: 537136-1-BKS**

**Date Prepared: 09/04/2009**

**Batch #: 1**

**Date Analyzed: 09/05/2009**

**Matrix: Water**

**Units: mg/L**

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	0.0981	98	0.1	0.1047	105	7	70-125	25
	Toluene	ND	0.1000	0.0941	94	0.1	0.1006	101	7	70-125	25
	Ethylbenzene	ND	0.1000	0.1048	105	0.1	0.1124	112	7	71-129	25
	m,p-Xylenes	ND	0.2000	0.2192	110	0.2	0.2333	117	6	70-131	25
	o-Xylene	ND	0.1000	0.1025	103	0.1	0.1103	110	7	71-133	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 MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 343328

Lab Batch ID: 771027

Date Analyzed: 09/03/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 343218-001 S

Date Prepared: 09/03/2009

Batch #: 1

Matrix: Water

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Reporting Units: mg/L	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	0.1000	0.0950	95	0.1000	0.1022	102	7	70-125	25	
		Toluene	ND	0.1000	0.0916	92	0.1000	0.0983	98	7	70-125	25	
		Ethylbenzene	ND	0.1000	0.1034	103	0.1000	0.1104	110	7	71-129	25	
		m,p-Xylenes	ND	0.2000	0.2147	107	0.2000	0.2288	114	6	70-131	25	
		o-Xylene	ND	0.1000	0.0997	100	0.1000	0.1073	107	7	71-133	25	

Lab Batch ID: 771296

Date Analyzed: 09/05/2009

Reporting Units: mg/L

QC- Sample ID: 343498-012 S

Date Prepared: 09/04/2009

Batch #: 1

Matrix: Water

Analyst: ASA

Reporting Units: mg/L											
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	0.0738	0.1000	0.1737	100	0.1000	0.1715	98	1	70-125	25
	Toluene	ND	0.1000	0.0904	90	0.1000	0.0881	88	3	70-125	25
	Ethylbenzene	ND	0.1000	0.0966	97	0.1000	0.0954	95	1	71-129	25
	m,p-Xylenes	ND	0.2000	0.2006	100	0.2000	0.1992	100	1	70-131	25
	o-Xylene	ND	0.1000	0.0940	94	0.1000	0.0929	93	1	71-133	25

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

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

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

# Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST  
12800 West 120 East  
Odessa, Texas 79765  
Phone: 432-563-1800  
Fax: 432-863-1713

Project Manager: Curt Stanley PAGE 01 OF 01

Company Name: Basin Environmental Service Technologies, LLC

Company Address: 2800 Plains Hwy

City/State/Zip: Lovington, NM 88260

Telephone No: (575) 441-2244

Sampler Signature: *[Signature]* e-mail: cstanley@basinenv.com

Project Name: Lovington Gathering WTI

Project #: 2006-142

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Fax No: (575) 398-1423

Lab # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Preservation & # of Containers	Matrix	Analysis For
01	MW-5			9/1/2009	0830	3 X	Water	TOCIP
02	MW-4			9/1/2009	0815	3 X	Water	TOTAL
03	MW-6			9/1/2009	0950	3 X	Water	TOCIP
04	MW-9			9/1/2009	1025	3 X	Water	TOTAL
05	MW-1			9/1/2009	1105	3 X	Water	TOCIP
06	MW-2			9/1/2009	1130	3 X	Water	TOTAL
07	MW-8			9/1/2009	1205	3 X	Water	TOCIP
08	MW-7			9/1/2009	1235	3 X	Water	TOTAL
09	MW-3			9/1/2009	1305	3 X	Water	TOCIP

Special Instructions:

Laboratory Comments:

Requested by: *[Signature]* Date: 9/2/09 Time: 1350  
Released by: *[Signature]* Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Received by: *[Signature]* Date: 9/3/09 Time: 1350  
Received by: *[Signature]* Date: \_\_\_\_\_ Time: \_\_\_\_\_

Temperature Upon Receipt: 5.1 °C

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

Client: Plains / Basin Env.  
Date/ Time: 9.3.09 13:50  
Lab ID #: 343328  
Initials: AL

**Sample Receipt Checklist**

Client Initials

#1	Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	5.1 °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	Not Present	
#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	Not Applicable	
#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 344353

for

## PLAINS ALL AMERICAN EH&S

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**16-SEP-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 (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)



16-SEP-09

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

Reference: XENCO Report No: **344353**  
**Lovington Gathering WTI**  
Project Address: Lea 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 344353. 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. 344353 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 344353**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Lovington Gathering WTI

**Sample Id**

MW-9

**Matrix**

W

**Date Collected**

Sep-10-09 09:40

**Sample Depth**

**Lab Sample Id**

344353-001



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Lovington Gathering WTI*

*Project ID: 2006-142*

*Work Order Number: 344353*

*Report Date: 16-SEP-09*

*Date Received: 09/11/2009*

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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-772597 BTEX-MTBE EPA 8021B

SW8021BM

Batch 772597, 4-Bromofluorobenzene recovered below QC limits sample Data confirmed by re-analysis. Matrix Interference is suspected in sample surrogate failures. Samples affected are: 537880-1-BLK, 344353-001. QC samples were not reanalyzed.



**Certificate of Analysis Summary 344353**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



**Project Id:** 2006-142  
**Contact:** Jason Henry  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Sep-11-09 04:35 pm  
**Report Date:** 16-SEP-09  
**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	344353-001						
	<i>Field Id:</i>	MW-9						
	<i>Depth:</i>							
	<i>Matrix:</i>	WATER						
	<i>Sampled:</i>	Sep-10-09 09:40						
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Sep-15-09 14:30						
	<i>Analyzed:</i>	Sep-16-09 02:38						
	<i>Units/RL:</i>	mg/L RL						
	Benzene	1.838 0.0100						
	Toluene	ND 0.0200						
	Ethylbenzene	ND 0.0100						
	m,p-Xylenes	0.0537 0.0200						
	o-Xylene	ND 0.0100						
	Total Xylenes	0.0537 0.0100						
	Total BTEX	1.892 0.0100						

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



## 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  
 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: Lovington Gathering WTI

Work Orders : 344353,

Lab Batch #: 772597

Sample: 537880-1-BKS / BKS

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/15/09 22:37

### 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	0.0310	0.0300	103	80-120	

Lab Batch #: 772597

Sample: 537880-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/15/09 22:55

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 772597

Sample: 537880-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/15/09 23:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0145	0.0300	48	80-120	*

Lab Batch #: 772597

Sample: 344353-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 02:38

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0208	0.0300	69	80-120	**

Lab Batch #: 772597

Sample: 344338-003 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 05:41

### 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	0.0319	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: Lovington Gathering WTI

Work Orders : 344353,

Lab Batch #: 772597

Sample: 344338-003 SD / MSD

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 09/16/09 06:00

### 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	0.0351	0.0300	117	80-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





Project Name: Lovington Gathering WTI

Work Order #: 344353

Analyst: ASA

Lab Batch ID: 772597

Sample: 537880-1-BKS

Date Prepared: 09/15/2009

Batch #: 1

Project ID: 2006-142

Date Analyzed: 09/15/2009

Matrix: Water

Units: mg/L

Units: mg/L											
BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	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	0.1069	107	0.1	0.1062	106	1	70-125	25	
Toluene	ND	0.1000	0.1012	101	0.1	0.1007	101	0	70-125	25	
Ethylbenzene	ND	0.1000	0.1095	110	0.1	0.1110	111	1	71-129	25	
m,p-Xylenes	ND	0.2000	0.2246	112	0.2	0.2248	112	0	70-131	25	
o-Xylene	ND	0.1000	0.1069	107	0.1	0.1064	106	0	71-133	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 - MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order # : 344353

Lab Batch ID: 772597

Date Analyzed: 09/16/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 344338-003 S

Date Prepared: 09/15/2009

Batch #: 1 Matrix: Water

Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Reporting Units: mg/L											
BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0930	93	0.1000	0.1047	105	12	70-125	25	
Toluene	ND	0.1000	0.0879	88	0.1000	0.0993	99	12	70-125	25	
Ethylbenzene	ND	0.1000	0.0970	97	0.1000	0.1103	110	13	71-129	25	
m,p-Xylenes	ND	0.2000	0.1977	99	0.2000	0.2248	112	13	70-131	25	
o-Xylene	ND	0.1000	0.0930	93	0.1000	0.1066	107	14	71-133	25	

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

**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

12600 West I-20 East  
Odessa, Texas 79765

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

**Project Name: Lovington Gathering WTH**

Project #: 2008-142

PO #: PAA-J. Henry

Unit: ☒ Standard ☐ TRPP

Analyze For:

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

Client: Basin Env. / Plains  
Date/ Time: 9-11-09 16:35  
Lab ID #: 344353  
Initials: AL

**Sample Receipt Checklist**

				Client Initials	
#1	Temperature of container/ cooler?	<u>(Yes)</u>	No	<u>3.6</u>	<u>°C</u>
#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	<u>Not Present</u>	
#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	<u>ID written on Cont./ Lid</u>	
#9	Container label(s) legible and intact?	<u>(Yes)</u>	No	<u>Not Applicable</u>	
#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	<u>See Below</u>	
#13	Samples properly preserved?	<u>(Yes)</u>	No	<u>See Below</u>	
#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	<u>See Below</u>	
#18	All samples received within sufficient hold time?	<u>(Yes)</u>	No	<u>See Below</u>	
#19	Subcontract of sample(s)?	<u>Yes</u>	No	<u>(Not Applicable)</u>	
#20	VOC samples have zero headspace?	<u>(Yes)</u>	No	<u>Not Applicable</u>	

**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 347203

for

## PLAINS ALL AMERICAN EH&S

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**09-OCT-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)



09-OCT-09

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

Reference: XENCO Report No: **347203**  
**Lovington Gathering WTI**  
Project Address: Lea 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 347203. 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. 347203 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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*Certified and approved by numerous States and Agencies.*

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



**Sample Cross Reference 347203**



**PLAINS ALL AMERICAN EH&S, Midland, TX**  
Lovington Gathering WTI

**Sample Id**

**Matrix**

**Date Collected**

**Sample Depth**

**Lab Sample Id**

MW-9

W

Oct-05-09 11:00

347203-001



## **CASE NARRATIVE**

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

**Project Name: Lovington Gathering WTI**

*Project ID: 2006-142*

*Work Order Number: 347203*

*Report Date: 09-OCT-09*

*Date Received: 10/06/2009*

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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-775966 BTEX-MTBE EPA 8021B  
SW8021BM*

*Batch 775966, 1,4-Difluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis  
Samples affected are: 347203-001.*

*Batch: LBA-776140 BTEX-MTBE EPA 8021B  
None*





**Certificate of Analysis Summary 347203**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**




**Project Id:** 2006-142  
**Contact:** Jason Henry  
**Project Location:** Lea County, NM

**Date Received in Lab:** Tue Oct-06-09 09:13 am  
**Report Date:** 09-OCT-09  
**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>		<i>Lab Id:</i>	347203-001				
	<b>BTEX by EPA 8021B</b>	<i>Field Id:</i>	MW-9				
		<i>Depth:</i>					
		<i>Matrix:</i>	WATER				
		<i>Sampled:</i>	Oct-05-09 11:00				
		<i>Extracted:</i>	Oct-06-09 15:00				
		<i>Analyzed:</i>	Oct-06-09 23:27				
		<i>Units/RL:</i>	mg/L RL				
Benzene			0.9850 D 0.1000				
Toluene			ND 0.0020				
Ethylbenzene			ND 0.0010				
m,p-Xylenes			0.0442 0.0020				
o-Xylene			ND 0.0010				
Total Xylenes			0.0442 0.0010				
Total BTEX			1.029 0.0010				

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

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



## Form 2 - Surrogate Recoveries

Project Name: Lovington Gathering WTI

Work Orders : 347203,

Project ID: 2006-142

Lab Batch #: 775966

Sample: 539833-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/06/09 20:17

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 775966

Sample: 539833-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/06/09 20:38

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 775966

Sample: 539833-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/06/09 21:20

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 775966

Sample: 347203-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/06/09 23:27

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0408	0.0300	136	80-120	**
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 775966

Sample: 346642-006 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 05:46

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	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: Lovington Gathering WTI

Work Orders : 347203,

Project ID: 2006-142

Lab Batch #: 775966

Sample: 346642-006 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 06:07

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 776140

Sample: 539963-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 09:09

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 776140

Sample: 539963-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 09:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 776140

Sample: 539963-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 10:12

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 776140

Sample: 347203-001 / DL

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 19:13

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	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: Lovington Gathering WTI

Work Orders : 347203,

Lab Batch #: 776140

Sample: 347183-001 S / MS

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 19:55

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 776140

Sample: 347183-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/07/09 20:16

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	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.



**Project Name: Lovington Gathering WTI**

**Work Order #: 347203**

**Analyst: ASA**

**Lab Batch ID: 775966**

**Sample: 539833-1-BKS**

**Date Prepared: 10/06/2009**

**Batch #: 1**

**Project ID: 2006-142**

**Date Analyzed: 10/06/2009**

**Matrix: Water**

**Units: mg/L**

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/L												
BTEX by EPA 8021B		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	0.0919	92	0.1	0.0915	92	0	70-125	25	
Toluene		ND	0.1000	0.0903	90	0.1	0.0903	90	0	70-125	25	
Ethylbenzene		ND	0.1000	0.0917	92	0.1	0.0921	92	0	71-129	25	
m,p-Xylenes		ND	0.2000	0.2002	100	0.2	0.2013	101	1	70-131	25	
o-Xylene		ND	0.1000	0.0975	98	0.1	0.0983	98	1	71-133	25	

**Analyst: ASA**

**Lab Batch ID: 776140**

**Sample: 539963-1-BKS**

**Date Prepared: 10/07/2009**

**Batch #: 1**

**Date Analyzed: 10/07/2009**

**Matrix: Water**

**Units: mg/L**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B		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	0.0931	93	0.1	0.0942	94	1	70-125	25	
Toluene		ND	0.1000	0.0918	92	0.1	0.0928	93	1	70-125	25	
Ethylbenzene		ND	0.1000	0.0940	94	0.1	0.0945	95	1	71-129	25	
m,p-Xylenes		ND	0.2000	0.2064	103	0.2	0.2069	103	0	70-131	25	
o-Xylene		ND	0.1000	0.0990	99	0.1	0.0991	99	0	71-133	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 - MSD Recoveries

Project Name: Lovington Gathering WTI



Work Order #: 347203

Lab Batch ID: 775966

Date Analyzed: 10/07/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 346642-006 S Batch #: 1 Matrix: Water

Date Prepared: 10/06/2009 Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B		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
Analytes												
Benzene		ND	0.1000	0.0827	83	0.1000	0.0900	90	8	70-125	25	
Toluene		ND	0.1000	0.0817	82	0.1000	0.0888	89	8	70-125	25	
Ethylbenzene		ND	0.1000	0.0818	82	0.1000	0.0893	89	9	71-129	25	
m,p-Xylenes		ND	0.2000	0.1784	89	0.2000	0.1951	98	9	70-131	25	
o-Xylene		ND	0.1000	0.0859	86	0.1000	0.0949	95	10	71-133	25	

Lab Batch ID: 776140

Date Analyzed: 10/07/2009

Reporting Units: mg/L

QC- Sample ID: 347183-001 S Batch #: 1 Matrix: Water

Date Prepared: 10/07/2009 Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B		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
Analytes												
Benzene		ND	0.1000	0.0800	80	0.1000	0.0802	80	0	70-125	25	
Toluene		ND	0.1000	0.0795	80	0.1000	0.0796	80	0	70-125	25	
Ethylbenzene		ND	0.1000	0.0802	80	0.1000	0.0801	80	0	71-129	25	
m,p-Xylenes		ND	0.2000	0.1743	87	0.2000	0.1728	86	1	70-131	25	
o-Xylene		ND	0.1000	0.0844	84	0.1000	0.0836	84	1	71-133	25	

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

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

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

# Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST  
12600 West I-20 East  
Odessa, Texas 79765  
Phone: 432-563-1800  
Fax: 432-563-1713

Project Manager: Curt Stanley PAGE 01 OF 01

Company Name Basin Environmental Service Technologies, LLC

Company Address: P.O. Box 301

City/State/Zip: Lovington, NM 88260

Telephone No: (505) 441-2244

Fax No: (505) 395-1429

Sampler Signature: *Curt Stanley* email: cstanley@basinenv.com

Project Name: Lovington Gathering WTI

Project #: 2006-142

Project Loc: Lea County, NM

PO #: PAA - J. Henry

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(Lab use only)

ORDER #: 347203

LAB USE ONLY	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Preservation & # of Containers	Matrix	Analysis For
01	MW-9			10/5/2009	1100	3	GW	<input checked="" type="checkbox"/> RUSH-TAT (Prescribed) N, A, T, N <input checked="" type="checkbox"/> PAH 8270 <input checked="" type="checkbox"/> N.O.M. <input checked="" type="checkbox"/> HCl <input checked="" type="checkbox"/> BTEX (Benzene, Ethyl Benzene, Toluene, Xylenes) <input checked="" type="checkbox"/> Volatiles <input checked="" type="checkbox"/> Metals: As, Ag, Ba, Bi, Cd, Cr, Pb, Hg, Se <input checked="" type="checkbox"/> Sulfate / ESP / CEC <input checked="" type="checkbox"/> Nitrate (As, Ba, Bi, Cd, Cr, Pb, Hg, Se) <input checked="" type="checkbox"/> Cadmium (As, Ba, Bi, Cd, Cr, Pb, Hg, Se) <input checked="" type="checkbox"/> TPH: TX 1005 TX 1006 <input checked="" type="checkbox"/> TPH: 418.1 401.5M 401.5S <input checked="" type="checkbox"/> M - Monocyclic Aromatic Hydrocarbons <input checked="" type="checkbox"/> GW - Groundwater 5 - Solid <input checked="" type="checkbox"/> Other (Specify)

Special Instructions:

Approved by:	Date	Time	Received by:	Date	Time
<i>Curt Stanley</i>	10/09	0413			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Laboratory Comments:

Sample Contained: None  
 VOC Free of Water: None  
 Custody seals on containers: None  
 Custody seals on containers: None  
 Sample Hand Delivered: None  
 by Courier: None  
 by UPS: None  
 by FedEx: None  
 by Other: None  
 Temperature Upon Receipt: 5.1



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

Client: Basin Env./Plains  
Date/ Time: 10-6-09 9:13  
Lab ID #: 347203  
Initials: AL

**Sample Receipt Checklist**

				Client Initials	
#1	Temperature of container/ cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	5.1	°C
#2	Shipping container in good condition?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<del>Not Present</del>	
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Present	
#5	Chain of Custody present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#11	Containers supplied by ELOT?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#12	Samples in proper container/ bottle?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#13	Samples properly preserved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#14	Sample bottles intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#15	Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#16	Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#18	All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below	
#19	Subcontract of sample(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<del>Not Applicable</del>	
#20	VOC samples have zero headspace?	<input checked="" type="radio"/> Yes	<input type="radio"/> 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 350679**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**11-NOV-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)



11-NOV-09

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

Reference: XENCO Report No: **350679**  
**Lovington Gathering WTI**  
Project Address: Lea 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 350679. 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. 350679 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 350679



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-10	W	Nov-02-09 09:00		350679-001



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Lovington Gathering WTI*

*Project ID: 2006-142*

*Work Order Number: 350679*

*Report Date: 11-NOV-09*

*Date Received: 11/03/2009*

---

**Sample receipt non conformances and Comments:**

*None*

---

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

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-780311 Determination of Inorganic Anions In Water By Ion  
E300MI*

*Batch 780311, Chloride, Fluoride recovered above QC limits in the Matrix Spike.*

*Samples affected are: 350679-001.*

*The Laboratory Control Sample for Chloride , Fluoride is within laboratory Control Limits*

*E300MI*

*Batch 780311, Nitrate as N RPD is outside the QC limit. This is most likely due to sample non-homogeneity.*

*Samples affected are: 350679-001.*

*Batch: LBA-780340 Alkalinity by SM2320B*

*None*

*Batch: LBA-780359 Mercury by SW-846 7470A  
SW7470A*

*Batch 780359, Mercury recovered below QC limits in the Matrix Spike and Matrix Spike  
Duplicate.*

*Samples affected are: 350679-001.*

*The Laboratory Control Sample for Mercury is within laboratory Control Limits*

*Batch: LBA-780428 Metals per ICP by SW846 6010B*

*None*



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Lovington Gathering WTI*

*Project ID: 2006-142*

*Work Order Number: 350679*

*Report Date: 11-NOV-09*

*Date Received: 11/03/2009*

---

*Batch: LBA-780438 Metals by EPA 200.8*

*SW6020*

*Batch 780438, Boron and Iron RPD is outside the QC limit. This is most likely due to sample non-homogeneity.*

*Samples affected are: 350103-015, 350679-001.*

*SW6020*

*Batch 780438, Zinc recovered below QC limits in the Matrix Spike Duplicate. Aluminum recovered above QC limits in the Matrix Spike. Boron recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.*

*Samples affected are: 350679-001.*

*The Laboratory Control Sample for Aluminum, Zinc, Boron is within laboratory Control Limits*

*Batch: LBA-780540 VOAs by SW-846 8260B*

*None*

*Batch: LBA-780919 SVOAs by SW-846 8270C*


*None*



**Project Name: Lovington Gathering WTI**

**Project Manager:** Brent Barron, II

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Brent Barron, II  
Odessa Laboratory Manager



Certificate of Analysis Summary 350679  
PLAINS ALL AMERICAN E&S, Midland, TX



Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Project Name: Lovington Gathering WTI  
Date Received in Lab: Tue Nov-03-09 10:22 am  
Report Date: 11-NOV-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	350679-001				
	Field Id:	MW-10				
	Depth:					
	Matrix:	WATER				
	Sampled:	Nov-02-09 09:00				
Inductively Coupled Plasma Atomic Emission Spectroscopy Mass Spectrometry SUB: T104704215-08B-TX	Extracted:	Nov-05-09 09:20				
	Analyzed:	Nov-05-09 15:55				
	Units/RL:	mg/L RL				
	Aluminum	0.908 0.010				
	Arsenic	0.007 0.002				
	Barium	0.134 0.005				
	Boron	0.397 0.010				
	Cadmium	ND 0.001				
	Chromium	0.053 0.003				
	Cobalt	ND 0.005				
	Copper	ND 0.003				
	Iron	0.820 0.150				
	Lead	ND 0.002				
	Manganese	0.017 0.003				
	Molybdenum	ND 0.004				
	Nickel	0.027 0.005				
	Selenium	ND 0.003				
	Silver	ND 0.002				
	Zinc	ND 0.003				
Mercury by SW-846 7470A	Extracted:	Nov-04-09 11:00				
	Analyzed:	Nov-05-09 11:44				
	Units/RL:	mg/L RL				
Mercury		0.0001 0.0001				

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Brent Barron, II  
Odessa Laboratory Manager





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**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



**Project Id:** 2006-142  
**Contact:** Jason Henry  
**Project Location:** Lea County, NM

**Date Received in Lab:** Tue Nov-03-09 10:22 am  
**Report Date:** 11-NOV-09  
**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>		<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	<i>Extracted:</i>	<i>Analyzed:</i>	<i>Units/RL:</i>
<b>Metals per ICP by SW846 6010B</b>		350679-001	MW-10		WATER	Nov-02-09 09:00		Nov-05-09 13:02	mg/L RL
Calcium							76.5	2.50	
Magnesium							13.6	0.250	
Potassium							ND	12.5	
Sodium							33.3	12.5	

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Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Tue Nov-03-09 10:22 am  
Report Date: 11-NOV-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	350679-001			
	Field Id:	MW-10			
	Depth:				
	Matrix:	WATER			
	Sampled:	Nov-02-09 09:00			
SVOAs by SW-846 8270C SUB: T104704215-08B-TX	Extracted:	Nov-05-09 08:16			
	Analyzed:	Nov-09-09 12:29			
	Units/RL:	mg/L RL			
Acenaphthene		ND 0.005			
Acenaphthylene		ND 0.005			
Aniline (Phenylamine, Aminobenzene)		ND 0.020			
Anthracene		ND 0.005			
Benzo(a)anthracene		ND 0.005			
Benzo(a)pyrene		ND 0.005			
Benzo(b)fluoranthene		ND 0.005			
Benzo(k)fluoranthene		ND 0.005			
Benzo(g,h,i)perylene		ND 0.005			
Benzoic Acid		ND 0.030			
Benzyl Butyl Phthalate		ND 0.005			
bis(2-chloroethoxy) methane		ND 0.010			
bis(2-chloroethyl) ether		ND 0.010			
bis(2-chloroisopropyl) ether		ND 0.010			
bis(2-ethylhexyl) phthalate		ND 0.005			
4-Bromophenyl-phenylether		ND 0.010			
4-chloro-3-methylphenol		ND 0.010			
4-Chloroaniline		ND 0.020			
2-Chloronaphthalene		ND 0.010			
2-Chlorophenol		ND 0.010			
4-Chlorophenyl Phenyl Ether		ND 0.010			
Chrysene		ND 0.005			
Dibenz(a,h)anthracene		ND 0.005			
Dibenzofuran		ND 0.010			
di-n-Butyl Phthalate		ND 0.005			

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Project Id: 2006-142  
Contact: Jason Henry  
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Date Received in Lab: Tue Nov-03-09 10:22 am  
Report Date: 11-NOV-09  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	350679-001			
	Field Id:	MW-10			
	Depth:				
	Matrix:	WATER			
	Sampled:	Nov-02-09 09:00			
SVOAs by SW-846 8270C SUB: T104704215-08B-TX	Extracted:	Nov-05-09 08:16			
	Analyzed:	Nov-09-09 12:29			
	Units/RL:	mg/L RL			
1,2-Dichlorobenzene		ND 0.010			
1,3-Dichlorobenzene		ND 0.010			
1,4-Dichlorobenzene		ND 0.010			
3,3-Dichlorobenzidine		ND 0.010			
2,4-Dichlorophenol		ND 0.010			
Diethyl Phthalate		ND 0.005			
Dimethyl Phthalate		ND 0.005			
2,4-Dimethylphenol		ND 0.010			
4,6-dinitro-2-methyl phenol		ND 0.010			
2,4-Dinitrophenol		ND 0.010			
2,4-Dinitrotoluene		ND 0.010			
2,6-Dinitrotoluene		ND 0.010			
di-n-Octyl Phthalate		ND 0.005			
Fluoranthene		ND 0.005			
Fluorene		ND 0.005			
Hexachlorobenzene		ND 0.010			
Hexachlorobutadiene		ND 0.010			
Hexachlorocyclopentadiene		ND 0.010			
Hexachloroethane		ND 0.010			
Indeno(1,2,3-c,d)Pyrene		ND 0.005			
Isophorone		ND 0.010			
2-Methylnaphthalene		ND 0.005			
2-methylphenol		ND 0.010			
3&4-Methylphenol		ND 0.010			
Naphthalene		ND 0.005			

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Project Id: 2006-142  
Contact: Jason Henry  
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Date Received in Lab: Tue Nov-03-09 10:22 am  
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Analysis Requested	Lab Id:	350679-001				
	Field Id:	MW-10				
	Depth:					
	Matrix:	WATER				
	Sampled:	Nov-02-09 09:00				
SVOAs by SW-846 8270C SUB: T104704215-08B-TX	Extracted:	Nov-05-09 08:16				
	Analyzed:	Nov-09-09 12:29				
	Units/RL:	mg/L RL				
2-Nitroaniline		ND 0.010				
3-Nitroaniline		ND 0.010				
4-Nitroaniline		ND 0.020				
Nitrobenzene		ND 0.010				
2-Nitrophenol		ND 0.010				
4-Nitrophenol		ND 0.010				
N-Nitrosodi-n-Propylamine		ND 0.010				
N-Nitrosodiphenylamine		ND 0.010				
Pentachlorophenol		ND 0.010				
Phenanthrene		ND 0.005				
Phenol		ND 0.010				
Pyrene		ND 0.005				
Pyridine		ND 0.010				
1,2,4-Trichlorobenzene		ND 0.010				
2,4,5-Trichlorophenol		ND 0.010				
2,4,6-Trichlorophenol		ND 0.010				

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Project Id: 2006-142  
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Date Received in Lab: Tue Nov-03-09 10:22 am  
Report Date: 11-NOV-09  
Project Manager: Brent Barron, II

<i>Analysis Requested</i>		Lab Id: Field Id: Depth: Matrix: Sampled:	350679-001 MW-10 WATER Nov-02-09 09:00			
VOAs by SW-846 8260B SUB: T104704295-08-TX		Extracted: Analyzed: Units/RL:	Nov-05-09 14:05 Nov-05-09 15:29 mg/L RL			
Benzene			ND 0.005			
Bromobenzene			ND 0.005			
Bromochloromethane			ND 0.005			
Bromodichloromethane			ND 0.005			
Bromoform			ND 0.005			
Methyl bromide			ND 0.005			
MTBE			ND 0.005			
n-Butylbenzene			ND 0.005			
Sec-Butylbenzene			ND 0.005			
tert-Butylbenzene			ND 0.005			
Carbon Tetrachloride			ND 0.005			
Chlorobenzene			ND 0.005			
Chloroethane			ND 0.010			
Chloroform			ND 0.005			
Methyl Chloride			ND 0.010			
2-Chlorotoluene			ND 0.005			
4-Chlorotoluene			ND 0.005			
p-Cymene (p-isopropyltoluene)			ND 0.005			
Dibromochloromethane			ND 0.005			
1,2-Dibromo-3-Chloropropane			ND 0.005			
1,2-Dibromoethane			ND 0.005			
Methylene bromide			ND 0.005			
1,2-Dichlorobenzene			ND 0.005			
1,3-Dichlorobenzene			ND 0.005			
1,4-Dichlorobenzene			ND 0.005			

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Odessa Laboratory Manager



**Project Name: Lovington Gathering WTI**

**Project Manager:** Brent Barron, II

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Odessa Laboratory Manager



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**Project Name: Lovington Gathering WTI**



**Project Id:** 2006-142  
**Contact:** Jason Henry  
**Project Location:** Lea County, NM

**Date Received in Lab:** Tue Nov-03-09 10:22 am  
**Report Date:** 11-NOV-09  
**Project Manager:** Brent Barron, II

Analysis Requested	Lab Id:	350679-001				
	Field Id:	MW-10				
	Depth:					
	Matrix:	WATER				
	Sampled:	Nov-02-09 09:00				
VOAs by SW-846 8260B SUB: T104704295-08-TX	Extracted:	Nov-05-09 14:05				
	Analyzed:	Nov-05-09 15:29				
	Units/RL:	mg/L RL				
1,1,1-Trichloroethane		ND 0.005				
1,1,2-Trichloroethane		ND 0.005				
Trichloroethylene		ND 0.005				
Trichlorofluoromethane		ND 0.005				
1,2,3-Trichloropropane		ND 0.005				
1,2,4-Trimethylbenzene		ND 0.005				
1,3,5-Trimethylbenzene		ND 0.005				
o-Xylene		ND 0.005				
m,p-Xylene		ND 0.010				
Vinyl Chloride		ND 0.002				

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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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2505 North Falkenburg Rd, Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
12600 West I-20 East, Odessa, TX 79765  
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(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: Lovington Gathering WTI

Lab Orders : 350679,

Project ID: 2006-142

Lab Batch #: 780919

Sample: 542398-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 13:34

## SURROGATE RECOVERY STUDY

SVOAs by SW-846 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.047	0.050	94	43-116	
2-Fluorophenol	0.039	0.050	78	21-100	
Nitrobenzenc-d5	0.044	0.050	88	35-114	
Phenol-d6	0.029	0.050	58	10-94	
Terphenyl-D14	0.055	0.050	110	33-141	
2,4,6-Tribromophenol	0.048	0.050	96	10-123	

Lab Batch #: 780919

Sample: 542398-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 14:12

## SURROGATE RECOVERY STUDY

SVOAs by SW-846 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.045	0.050	90	43-116	
2-Fluorophenol	0.034	0.050	68	21-100	
Nitrobenzenc-d5	0.044	0.050	88	35-114	
Phenol-d6	0.024	0.050	48	10-94	
Terphenyl-D14	0.052	0.050	104	33-141	
2,4,6-Tribromophenol	0.048	0.050	96	10-123	

Lab Batch #: 780919

Sample: 542398-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 14:50

## SURROGATE RECOVERY STUDY

SVOAs by SW-846 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.048	0.050	96	43-116	
2-Fluorophenol	0.035	0.050	70	21-100	
Nitrobenzenc-d5	0.046	0.050	92	35-114	
Phenol-d6	0.026	0.050	52	10-94	
Terphenyl-D14	0.054	0.050	108	33-141	
2,4,6-Tribromophenol	0.051	0.050	102	10-123	

\* 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: Lovington Gathering WTI

Work Orders : 350679,

Lab Batch #: 780919

Sample: 350679-001 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/09/09 12:29

### SURROGATE RECOVERY STUDY

SVOAs by SW-846 8270C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
2-Fluorobiphenyl	0.044	0.050	88	43-116	
2-Fluorophenol	0.021	0.050	42	21-100	
Nitrobenzene-d5	0.040	0.050	80	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.049	0.050	98	33-141	
2,4,6-Tribromophenol	0.047	0.050	94	10-123	

Lab Batch #: 780540

Sample: 542495-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 11:26

### SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0496	0.0500	99	74-124	
Dibromofluoromethane	0.0458	0.0500	92	75-131	
1,2-Dichloroethane-D4	0.0464	0.0500	93	63-144	
Toluene-D8	0.0514	0.0500	103	80-117	

Lab Batch #: 780540

Sample: 542495-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 14:42

### SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0472	0.0500	94	74-124	
Dibromofluoromethane	0.0424	0.0500	85	75-131	
1,2-Dichloroethane-D4	0.0464	0.0500	93	63-144	
Toluene-D8	0.0520	0.0500	104	80-117	

\* 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: Lovington Gathering WTI

Work Orders : 350679,

Project ID: 2006-142

Lab Batch #: 780540

Sample: 350679-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 15:29

### SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0487	0.0500	97	74-124	
Dibromofluoromethane	0.0436	0.0500	87	75-131	
1,2-Dichloroethane-D4	0.0448	0.0500	90	63-144	
Toluene-D8	0.0522	0.0500	104	80-117	

Lab Batch #: 780540

Sample: 350679-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 17:17

### SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0494	0.0500	99	74-124	
Dibromofluoromethane	0.0425	0.0500	85	75-131	
1,2-Dichloroethane-D4	0.0435	0.0500	87	63-144	
Toluene-D8	0.0509	0.0500	102	80-117	

Lab Batch #: 780540

Sample: 350679-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 11/05/09 17:39

### SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0501	0.0500	100	74-124	
Dibromofluoromethane	0.0432	0.0500	86	75-131	
1,2-Dichloroethane-D4	0.0438	0.0500	88	63-144	
Toluene-D8	0.0506	0.0500	101	80-117	

\* 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: Lovington Gathering WTI



Work Order #: 350679

Project ID:

2006-142

Lab Batch #: 780340

Sample: 780340-1-BKS

Matrix: Water

Date Analyzed: 11/03/2009

Date Prepared: 11/03/2009

Analyst: WRU

Reporting Units: mg/L

Batch #: 1

## BLANK /BLANK SPIKE RECOVERY STUDY

Alkalinity by SM2320B	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Alkalinity, Total (as CaCO3)	ND	170	170	100	80-120	

Lab Batch #: 780438

Sample: 542412-1-BKS

Matrix: Water

Date Analyzed: 11/05/2009

Date Prepared: 11/05/2009

Analyst: HAT

Reporting Units: mg/L

Batch #: 1

## BLANK /BLANK SPIKE RECOVERY STUDY

Inductively Coupled Plasma Atomic Emission Sp	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
Aluminum	ND	0.200	0.171	86	75-125	
Arsenic	ND	0.050	0.051	102	75-125	
Barium	ND	0.050	0.055	110	75-125	
Boron	0.015	0.020	0.022	110	75-125	
Cadmium	ND	0.020	0.022	110	75-125	
Chromium	ND	0.050	0.049	98	75-125	
Cobalt	ND	0.050	0.050	100	75-125	
Copper	ND	0.050	0.051	102	75-125	
Iron	ND	0.200	0.200	100	75-125	
Lead	ND	0.050	0.049	98	75-125	
Manganese	ND	0.050	0.050	100	75-125	
Molybdenum	ND	0.050	0.053	106	75-125	
Nickel	ND	0.050	0.049	98	75-125	
Selenium	ND	0.050	0.054	108	75-125	
Silver	ND	0.020	0.022	110	75-125	
Zinc	ND	0.050	0.051	102	75-125	

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

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

BP Below Reporting Limit





## Blank Spike Recovery



Project Name: Lovington Gathering WTI

Work Order #: 350679

Project ID:

2006-142

Lab Batch #: 780311

Sample: 780311-1-BKS

Matrix: Water

Date Analyzed: 11/04/2009

Date Prepared: 11/04/2009

Analyst: LATCOR

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

Determination of Inorganic Anions In Water By Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Fluoride	ND	2.50	2.43	97	90-110	
Chloride	ND	10.0	10.3	103	90-110	
Sulfate	ND	11.0	11.2	102	90-110	
Nitrate as N	ND	2.00	2.00	100	90-110	
Ortho-Phosphate	ND	1.60	1.69	106	90-110	

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

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

Below Reporting Limit



# Blank Spike Recovery



Project Name: Lovington Gathering WTI

Work Order #: 350679

Project ID:

2006-142

Lab Batch #: 780540

Sample: 542495-1-BKS

Matrix: Water

Date Analyzed: 11/05/2009

Date Prepared: 11/05/2009

Analyst: JEA

Reporting Units: mg/L

Batch #: 1

## BLANK/BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.050	0.047	94	66-142	
Bromobenzene	ND	0.050	0.045	90	75-125	
Bromochloromethane	ND	0.050	0.046	92	73-125	
Bromodichloromethane	ND	0.050	0.046	92	75-125	
Bromoform	ND	0.050	0.046	92	75-125	
Methyl bromide	ND	0.050	0.049	98	70-130	
MTBE	ND	0.050	0.050	100	65-135	
n-Butylbenzene	ND	0.050	0.052	104	75-125	
Sec-Butylbenzene	ND	0.050	0.052	104	75-125	
tert-Butylbenzene	ND	0.050	0.052	104	75-125	
Carbon Tetrachloride	ND	0.050	0.052	104	62-125	
Chlorobenzene	ND	0.050	0.048	96	60-133	
Chloroethane	ND	0.050	0.049	98	70-130	
Chloroform	ND	0.050	0.047	94	74-125	
Methyl Chloride	ND	0.050	0.043	86	70-130	
2-Chlorotoluene	ND	0.050	0.049	98	73-125	
4-Chlorotoluene	ND	0.050	0.048	96	74-125	
p-Cymene (p-Isopropyltoluene)	ND	0.050	0.052	104	75-125	
Dibromochloromethane	ND	0.050	0.047	94	73-125	
1,2-Dibromo-3-Chloropropane	ND	0.050	0.054	108	59-125	
Methylene bromide	ND	0.050	0.050	100	69-127	
1,2-Dichlorobenzene	ND	0.050	0.048	96	75-125	
1,3-Dichlorobenzene	ND	0.050	0.048	96	75-125	
1,4-Dichlorobenzene	ND	0.050	0.048	96	75-125	
Dichlorodifluoromethane	ND	0.050	0.046	92	70-130	
1,1-Dichloroethane	ND	0.050	0.044	88	72-125	
1,2-Dichloroethane	ND	0.050	0.046	92	68-127	
1,1-Dichloroethene	ND	0.050	0.046	92	59-172	
cis-1,2-Dichloroethylene	ND	0.050	0.047	94	75-125	
trans-1,2-dichloroethylene	ND	0.050	0.044	88	75-125	
1,2-Dichloropropane	ND	0.050	0.043	86	74-125	
1,3-Dichloropropane	ND	0.050	0.046	92	75-125	
2,2-Dichloropropane	ND	0.050	0.043	86	75-125	

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

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

ND: Below Reporting Limit

Project Name: Lovington Gathering WTI

Work Order #: 350679

Project ID:

2006-142

Lab Batch #: 780540

Sample: 542495-1-BKS

Matrix: Water

Date Analyzed: 11/05/2009

Date Prepared: 11/05/2009

Analyst: JEA

Reporting Units: mg/L

Batch #: 1

## BLANK /BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
1,1-Dichloropropene	ND	0.050	0.045	90	75-125	
cis-1,3-Dichloropropene	ND	0.050	0.045	90	74-125	
trans-1,3-dichloropropene	ND	0.050	0.046	92	66-125	
Ethylbenzene	ND	0.050	0.051	102	75-125	
Hexachlorobutadiene	ND	0.050	0.052	104	75-125	
isopropylbenzene	ND	0.050	0.052	104	75-125	
Methylene Chloride	ND	0.050	0.038	76	75-125	
Naphthalene	ND	0.050	0.044	88	75-125	
n-Propylbenzene	ND	0.050	0.053	106	75-125	
Styrene	ND	0.050	0.050	100	75-125	
1,1,1,2-Tetrachloroethane	ND	0.050	0.048	96	72-125	
1,1,2,2-Tetrachloroethane	ND	0.050	0.047	94	74-125	
Tetrachloroethylene	ND	0.050	0.051	102	71-125	
luene	ND	0.050	0.049	98	59-139	
1,2,3-Trichlorobenzene	ND	0.050	0.045	90	75-137	
1,2,4-Trichlorobenzene	ND	0.050	0.045	90	75-135	
1,1,1-Trichloroethane	ND	0.050	0.044	88	75-125	
1,1,2-Trichloroethane	ND	0.050	0.045	90	75-127	
Trichloroethylene	ND	0.050	0.047	94	62-137	
Trichlorofluoromethane	ND	0.050	0.048	96	67-125	
1,2,3-Trichloropropane	ND	0.050	0.046	92	75-125	
1,2,4-Trimethylbenzene	ND	0.050	0.050	100	75-125	
1,3,5-Trimethylbenzene	ND	0.050	0.051	102	70-125	
o-Xylene	ND	0.050	0.050	100	75-125	
m,p-Xylene	ND	0.100	0.101	101	75-125	
Vinyl Chloride	ND	0.050	0.044	88	75-125	

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

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

Below Reporting Limit



**Project Name: Lovington Gathering WTI**

**Work Order #: 350679**

**Analyst: LATCOR**

**Lab Batch ID: 780359**

**Sample: 542392-1-BKS**

**Project ID: 2006-142**

**Date Analyzed: 11/05/2009**

**Matrix: Water**

**Date Prepared: 11/04/2009**

**Batch #: 1**

**Units: mg/L**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/L												
Mercury by SW-846 7470A	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
		ND	0.0010	0.0010	100	0.001	0.0009	90	11	75-125	20	
Mercury												

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



# Project Name: Lovington Gathering WTI

Work Order #: 350679

Analyst: KAN

Lab Batch ID: 780919

Sample: 542398-1-BKS

Date Prepared: 11/04/2009

Batch #: 1

Project ID: 2006-142

Date Analyzed: 11/05/2009

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/L											
SVOAs by SW-846 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											
Acenaphthene	ND	0.050	0.042	84	0.05	0.044	88	5	27-132	31	
Acenaphthylene	ND	0.050	0.042	84	0.05	0.045	90	7	46-108	25	
Aniline (Phenylamine, Aminobenzene)	ND	0.050	0.038	76	0.05	0.040	80	5	5-115	25	
Anthracene	ND	0.050	0.043	86	0.05	0.045	90	5	47-145	25	
Benzo(a)anthracene	ND	0.050	0.041	82	0.05	0.044	88	7	33-143	25	
Benzo(a)pyrene	ND	0.050	0.044	88	0.05	0.046	92	4	65-135	25	
Benzo(b)fluoranthene	ND	0.050	0.045	90	0.05	0.049	98	9	24-159	25	
Benzo(k)fluoranthene	ND	0.050	0.044	88	0.05	0.045	90	2	25-125	25	
Benzo(g,h,i)perylene	ND	0.050	0.049	98	0.05	0.053	106	8	65-135	25	
Benzoic Acid	ND	0.150	0.091	61	0.15	0.090	60	1	30-115	40	
Benzyl Butyl Phthalate	ND	0.050	0.047	94	0.05	0.049	98	4	65-135	25	
bis(2-chloroethoxy) methane	ND	0.050	0.039	78	0.05	0.041	82	5	54-188	25	
bis(2-chloroethyl) ether	ND	0.050	0.037	74	0.05	0.039	78	5	65-135	25	
bis(2-chloroisopropyl) ether	ND	0.050	0.037	74	0.05	0.039	78	5	65-135	25	
bis(2-ethylhexyl) phthalate	ND	0.050	0.041	82	0.05	0.043	86	5	8-158	25	
4-Bromophenyl-phenylether	ND	0.050	0.046	92	0.05	0.050	100	8	65-135	25	
4-chloro-3-methylphenol	ND	0.050	0.044	88	0.05	0.047	94	7	16-129	33	
4-Chloroaniline	ND	0.050	0.050	100	0.05	0.051	102	2	9-128	25	
2-Chloronaphthalene	ND	0.050	0.042	84	0.05	0.045	90	7	65-135	25	
2-Chlorophenol	ND	0.050	0.041	82	0.05	0.044	88	7	16-116	40	

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

**Project Name: Lovington Gathering WTI**

Work Order #: 350679

Analyst: KAN

Lab Batch ID: 780919

Sample: 542398-1-BKS

Units: mg/L

Project ID: 2006-142

Date Analyzed: 11/05/2009

Matrix: Water

Date Prepared: 11/04/2009

Batch #: 1

SVOAs by SW-846 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												
4-Chlorophenyl Phenyl Ether		ND	0.050	0.046	92	0.05	0.048	96	4	65-135	25	
Chrysene		ND	0.050	0.046	92	0.05	0.048	96	4	65-135	25	
Dibenz(a,h)anthracene		ND	0.050	0.047	94	0.05	0.050	100	6	50-125	25	
Dibenzofuran		ND	0.050	0.045	90	0.05	0.048	96	6	52-125	25	
di-n-Butyl Phthalate		ND	0.050	0.042	84	0.05	0.045	90	7	49-135	50	
1,2-Dichlorobenzene		ND	0.050	0.042	84	0.05	0.044	88	5	65-135	25	
1,3-Dichlorobenzene		ND	0.050	0.042	84	0.05	0.044	88	5	65-135	25	
1,4-Dichlorobenzene		ND	0.050	0.041	82	0.05	0.044	88	7	19-121	28	
3,3-Dichlorobenzidine		ND	0.050	0.041	82	0.05	0.036	72	13	12-147	25	
2,4-Dichlorophenol		ND	0.050	0.045	90	0.05	0.048	96	6	65-135	25	
Diethyl Phthalate		ND	0.050	0.044	88	0.05	0.047	94	7	37-125	50	
Dimethyl Phthalate		ND	0.050	0.043	86	0.05	0.046	92	7	25-175	50	
2,4-Dimethylphenol		ND	0.050	0.039	78	0.05	0.041	82	5	32-119	25	
4,6-dinitro-2-methyl phenol		ND	0.050	0.044	88	0.05	0.047	94	7	2-181	25	
2,4-Dinitrophenol		ND	0.050	0.043	86	0.05	0.044	88	2	65-135	25	
2,4-Dinitrotoluene		ND	0.050	0.045	90	0.05	0.049	98	9	22-135	38	
2,6-Dinitrotoluene		ND	0.050	0.044	88	0.05	0.047	94	7	49-122	38	
di-n-Octyl Phthalate		ND	0.050	0.044	88	0.05	0.047	94	7	43-134	50	
Fluoranthene		ND	0.050	0.041	82	0.05	0.043	86	5	47-125	25	
Fluorene		ND	0.050	0.044	88	0.05	0.047	94	7	48-139	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



Project Name: Lovington Gathering WTI

Work Order #: 350679

Analyst: KAN

Lab Batch ID: 780919

Sample: 542398-1-BKS

Units: mg/L

Project ID: 2006-142

Date Analyzed: 11/05/2009

Matrix: Water

Date Prepared: 11/04/2009

Batch #: 1

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Hexachlorobenzene	ND	0.050	0.047	94	0.05	0.050	100	6	46-133	25	
Hexachlorobutadiene	ND	0.050	0.046	92	0.05	0.048	96	4	44-125	25	
Hexachlorocyclopentadiene	ND	0.050	0.044	88	0.05	0.046	92	4	41-125	25	
Hexachloroethane	ND	0.050	0.039	78	0.05	0.041	82	5	25-153	25	
Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.046	92	0.05	0.049	98	6	27-160	25	
Isophorone	ND	0.050	0.041	82	0.05	0.043	86	5	26-175	25	
2-Methylnaphthalene	ND	0.050	0.046	92	0.05	0.048	96	4	25-175	25	
2-methylphenol	ND	0.050	0.039	78	0.05	0.041	82	5	14-176	25	
3&4-Methylphenol	ND	0.100	0.065	65	0.1	0.068	68	5	14-176	25	
Naphthalene	ND	0.050	0.042	84	0.05	0.045	90	7	26-175	25	
2-Nitroaniline	ND	0.050	0.042	84	0.05	0.044	88	5	65-135	25	
3-Nitroaniline	ND	0.050	0.051	102	0.05	0.052	104	2	65-135	25	
4-Nitroaniline	ND	0.050	0.059	118	0.05	0.061	122	3	65-135	25	
Nitrobenzene	ND	0.050	0.040	80	0.05	0.043	86	7	65-135	25	
2-Nitrophenol	ND	0.050	0.044	88	0.05	0.047	94	7	65-135	25	
4-Nitrophenol	ND	0.050	0.025	50	0.05	0.028	56	11	10-80	50	
N-Nitrosodi-n-Propylamine	ND	0.050	0.036	72	0.05	0.036	72	0	22-134	38	
N-Nitrosodiphenylamine	ND	0.050	0.051	102	0.05	0.055	110	8	2-196	25	
Pentachlorophenol	ND	0.050	0.035	70	0.05	0.036	72	3	17-117	50	
Phenanthrene	ND	0.050	0.042	84	0.05	0.044	88	5	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



**Project Name: Lovington Gathering WTI**

**Work Order #: 350679**

**Analyst: KAN**

**Lab Batch ID: 780919**

**Sample: 542398-1-BKS**

**Units: mg/L**

**Project ID: 2006-142**

**Date Analyzed: 11/05/2009**

**Matrix: Water**

**Date Prepared: 11/04/2009**

**Batch #: 1**

SVOAs by SW-846 8270C											
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
	Phenol	ND	0.050	0.026	52	0.05	0.029	58	11	12-110	25
	Pyrene	ND	0.050	0.050	100	0.05	0.052	104	4	23-152	31
	Pyridine	ND	0.050	0.018	36	0.05	0.019	38	5	16-86	28
	1,2,4-Trichlorobenzene	ND	0.050	0.044	88	0.05	0.047	94	7	20-124	28
	2,4,5-Trichlorophenol	ND	0.050	0.043	86	0.05	0.045	90	5	65-135	25
	2,4,6-Trichlorophenol	ND	0.050	0.043	86	0.05	0.046	92	7	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: Lovington Gathering WTI



Work Order #: 350679

Lab Batch #: 780311

Date Analyzed: 11/04/2009

Date Prepared: 11/04/2009

Project ID: 2006-142

Analyst: LATCOR

QC- Sample ID: 350679-001 S

Batch #: 1

Matrix: Water

Reporting Units: mg/L

Inorganic Anions by EPA 300		MATRIX / MATRIX SPIKE RECOVERY STUDY				
Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R
Fluoride		9.27	20.0	33.4	121	90-110
Chloride		24.9	100	137	112	90-110
Sulfate		64.1	110	173	99	90-110
Nitrate as N		2.14	20.0	22.9	104	90-110
Ortho-Phosphate		ND	20.0	19.8	99	90-110

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$   
Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

BR/ Below Reporting Limit



# Form 3 - MS/MSD Recoveries

Project Name: Lovington Gathering WTI



Work Order #: 350679

Lab Batch ID: 780438

Date Analyzed: 11/05/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 350103-001 S

Batch #: 1 Matrix: Water

Date Prepared: 11/05/2009

Analyst: HAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
Inductively Coupled Plasma Atomic Emission Spectroscopy Mass Spectrometry	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Sample Spiked Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Aluminum	0.550	0.200	0.806	128	0.200	0.751	101	24	75-125	25	X
Arsenic	0.012	0.050	0.057	90	0.050	0.056	88	2	75-125	25	
Barium	0.037	0.050	0.087	100	0.050	0.086	98	2	75-125	25	
Boron	4.99	0.020	5.64	3250	0.020	5.41	2100	43	75-125	25	XF
Cadmium	ND	0.020	0.017	85	0.020	0.017	85	0	75-125	25	
Chromium	ND	0.050	0.047	94	0.050	0.046	92	2	75-125	25	
Cobalt	ND	0.050	0.045	90	0.050	0.044	88	2	75-125	25	
Copper	ND	0.050	0.045	90	0.050	0.043	86	5	75-125	25	
Iron	0.320	0.200	0.510	95	0.200	0.510	95	0	75-125	25	
Lead	0.002	0.050	0.051	98	0.050	0.049	94	4	75-125	25	
Manganese	0.029	0.050	0.078	98	0.050	0.075	92	6	75-125	25	
Molybdenum	0.026	0.050	0.075	98	0.050	0.074	96	2	75-125	25	
Nickel	ND	0.050	0.044	88	0.050	0.043	86	2	75-125	25	
Selenium	0.006	0.050	0.046	80	0.050	0.045	78	3	75-125	25	
Silver	ND	0.020	0.016	80	0.020	0.016	80	0	75-125	25	
Zinc	0.004	0.050	0.042	76	0.050	0.041	74	3	75-125	25	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



# Form 3 - MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 350679

Lab Batch ID: 780359

Date Analyzed: 11/05/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 350336-001 S

Batch #: 1 Matrix: Water

Date Prepared: 11/04/2009

Analyst: LATCOR

Reporting Units: mg/L												
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
Mercury by SW-846 7470A		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
Analytes												
Mercury		ND	0.0010	0.0007	70	0.0010	0.0007	70	0	75-125	20	X

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

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

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



# Form 3 - MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 350679

Lab Batch ID: 780540

Date Analyzed: 11/05/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 350679-001 S

Batch #: 1 Matrix: Water

Date Prepared: 11/05/2009

Analyst: JEA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
Reporting Units: mg/L	VOAs by SW-846 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Benzene	ND	0.050	0.045	90	0.050	0.045	90	0	66-142	21	
	Bromobenzene	ND	0.050	0.047	94	0.050	0.047	94	0	75-125	20	
	Bromochloromethane	ND	0.050	0.048	96	0.050	0.048	96	0	73-125	20	
	Bromodichloromethane	ND	0.050	0.044	88	0.050	0.044	88	0	75-125	20	
	Bromoform	ND	0.050	0.044	88	0.050	0.049	98	11	75-125	20	
	Methyl bromide	ND	0.050	0.047	94	0.050	0.049	98	4	70-130	20	
	MTBE	ND	0.050	0.049	98	0.050	0.048	96	2	65-135	20	
	n-Butylbenzene	ND	0.050	0.048	96	0.050	0.050	100	4	75-125	20	
	Sec-Butylbenzene	ND	0.050	0.048	96	0.050	0.050	100	4	75-125	20	
	tert-Butylbenzene	ND	0.050	0.049	98	0.050	0.051	102	4	75-125	20	
	Carbon Tetrachloride	ND	0.050	0.044	88	0.050	0.045	90	2	62-125	20	
	Chlorobenzene	ND	0.050	0.047	94	0.050	0.048	96	2	60-133	21	
	Chloroethane	ND	0.050	0.045	90	0.050	0.045	90	0	70-130	20	
	Chloroform	ND	0.050	0.047	94	0.050	0.048	96	2	74-125	20	
	Methyl Chloride	ND	0.050	0.042	84	0.050	0.043	86	2	70-130	20	
	2-Chlorotoluene	ND	0.050	0.050	100	0.050	0.050	100	0	73-125	20	
	4-Chlorotoluene	ND	0.050	0.048	96	0.050	0.049	98	2	74-125	20	
	p-Cymene (p-Isopropyltoluene)	ND	0.050	0.048	96	0.050	0.051	102	6	75-125	20	
	Dibromochloromethane	ND	0.050	0.046	92	0.050	0.046	92	0	73-125	20	
	1,2-Dibromo-3-Chloropropane	ND	0.050	0.052	104	0.050	0.051	102	2	59-125	28	
	Methylene bromide	ND	0.050	0.046	92	0.050	0.050	100	8	69-127	23	
	1,2-Dichlorobenzene	ND	0.050	0.049	98	0.050	0.050	100	2	75-125	20	
	1,3-Dichlorobenzene	ND	0.050	0.048	96	0.050	0.049	98	2	75-125	20	

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





# Form 3 - MSD Recoveries

Project Name: Lovington Gathering WTI



Work Order #: 350679

Lab Batch ID: 780540

Date Analyzed: 11/05/2009

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 350679-001 S

Date Prepared: 11/05/2009

Batch #: 1

Analyst: JEA

Matrix: Water

VOAs by SW-846 8260B		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	
1,4-Dichlorobenzene	ND	0.050	0.048	96	0.050	0.050	100	4	75-125	20	
Dichlorodifluoromethane	ND	0.050	0.039	78	0.050	0.041	82	5	70-130	23	
1,1-Dichloroethane	ND	0.050	0.042	84	0.050	0.043	86	2	72-125	20	
1,2-Dichloroethane	ND	0.050	0.048	96	0.050	0.048	96	0	68-127	20	
1,1-Dichloroethene	ND	0.050	0.042	84	0.050	0.042	84	0	59-172	22	
cis-1,2-Dichloroethylene	ND	0.050	0.048	96	0.050	0.048	96	0	75-125	20	
trans-1,2-dichloroethylene	ND	0.050	0.042	84	0.050	0.044	88	5	75-125	20	
1,2-Dichloropropane	ND	0.050	0.042	84	0.050	0.043	86	2	74-125	20	
1,3-Dichloropropane	ND	0.050	0.044	88	0.050	0.048	96	9	75-125	20	
2,2-Dichloropropane	ND	0.050	0.040	80	0.050	0.041	82	2	75-125	20	
1,1-Dichloropropene	ND	0.050	0.042	84	0.050	0.043	86	2	75-125	20	
cis-1,3-Dichloropropene	ND	0.050	0.044	88	0.050	0.045	90	2	74-125	20	
trans-1,3-dichloropropene	ND	0.050	0.046	92	0.050	0.047	94	2	66-125	20	
Ethylbenzene	ND	0.050	0.047	94	0.050	0.049	98	4	75-125	20	
Hexachlorobutadiene	ND	0.050	0.046	92	0.050	0.049	98	6	75-125	20	
isopropylbenzene	ND	0.050	0.048	96	0.050	0.049	98	2	75-125	20	
Methylene Chloride	ND	0.050	0.048	96	0.050	0.049	98	2	75-125	35	
Naphthalene	ND	0.050	0.046	92	0.050	0.050	100	8	75-125	20	
n-Propylbenzene	ND	0.050	0.049	98	0.050	0.051	102	4	75-125	20	
Styrene	ND	0.050	0.049	98	0.050	0.051	102	4	75-125	51	
1,1,1,2-Tetrachloroethane	ND	0.050	0.048	96	0.050	0.049	98	2	72-125	20	
1,1,1,2,2-Tetrachloroethane	ND	0.050	0.045	90	0.050	0.047	94	4	74-125	31	
Tetrachloroethylene	ND	0.050	0.045	90	0.050	0.046	92	2	71-125	20	

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



# Form 3 - MSD Recoveries

Project Name: Lovington Gathering WTI



Work Order #: 350679

Lab Batch ID: 780540

Date Analyzed: 11/05/2009

Reporting Units: mg/L

Project ID: 2006-142

QC-Sample ID: 350679-001 S

Batch #: 1 Matrix: Water

Date Prepared: 11/05/2009

Analyst: JEA

VOAs by SW-846 8260B		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
Analytes												
Toluene		ND	0.050	0.046	92	0.050	0.048	96	4	59-139	21	
1,2,3-Trichlorobenzene		ND	0.050	0.047	94	0.050	0.050	100	6	75-137	20	
1,2,4-Trichlorobenzene		ND	0.050	0.046	92	0.050	0.050	100	8	75-135	20	
1,1,1-Trichloroethane		ND	0.050	0.041	82	0.050	0.042	84	2	75-125	20	
1,1,2-Trichloroethane		ND	0.050	0.045	90	0.050	0.046	92	2	75-127	20	
Trichloroethylene		ND	0.050	0.045	90	0.050	0.044	88	2	62-137	24	
Trichlorofluoromethane		ND	0.050	0.041	82	0.050	0.042	84	2	67-125	20	
1,2,3-Trichloropropane		ND	0.050	0.046	92	0.050	0.046	92	0	75-125	20	
1,2,4-Trimethylbenzene		ND	0.050	0.049	98	0.050	0.051	102	4	75-125	20	
1,3,5-Trimethylbenzene		ND	0.050	0.049	98	0.050	0.052	104	6	70-125	20	
o-Xylene		ND	0.050	0.046	92	0.050	0.049	98	6	75-125	20	
m,p-Xylene		ND	0.100	0.095	95	0.100	0.097	97	2	75-125	20	
Vinyl Chloride		ND	0.050	0.041	82	0.050	0.043	86	5	75-125	20	

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: Lovington Gathering WTI

Work Order #: 350679

Lab Batch #: 780340

Project ID: 2006-142

Date Analyzed: 11/03/2009

Date Prepared: 11/03/2009

Analyst: WRU

QC- Sample ID: 350089-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Alkalinity by SM2320B  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, phenolphthalein	ND	ND	NC	20	
Alkalinity, Total (as CaCO <sub>3</sub> )	94.0	96.0	2	20	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	ND	ND	NC	20	
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	ND	ND	NC	20	

Lab Batch #: 780311

Date Analyzed: 11/04/2009

Date Prepared: 11/04/2009

Analyst: LATCOR

QC- Sample ID: 350679-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Determination of Inorganic Anions In Water By Ion Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Fluoride	9.27	9.54	3	20	
Chloride	24.9	23.8	5	20	
Sulfate	64.1	65.8	3	20	
Nitrate as N	2.14	1.12	63	20	F
Ortho-Phosphate	ND	ND	NC	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



## Sample Duplicate Recovery



Project Name: Lovington Gathering WTI

Work Order #: 350679

Lab Batch #: 780438

Project ID: 2006-142

Date Analyzed: 11/05/2009

Date Prepared: 11/05/2009

Analyst: HAT

QC- Sample ID: 350103-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Inductively Coupled Plasma Atomic Emission Spectroscopy Mass Spectrometry Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Aluminum	0.550	0.669	20	20	
Arsenic	0.012	0.014	15	20	
Barium	0.037	0.039	5	20	
Boron	4.99	5.58	11	20	
Cadmium	ND	ND	NC	20	
Chromium	ND	ND	NC	20	
Cobalt	ND	ND	NC	20	
Copper	ND	ND	NC	20	
Iron	0.320	0.400	22	20	F
Lead	0.002	ND	NC	20	
Manganese	0.029	0.032	10	20	
Molybdenum	0.026	0.027	4	20	
Nickel	ND	ND	NC	20	
Selenium	0.006	0.006	0	20	
Silver	ND	ND	NC	20	
Zinc	0.004	0.004	0	20	

Lab Batch #: 780428

Date Analyzed: 11/05/2009

Date Prepared: 11/05/2009

Analyst: LATCOR

QC- Sample ID: 350679-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Metals per ICP by SW846 6010B Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Calcium	76.5	73.5	4	25	
Magnesium	13.6	12.7	7	25	
Potassium	ND	ND	NC	25	
Sodium	33.3	29.8	11	25	

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

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

BRL - Below Reporting Limit



NMOCD - Analytical Parameters for Initial Groundwater Sampling (3-12-08)

Field Parameters

specific conductance  
pH  
temperature  
depth to water

General Chemistry

Calcium  
Magnesium  
Potassium  
Sodium  
Chloride  
Sulfate  
Bicarbonate Alkalinity  
Carbonate Alkalinity  
Nitrate  
Phosphate  
Fluoride

RCRA Metals

Arsenic  
Barium  
Cadmium  
Chromium  
Lead  
Mercury  
Selenium  
Silver

Additional WOCC Metals

Copper  
Iron  
Manganese  
Zinc  
Aluminum  
Boron  
Cobalt  
Molybdenum  
Nickel

All compounds listed in U.S. EPA SW-846 Methods: 8260 (VOCs) & 8270 (SVOCs)

# Environmental Lab of Texas

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

Client: Basin Env. / Plains

Date/ Time: 11-3-09 10:22

Lab ID #: 350079

Initials: AL

### Sample Receipt Checklist

Client Initials

#1	Temperature of container/ cooler?	<u>Yes</u>	No	<u>1.1</u> °C	
#2	Shipping container in good condition?	<u>Yes</u>	No		
#3	Custody Seals intact on shipping container/ cooler?	<u>Yes</u>	No	<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>	No	Not Applicable	
#20	VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable	

### Variance Documentation

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

Regarding: 16 metals, SVOC subbed to Xenco-Houston, VOC subbed to Xenco-Dallas

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 356497**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**29-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)





29-DEC-09

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

Reference: XENCO Report No: **356497**  
**Lovington Gathering WTI**  
Project Address: Lea 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 356497. 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. 356497 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 356497



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	Dec-18-09 10:45		356497-001
MW-1	W	Dec-18-09 11:30		356497-002
MW-4	W	Dec-18-09 12:15		356497-003
MW-6	W	Dec-18-09 13:00		356497-004
MW-3	W	Dec-18-09 14:30		356497-005
MW-7	W	Dec-18-09 15:15		356497-006
MW-8	W	Dec-18-09 16:00		356497-007
MW-2	W	Dec-18-09 16:45		356497-008
MW-9	W	Dec-18-09 17:30		356497-009



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Lovington Gathering WTI*

*Project ID: 2006-142*

*Work Order Number: 356497*

*Report Date: 29-DEC-09*

*Date Received: 12/21/2009*

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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-787254 SVOA PAHs List by SW-846 8270C

None

Batch: LBA-787355 BTEX by EPA 8021

SW8021BM

Batch 787355, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 356497-007.



**Certificate of Analysis Summary 356497**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Mon Dec-21-09 05:13 pm  
Report Date: 29-DEC-09

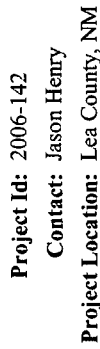
Project Manager: Brent Barron, II

Analysis Requested		Lab Id:	356497-001	356497-002	356497-003	356497-004	356497-005	356497-006
		Field Id:	MW-5	MW-1	MW-4	MW-6	MW-3	MW-7
		Depth:						
		Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
		Sampled:	Dec-18-09 10:45	Dec-18-09 11:30	Dec-18-09 12:15	Dec-18-09 13:00	Dec-18-09 14:30	Dec-18-09 15:15
BTEX by EPA 8021		Extracted:	Dec-21-09 17:30	Dec-21-09 17:30	Dec-21-09 17:30	Dec-21-09 17:30	Dec-21-09 17:30	Dec-21-09 17:30
		Analyzed:	Dec-24-09 12:57	Dec-24-09 13:20	Dec-24-09 13:42	Dec-24-09 14:05	Dec-24-09 15:14	Dec-24-09 15:37
		Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
			ND 0.0010	ND 0.0010	ND 0.0010	0.0130 0.0010	ND 0.0010	ND 0.0010
Benzene			ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
Toluene			ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Ethylbenzene			ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
m,p-Xylenes			ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
o-Xylene			ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Xylenes, Total			ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total BTEX			ND 0.0010	ND 0.0010	ND 0.0010	0.0130 0.0010	ND 0.0010	ND 0.0010

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




**Date Received in Lab:** Mon Dec-21-09 05:13 pm

**Report Date:** 29-DEC-09

**Project Manager:** Brent Barron, II

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Brent Barron, II  
Odessa Laboratory Manager



**Certificate of Analysis Summary 356497**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**




**Project Id:** 2006-142  
**Contact:** Jason Henry  
**Project Location:** Lea County, NM

**Date Received in Lab:** Mon Dec-21-09 05:13 pm  
**Report Date:** 29-DEC-09  
**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	356497-007	356497-008	356497-009	
	<i>Field Id:</i>	MW-8	MW-2	MW-9	
	<i>Depth:</i>				
	<i>Matrix:</i>	WATER	WATER	WATER	
	<i>Sampled:</i>	Dec-18-09 16:00	Dec-18-09 16:45	Dec-18-09 17:30	
<b>BTEX by EPA 8021</b>	<i>Extracted:</i>	Dec-21-09 17:30	Dec-21-09 17:30	Dec-21-09 17:30	
	<i>Analyzed:</i>	Dec-24-09 15:59	Dec-24-09 16:22	Dec-24-09 16:45	
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	
	Benzene	ND 0.0010	0.0129 0.0010	ND 0.0010	
	Toluene	ND 0.0020	ND 0.0020	ND 0.0020	
Ethylbenzene		ND 0.0010	ND 0.0010	ND 0.0010	
	m,p-Xylenes	ND 0.0020	0.0095 0.0020	ND 0.0020	
	o-Xylene	ND 0.0010	ND 0.0010	ND 0.0010	
Xylenes, Total		ND 0.0010	0.0095 0.0010	ND 0.0010	
Total BTEX		ND 0.0010	0.0224 0.0010	ND 0.0010	

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**Brent Barron, II**  
Odessa Laboratory Manager



**Certificate of Analysis Summary 356497**  
**PLAINS ALL AMERICAN EH&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Mon Dec-21-09 05:13 pm  
Report Date: 29-DEC-09  
Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	356497-007	356497-008	356497-009	
	<i>Field Id:</i>	MW-8	MW-2	MW-9	
	<i>Depth:</i>				
	<i>Matrix:</i>	WATER	WATER	WATER	
	<i>Sampled:</i>	Dec-18-09 16:00	Dec-18-09 16:45	Dec-18-09 17:30	
	<i>Extracted:</i>	Dec-23-09 11:54	Dec-23-09 11:57	Dec-23-09 12:00	
SVOA PAHs List SUB: T104704215-08B-TX	<i>Analyzed:</i>	Dec-24-09 19:33	Dec-24-09 20:11	Dec-24-09 20:48	
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	
	Acenaphthene	ND 0.005	ND 0.005	ND 0.005	
	Acenaphthylene	ND 0.005	ND 0.005	ND 0.005	
	Anthracene	ND 0.005	ND 0.005	ND 0.005	
	Benzo(a)anthracene	ND 0.005	ND 0.005	ND 0.005	
	Benzo(a)pyrene	ND 0.005	ND 0.005	ND 0.005	
	Benzo(b)fluoranthene	ND 0.005	ND 0.005	ND 0.005	
	Benzo(k)fluoranthene	ND 0.005	ND 0.005	ND 0.005	
	Benzo(g,h,i)perylene	ND 0.005	ND 0.005	ND 0.005	
	Chrysene	ND 0.005	ND 0.005	ND 0.005	
	Dibenz(a,h)anthracene	ND 0.005	ND 0.005	ND 0.005	
	Fluoranthene	ND 0.005	ND 0.005	ND 0.005	
	Fluorene	ND 0.005	ND 0.005	ND 0.005	
	Indeno(1,2,3-c,d)Pyrene	ND 0.005	ND 0.005	ND 0.005	
	1-Methylnaphthalene	ND 0.005	ND 0.005	ND 0.005	
	2-Methylnaphthalene	ND 0.005	ND 0.005	ND 0.005	
	Naphthalene	ND 0.005	ND 0.005	ND 0.005	
	Phenanthrene	ND 0.005	ND 0.005	ND 0.005	
	Pyrene	ND 0.005	ND 0.005	ND 0.005	

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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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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: Lovington Gathering WTI

Work Orders : 356497,

Project ID: 2006-142

Lab Batch #: 787355

Sample: 546427-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 08:46

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 787355

Sample: 546427-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 09:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 787355

Sample: 546427-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 10:17

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 787355

Sample: 356497-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 12:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 787355

Sample: 356497-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 13:20

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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: Lovington Gathering WTI

Work Orders : 356497,

Project ID: 2006-142

Lab Batch #: 787355

Sample: 356497-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 13:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 787355

Sample: 356497-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 14:05

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 787355

Sample: 356497-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 15:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 787355

Sample: 356497-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 15:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 787355

Sample: 356497-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 15:59

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0208	0.0300	69	80-120	*
4-Bromofluorobenzene	0.0256	0.0300	85	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: Lovington Gathering WTI

Work Orders : 356497,

Lab Batch #: 787355

Sample: 356497-008 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 16:22

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 787355

Sample: 356497-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 16:45

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 787355

Sample: 356194-011 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 19:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 787355

Sample: 356194-011 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 19:24

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	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: Lovington Gathering WTI

Work Orders : 356497,

Lab Batch #: 787254

Sample: 546283-1-BLK / BLK

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 13:52

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.036	0.050	72	43-116	
2-Fluorophenol	0.024	0.050	48	21-100	
Nitrobenzene-d5	0.037	0.050	74	35-114	
Phenol-d6	0.015	0.050	30	10-94	
Terphenyl-D14	0.043	0.050	86	33-141	
2,4,6-Tribromophenol	0.037	0.050	74	10-123	

Lab Batch #: 787254

Sample: 546283-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 14:30

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.025	0.050	50	43-116	
2-Fluorophenol	0.024	0.050	48	21-100	
Nitrobenzene-d5	0.024	0.050	48	35-114	
Phenol-d6	0.013	0.050	26	10-94	
Terphenyl-D14	0.025	0.050	50	33-141	
2,4,6-Tribromophenol	0.022	0.050	44	10-123	

Lab Batch #: 787254

Sample: 546283-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 15:08

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.024	0.050	48	21-100	
Nitrobenzene-d5	0.038	0.050	76	35-114	
Phenol-d6	0.018	0.050	36	10-94	
Terphenyl-D14	0.041	0.050	82	33-141	
2,4,6-Tribromophenol	0.038	0.050	76	10-123	

\* 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: Lovington Gathering WTI

Work Orders : 356497,

Lab Batch #: 787254

Sample: 356497-001 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 15:46

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.022	0.050	44	21-100	
Nitrobenzene-d5	0.039	0.050	78	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.042	0.050	84	33-141	
2,4,6-Tribromophenol	0.040	0.050	80	10-123	

Lab Batch #: 787254

Sample: 356497-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 16:23

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.036	0.050	72	43-116	
2-Fluorophenol	0.021	0.050	42	21-100	
Nitrobenzene-d5	0.038	0.050	76	35-114	
Phenol-d6	0.010	0.050	20	10-94	
Terphenyl-D14	0.042	0.050	84	33-141	
2,4,6-Tribromophenol	0.040	0.050	80	10-123	

Lab Batch #: 787254

Sample: 356497-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 17:01

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.037	0.050	74	43-116	
2-Fluorophenol	0.021	0.050	42	21-100	
Nitrobenzene-d5	0.038	0.050	76	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.044	0.050	88	33-141	
2,4,6-Tribromophenol	0.039	0.050	78	10-123	

\* 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: Lovington Gathering WTI

Work Orders : 356497,

Lab Batch #: 787254

Sample: 356497-004 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 17:40

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.041	0.050	82	43-116	
2-Fluorophenol	0.024	0.050	48	21-100	
Nitrobenzenc-d5	0.041	0.050	82	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.048	0.050	96	33-141	
2,4,6-Tribromophenol	0.047	0.050	94	10-123	

Lab Batch #: 787254

Sample: 356497-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 18:17

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.035	0.050	70	43-116	
2-Fluorophenol	0.021	0.050	42	21-100	
Nitrobenzenc-d5	0.036	0.050	72	35-114	
Phenol-d6	0.012	0.050	24	10-94	
Terphenyl-D14	0.041	0.050	82	33-141	
2,4,6-Tribromophenol	0.037	0.050	74	10-123	

Lab Batch #: 787254

Sample: 356497-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 18:56

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.035	0.050	70	43-116	
2-Fluorophenol	0.021	0.050	42	21-100	
Nitrobenzenc-d5	0.035	0.050	70	35-114	
Phenol-d6	0.012	0.050	24	10-94	
Terphenyl-D14	0.043	0.050	86	33-141	
2,4,6-Tribromophenol	0.043	0.050	86	10-123	

\* 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: Lovington Gathering WTI

Work Orders : 356497,

Lab Batch #: 787254

Sample: 356497-007 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 19:33

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.033	0.050	66	43-116	
2-Fluorophenol	0.021	0.050	42	21-100	
Nitrobenzene-d5	0.035	0.050	70	35-114	
Phenol-d6	0.011	0.050	22	10-94	
Terphenyl-D14	0.038	0.050	76	33-141	
2,4,6-Tribromophenol	0.041	0.050	82	10-123	

Lab Batch #: 787254

Sample: 356497-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 20:11

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.038	0.050	76	43-116	
2-Fluorophenol	0.022	0.050	44	21-100	
Nitrobenzene-d5	0.040	0.050	80	35-114	
Phenol-d6	0.013	0.050	26	10-94	
Terphenyl-D14	0.044	0.050	88	33-141	
2,4,6-Tribromophenol	0.050	0.050	100	10-123	

Lab Batch #: 787254

Sample: 356497-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12/24/09 20:48

### SURROGATE RECOVERY STUDY

SVOA PAHs List Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.047	0.050	94	43-116	
2-Fluorophenol	0.026	0.050	52	21-100	
Nitrobenzene-d5	0.049	0.050	98	35-114	
Phenol-d6	0.013	0.050	26	10-94	
Terphenyl-D14	0.057	0.050	114	33-141	
2,4,6-Tribromophenol	0.055	0.050	110	10-123	

\* 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: Lovington Gathering WTI**

**Work Order #: 356497**

**Analyst: ASA**

**Lab Batch ID: 787355**

**Sample: 546427-1-BKS**

**Date Prepared: 12/21/2009**

**Batch #: 1**

**Project ID: 2006-142**

**Date Analyzed: 12/24/2009**

**Matrix: Water**

**Units: mg/L**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/L  BTEX by EPA 8021  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
	ND	0.1000	0.1105	111	0.1	0.1144	114	3	70-125	25	
	ND	0.1000	0.1095	110	0.1	0.1140	114	4	70-125	25	
	ND	0.1000	0.1076	108	0.1	0.1126	113	5	71-129	25	
	ND	0.2000	0.2202	110	0.2	0.2302	115	4	70-131	25	
	ND	0.1000	0.1144	114	0.1	0.1188	119	4	71-133	25	
	ND	0.1000	0.1144	114	0.1	0.1188	119	4	71-133	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





**Project Name: Lovington Gathering WTI**

Work Order #: 356497

Analyst: KAN

Lab Batch ID: 787254

Sample: 546283-1-BKS

Date Prepared: 12/23/2009

Batch #: 1

Project ID: 2006-142

Date Analyzed: 12/24/2009

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/L	SVOA PAHs List	Analytes	Blank	Spike	Blank	Blank	Spike	Blank	Blk. Spk	RPD	Control	Flag
			Sample Result [A]	Added [B]	Spike Result [C]	Spike %R [D]	Added [E]	Spike Duplicate Result [F]	Dup. %R [G]		Limits %R	
		Acenaphthene	ND	0.050	0.038	76	0.05	0.040	80	5	27-132	31
		Acenaphthylene	ND	0.050	0.038	76	0.05	0.040	80	5	46-108	25
		Anthracene	ND	0.050	0.039	78	0.05	0.041	82	5	47-145	25
		Benzo(a)anthracene	ND	0.050	0.040	80	0.05	0.042	84	5	33-143	25
		Benzo(a)pyrene	ND	0.050	0.041	82	0.05	0.043	86	5	65-135	25
		Benzo(b)fluoranthene	ND	0.050	0.042	84	0.05	0.046	92	9	24-159	25
		Benzo(k)fluoranthene	ND	0.050	0.042	84	0.05	0.044	88	5	25-125	25
		Benzo(g,h,i)perylene	ND	0.050	0.040	80	0.05	0.043	86	7	65-135	25
		Chrysene	ND	0.050	0.037	74	0.05	0.039	78	5	65-135	25
		Dibenz(a,h)anthracene	ND	0.050	0.042	84	0.05	0.045	90	7	50-125	25
		Fluoranthene	ND	0.050	0.040	80	0.05	0.043	86	7	47-125	25
		Fluorene	ND	0.050	0.040	80	0.05	0.042	84	5	48-139	25
		Indeno(1,2,3-c,d)Pyrene	ND	0.050	0.042	84	0.05	0.045	90	7	27-160	25
		Naphthalene	ND	0.050	0.036	72	0.05	0.039	78	8	26-175	25
		Phenanthrene	ND	0.050	0.039	78	0.05	0.041	82	5	65-135	25
		Pyrene	ND	0.050	0.040	80	0.05	0.042	84	5	23-152	31

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 - MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order # : 356497

Project ID: 2006-142

Lab Batch ID: 787355

QC- Sample ID: 356194-011 S

Batch #: 1 Matrix: Water

Date Analyzed: 12/24/2009

Date Prepared: 12/21/2009

Analyst: ASA

Reporting Units: mg/L

Reporting Units: mg/L											
BTEX by EPA 8021  Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Benzene	ND	0.1000	0.0886	89	0.1000	0.0882	88	0	70-125	25
	Toluene	ND	0.1000	0.0866	87	0.1000	0.0853	85	2	70-125	25
	Ethylbenzene	ND	0.1000	0.0858	86	0.1000	0.0825	83	4	71-129	25
	m,p-Xylenes	ND	0.2000	0.1738	87	0.2000	0.1545	77	12	70-131	25
	o-Xylene	ND	0.1000	0.0925	93	0.1000	0.0862	86	7	71-133	25

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



# Environmental Lab of Texas

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

Client: Plains / Basin Env.

Date/ Time: 12-21-09 C 1713

Lab ID #: 356497

Initials: JMF

### Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	<u>Yes</u>	No	3.6 °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? /labels	<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>	No	Not Applicable Xerox-Houston -PAH
#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 364844**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**15-MAR-10**



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

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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-TX)

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

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

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295)



15-MAR-10

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

Reference: XENCO Report No: **364844**  
**Lovington Gathering WTI**  
Project Address: Lea 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 364844. 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. 364844 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 364844



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-10	W	Mar-04-10 08:30		364844-001
MW-5	W	Mar-04-10 09:15		364844-002
MW-4	W	Mar-04-10 10:00		364844-003
MW-1	W	Mar-04-10 10:45		364844-004
MW-6	W	Mar-04-10 11:30		364844-005
MW-3	W	Mar-04-10 12:15		364844-006
MW-7	W	Mar-04-10 13:00		364844-007
MW-8	W	Mar-04-10 13:45		364844-008
MW-2	W	Mar-04-10 14:30		364844-009
MW-9	W	Mar-04-10 15:30		364844-010



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Lovington Gathering WTI*



*Project ID: 2006-142*

*Work Order Number: 364844*

*Report Date: 15-MAR-10*

*Date Received: 03/09/2010*

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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-798019 BTEX by EPA 8021

SW8021BM

Batch 798019, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 364819-001 S,364819-001 SD,364844-003,364844-004,364844-005,364844-007,364844-009,364844-010,364844-002,364844-001,364844-006.





**Certificate of Analysis Summary 364844**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Tue Mar-09-10 08:25 am  
Report Date: 15-MAR-10  
Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	364844-001	364844-002	364844-003	364844-004	364844-005	364844-006
	<i>Field Id:</i>	MW-10	MW-5	MW-4	MW-1	MW-6	MW-3
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER	WATER	WATER	WATER
	<i>Sampled:</i>	Mar-04-10 08:30	Mar-04-10 09:15	Mar-04-10 10:00	Mar-04-10 10:45	Mar-04-10 11:30	Mar-04-10 12:15
<b>BTEX by EPA 8021</b>	<i>Extracted:</i>	Mar-10-10 08:15	Mar-10-10 08:15	Mar-10-10 08:15	Mar-10-10 08:15	Mar-10-10 08:15	Mar-10-10 08:15
	<i>Analyzed:</i>	Mar-11-10 13:46	Mar-11-10 15:08	Mar-11-10 15:29	Mar-11-10 15:50	Mar-11-10 16:11	Mar-11-10 16:31
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
	Benzene	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.0063 0.0010	0.0011 0.0010
	Toluene	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
	Ethylbenzene	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
	m,p-Xylenes	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
	o-Xylene	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
	Xylenes, Total	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
	Total BTEX	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.0063 0.0010	0.0011 0.0010

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

**Certificate of Analysis Summary 364844**  
**PLAINS ALL AMERICAN E&S, Midland, TX**  
**Project Name: Lovington Gathering WTI**



Project Id: 2006-142

**Contact:** Jason Henry

**Project Location:** Lea County, NM

**Date Received in Lab:** Tue Mar-09-10 08:25 am


Report Date: 15-MAR-10

**Project Manager:** Brent Barron, II

Analysis Requested		Lab Id:	364844-007	364844-008	364844-009	364844-010
		Field Id:	MW-7	MW-8	MW-2	MW-9
		Depth:				
		Matrix:	WATER	WATER	WATER	WATER
		Sampled:	Mar-04-10 13:00	Mar-04-10 13:45	Mar-04-10 14:30	Mar-04-10 15:30
BTEX by EPA 8021	Extracted:		Mar-10-10 08:15	Mar-10-10 08:15	Mar-10-10 08:15	Mar-10-10 08:15
	Analyzed:		Mar-11-10 16:52	Mar-11-10 17:13	Mar-11-10 17:34	Mar-11-10 17:54
	Units/RL:		mg/L RL	mg/L RL	mg/L RL	mg/L RL
Benzene			ND 0.0010	ND 0.0010	0.0026 0.0010	0.0192 0.0010
Toluene			ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
Ethylbenzene			ND 0.0010	0.0011 0.0010	ND 0.0010	ND 0.0010
m,p-Xylenes			ND 0.0020	ND 0.0020	ND 0.0020	0.0027 0.0020
o-Xylene			ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Xylenes, Total			ND 0.0010	ND 0.0010	ND 0.0010	0.0027 0.0010
Total BTEX			ND 0.0010	0.0011 0.0010	0.0026 0.0010	0.0219 0.0010

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

- 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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(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: Lovington Gathering WTI

Work Orders : 364844,

Lab Batch #: 798019

Sample: 552928-1-BKS / BKS

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 08:55

### 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	0.0280	0.0300	93	80-120	

Lab Batch #: 798019

Sample: 552928-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 09:15

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 798019

Sample: 552928-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 10:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 798019

Sample: 364844-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 13:46

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0210	0.0300	70	80-120	*

Lab Batch #: 798019

Sample: 364844-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0187	0.0300	62	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: Lovington Gathering WTI

Work Orders : 364844,

Lab Batch #: 798019

Sample: 364844-003 / SMP

Project ID: 2006-142

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 15:29

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0218	0.0300	73	80-120	*

Lab Batch #: 798019

Sample: 364844-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 15:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0188	0.0300	63	80-120	*

Lab Batch #: 798019

Sample: 364844-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 16:11

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0205	0.0300	68	80-120	*

Lab Batch #: 798019

Sample: 364844-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 16:31

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0191	0.0300	64	80-120	*

Lab Batch #: 798019

Sample: 364844-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 16:52

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0210	0.0300	70	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: Lovington Gathering WTI

Work Orders : 364844,

Project ID: 2006-142

Lab Batch #: 798019

Sample: 364844-008 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 17:13

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

Lab Batch #: 798019

Sample: 364844-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 17:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0179	0.0300	60	80-120	*

Lab Batch #: 798019

Sample: 364844-010 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 17:54

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0204	0.0300	68	80-120	*

Lab Batch #: 798019

Sample: 364819-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 18:36

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0202	0.0300	67	80-120	*

Lab Batch #: 798019

Sample: 364819-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03/11/10 18:56

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0211	0.0300	70	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.



**Project Name: Lovington Gathering WTI**

Work Order #: 364844

Analyst: ASA

Lab Batch ID: 798019

Sample: 552928-1-BKS

Date Prepared: 03/10/2010

Batch #: 1

Project ID: 2006-142

Date Analyzed: 03/11/2010

Matrix: Water

Units: mg/L

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/L											
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. Result [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Benzene	ND	0.1000	0.0924	92	0.1	0.0880	88	5	70-125	25
	Toluene	ND	0.1000	0.0920	92	0.1	0.0860	86	7	70-125	25
	Ethylbenzene	ND	0.1000	0.0924	92	0.1	0.0883	88	5	71-129	25
	m,p-Xylenes	ND	0.2000	0.1846	92	0.2	0.1769	88	4	70-131	25
o-Xylene	ND	0.1000	0.0905	91	0.1	0.0849	85	6	71-133	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 - MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 364844

Project ID: 2006-142

Lab Batch ID: 798019

QC- Sample ID: 364819-001 S

Batch #: 1 Matrix: Water

Date Analyzed: 03/11/2010

Date Prepared: 03/10/2010

Analyst: ASA

Reporting Units: mg/L

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.2000	0.1476	74	0.2000	0.1640	82	11	70-125	25	
Toluene	ND	0.2000	0.1455	73	0.2000	0.1642	82	12	70-125	25	
Ethylbenzene	ND	0.2000	0.1477	74	0.2000	0.1709	85	15	71-129	25	
m,p-Xylenes	ND	0.4000	0.2933	73	0.4000	0.3413	85	15	70-131	25	
o-Xylene	ND	0.2000	0.1442	72	0.2000	0.1660	83	14	71-133	25	

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





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

Client: Basin Environmental  
Date/ Time: 3/9/10 8:25  
Lab ID #: 364844  
Initials: AS

**Sample Receipt Checklist**

Client Initials

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

**Variance Documentation**

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

Regarding: #4) labels as seals

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 374687**  
**for**  
**PLAINS ALL AMERICAN EH&S**

**Project Manager: Jason Henry**

**Lovington Gathering WTI**

**2006-142**

**03-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

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

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (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-TX)

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

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

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295)



03-JUN-10

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

Reference: XENCO Report No: **374687**  
**Lovington Gathering WTI**  
Project Address: Lea 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 374687. 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. 374687 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.*

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## Sample Cross Reference 374687



PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Gathering WTI

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	May-25-10 09:00		374687-001
MW-1	W	May-25-10 09:45		374687-002
MW-4	W	May-25-10 10:45		374687-003
MW-10	W	May-25-10 11:30		374687-004
MW-7	W	May-25-10 12:45		374687-005
MW-8	W	May-25-10 13:00		374687-006
MW-3	W	May-25-10 14:15		374687-007
MW-2	W	May-25-10 15:00		374687-008
MW-6	W	May-25-10 15:30		374687-009
MW-9	W	May-25-10 16:15		374687-010



## CASE NARRATIVE

*Client Name: PLAINS ALL AMERICAN EH&S*

*Project Name: Lovington Gathering WTI*



*Project ID: 2006-142*

*Work Order Number: 374687*

*Report Date: 03-JUN-10*

*Date Received: 05/27/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

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

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-809029 BTEX by EPA 8021*

*SW8021BM*

*Batch 809029, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis*

*Samples affected are: 374687-006,374687-008,374687-007.*



# Certificate of Analysis Summary 374687

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

Project Name: Lovington Gathering WTI

Project Id: 2006-142

Contact: Jason Henry

Project Location: Lea County, NM



Date Received in Lab: Thu May-27-10 01:40 pm

Report Date: 03-JUN-10

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	374687-001	374687-002	374687-003	374687-004	374687-005	374687-006
	Field Id: Depth: Matrix: Sampled:	MW-5 WATER May-25-10 09:00	MW-1 WATER May-25-10 09:45	MW-4 WATER May-25-10 10:45	MW-10 WATER May-25-10 11:30	MW-7 WATER May-25-10 12:45	MW-8 WATER May-25-10 13:00
BTEX by EPA 8021	Extracted:	Jun-02-10 15:45	Jun-02-10 15:45	Jun-02-10 15:45	Jun-02-10 15:45	Jun-02-10 15:45	Jun-02-10 15:45
	Analyzed:	Jun-02-10 19:54	Jun-02-10 20:17	Jun-02-10 20:39	Jun-02-10 21:01	Jun-02-10 21:24	Jun-02-10 21:46
	Units/RL:	mg/L RL 0.0014 0.0010	mg/L RL ND 0.0010	mg/L RL ND 0.0010	mg/L RL ND 0.0010	mg/L RL ND 0.0010	mg/L RL 0.0012 0.0010
	Benzene	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
	Toluene	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Ethylbenzene		ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
m,p-Xylenes		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
o-Xylene		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Xylenes, Total		ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total BTEX		0.0014 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010	0.0022 0.0010

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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brent Barron, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 374687

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



Project Name: Lovington Gathering WTI

Project Id: 2006-142  
Contact: Jason Henry  
Project Location: Lea County, NM

Date Received in Lab: Thu May-27-10 01:40 pm  
Report Date: 03-JUN-10  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	374687-007	374687-008	374687-009	374687-010
	Field Id:	MW-3	MW-2	MW-6	MW-9
	Depth:				
	Matrix:	WATER	WATER	WATER	WATER
	Sampled:	May-25-10 14:15	May-25-10 15:00	May-25-10 15:30	May-25-10 16:15
BTEX by EPA 8021	Extracted:	Jun-02-10 15:45	Jun-02-10 15:45	Jun-02-10 15:45	Jun-02-10 15:45
	Analyzed:	Jun-02-10 22:55	Jun-02-10 23:17	Jun-02-10 23:40	Jun-03-10 00:02
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL
	Benzene	0.0109 0.0010	0.0023 0.0010	0.0059 0.0010	0.0421 0.0010
	Toluene	0.0033 0.0020	ND 0.0020	ND 0.0020	ND 0.0020
m,p-Xylenes	Ethylbenzene	ND 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
	m,p-Xylenes	0.0048 0.0020	ND 0.0020	ND 0.0020	0.0063 0.0020
	o-Xylene	0.0027 0.0010	ND 0.0010	ND 0.0010	ND 0.0010
Total BTEX	Xylenes, Total	0.0075 0.0010	ND 0.0010	ND 0.0010	0.0063 0.0010
	Total BTEX	0.0217 0.0010	0.0023 0.0010	0.0059 0.0010	0.0484 0.0010

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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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 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: Lovington Gathering WTI

Work Orders : 374687,

Project ID: 2006-142

Lab Batch #: 809029

Sample: 564756-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 16:31

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 809029

Sample: 564756-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 16:54

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 809029

Sample: 564756-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 18:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 809029

Sample: 374687-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 19:54

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 809029

Sample: 374687-002 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 20:17

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	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: Lovington Gathering WTI

Work Orders : 374687,  
Lab Batch #: 809029

Sample: 374687-003 / SMP

Project ID: 2006-142  
Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 20:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 809029

Sample: 374687-004 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 21:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 809029

Sample: 374687-005 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 21:24

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 809029

Sample: 374687-006 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 21:46

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0225	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 809029

Sample: 374687-007 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 22:55

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0234	0.0300	78	80-120	*
4-Bromofluorobenzene	0.0268	0.0300	89	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: Lovington Gathering WTI

Work Orders : 374687,  
Lab Batch #: 809029

Sample: 374687-008 / SMP

Project ID: 2006-142  
Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 23:17

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0231	0.0300	77	80-120	*
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 809029

Sample: 374687-009 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/02/10 23:40

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 809029

Sample: 374687-010 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/03/10 00:02

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 809029

Sample: 374687-001 S / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/03/10 02:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 809029

Sample: 374687-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/03/10 03:02

### SURROGATE RECOVERY STUDY

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



**Project Name: Lovington Gathering WTI**

**Work Order #: 374687**

**Analyst: ASA**

**Lab Batch ID: 809029**

**Sample: 564756-1-BKS**

**Date Prepared: 06/02/2010**

**Batch #: 1**

**Project ID: 2006-142**

**Date Analyzed: 06/02/2010**

**Matrix: Water**

**Units: mg/L**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Analytes	Units: mg/L											
	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	0.1056	106	0.1	0.1103	110	4	70-125	25	
	Toluene	ND	0.1000	0.1039	104	0.1	0.1086	109	4	70-125	25	
	Ethylbenzene	ND	0.1000	0.1065	107	0.1	0.1119	112	5	71-129	25	
	m,p-Xylenes	ND	0.2000	0.2129	106	0.2	0.2237	112	5	70-131	25	
	o-Xylene	ND	0.1000	0.1045	105	0.1	0.1096	110	5	71-133	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 / MSD Recoveries



Project Name: Lovington Gathering WTI

Work Order #: 374687

Lab Batch ID: 809029

Date Analyzed: 06/03/2010

Reporting Units: mg/L

Project ID: 2006-142

QC- Sample ID: 374687-001 S

Batch #: 1 Matrix: Water

Date Prepared: 06/02/2010

Analyst: ASA

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	0.0014	0.1000	0.0988	97	0.1000	0.0956	94	3	70-125	25
	Toluene	NID	0.1000	0.0945	95	0.1000	0.0917	92	3	70-125	25
	Ethylbenzene	NID	0.1000	0.0963	96	0.1000	0.0928	93	4	71-129	25
	m,p-Xylenes	NID	0.2000	0.1836	92	0.2000	0.1722	86	6	70-131	25
	o-Xylene	NID	0.1000	0.0923	92	0.1000	0.0874	87	5	71-133	25

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





**XENCO Laboratories**  
Atlanta, Corpus Christi, Dallas,  
Houston, Miami, Midland, Philadelphia,  
San Antonio, Tampa

Document Title: Sample Receipt Checklist  
Document No.: SYS - SRC  
Revision/Date : No.00 , 05/18/10  
Effective Date: 05/20/10  
Page No.: 1 of 1

**Prelogin / Nonconformance Report – Sample Log-In**

Client: Basin Env. / Plains  
Date/Time: 5.27.10 13:40  
Lab ID #: 374687  
Initials: AL

**Sample Receipt Checklist**

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

**Nonconformance Documentation**

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

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

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

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



Appendix B  
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  
100 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

x Initial Report ☐ Final Report

Name of Company Plains Pipeline	Contact Camille Reynolds	
Address 3112 W. US Hwy 82, Lovington, NM 88260	Telephone No. 505-441-0965	
Facility Name Lovington Gathering WTI	Facility Type 6" Steel Pipeline	
Surface Owner Robert Rice	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter H	Section 6	Township 17S	Range 37E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
------------------	--------------	-----------------	--------------	---------------	------------------	---------------	----------------	---------------

Latitude 32° 51' 56.0" Longitude 103° 17' 07.2"

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 12 barrels	Volume Recovered 8 barrels
Source of Release 6" Steel Pipeline	Date and Hour of Occurrence 4-21-2006 @ 13:00	Date and Hour of Discovery 4-21-2006 @ 13:15
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Pat Caperton	
By Whom? Camille Reynolds	Date and Hour 4-21-2006 @ 15:35	
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 while purging the line resulted in release of sweet crude oil. The line has been purged. The line is an idle 6-inch steel gathering line. The pressure on the line was approximately 50 psi and the gravity of the sweet crude oil was 34. The sweet crude has an H<sub>2</sub>S content of <10 ppm. The line was approximately 1.5 feet bgs at the release point.

Describe Area Affected and Cleanup Action Taken.\* The impacted soil was excavated and stockpiled on plastic. Aerial extent of surface impact was approximately 1,500 ft<sup>2</sup>.

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: <u>Camille Reynolds</u>	OIL CONSERVATION DIVISION	
Printed Name: Camille Reynolds	Approved by District Supervisor:	
Title: Remediation Coordinator	Approval Date:	Expiration Date:
E-mail Address: cgreynolds@paalp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 4/26/2006 Phone: 505-441-		

facility - PPAC0611638437  
incident - PPAC0611638542

application - PPAC0611639267

